

# AMPLEON



## 24/7 RF

Reference Book  
for High Performance  
RF Products



Version 1 - 2016

# The Leading Global Partner in **RF Power**

Ampleon is a young and innovative company with 50 years of experience in RF Power.

Our name, derived from “amplify” (=enhance) and “eon” (=eternity), reflects the products we stand for and our commitment to “Amplify the future” of RF Power.

## **Solutions for a Variety of Segments**

We are a leading company in the segments of Mobile Broadband; Broadcast; Industrial, Scientific & Medical, Air Traffic Control and Aerospace & Defense (LDMOS).

Furthermore, our technology and drive in innovation have defined a new market segment for controlling heat and power: RF Energy, which enables us to improve the white goods and industrial landscape with sustainable and overall higher efficiency. Given our comprehensive line-up, we have set-out to exploit the full potential of data and energy transfer in RF.

## **Global Footprint and Customer Proximity**

With our headquarters in Nijmegen/Netherlands and more than 1.250 employees worldwide, we are dedicated to creating optimal value for our customers. In more than 15 locations around the globe our international team of experts is always close to our customers and amplified by our core values of Focus, Excellence and Velocity. Our intention is to always bring our customers a significant step further with the help of outstanding RF power solutions.

## **Technology and Innovations**

We leverage leading edge process technologies for higher performance (GaN, LDMOS) and cost-efficiency to deliver a leading portfolio of options for RF Power. Our product consistency is unprecedented and we drive innovations in traditional as well as new application areas.

## **Comprehensive Support**

We build on decades of RF leadership and related application know-how. Our customers rely on our dedicated experts to help them solve their design challenges. We value high-quality long-term partnerships with our customers and thus create a clear competitive advantage.



Amplify the future

## The first-ever 24/7 RF

24/7 RF is a synonym for our dedication to RF Power: 24 hours, 7 days a week.

The first edition of this reference book not only includes our recommended product portfolio but also links it to numerous applications it is best suited for. It features product highlights, describes technologies, reveals latest trends, shows explanatory diagrams, lists features and types, packaging and packing data.

Beyond, you will find information about design support, cross references and replacements.

We are convinced that 24/7 RF is the ultimate guide to anything you need to know about Ampleon's High Performance RF products.

Enjoy reading!



24/7 RF Web Page  
[www.ampleon.com/24-7rf](http://www.ampleon.com/24-7rf)

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# EMPOWERING NEXT GENERATION MOBILE COMMUNICATION





# 1. RF Applications

## 1.1 Mobile Broadband

### 1.1.1 Base Stations (all cellular standards and frequencies)

#### RF Power Transistors for Base Stations

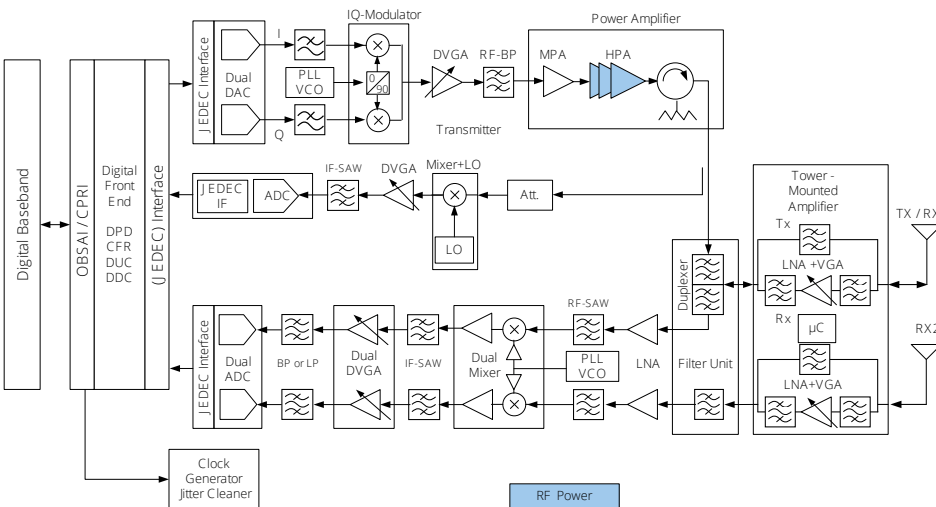
Ampleon is the fastest growing supplier of LDMOS transistors for cellular infrastructure, leading the WCDMA and LTE markets. Our promise is unprecedented performance combined with best-in-class application support and constant innovation. Our design and manufacturing technologies ensure the best PA manufacturing yields in the industry.

Ampleon's latest 9<sup>th</sup> and 10<sup>th</sup> generation LDMOS RF transistors offer the best solutions for all cellular frequency bands. With the current industry focus on cost reduction, we are extending our product portfolio with OMP and MMIC product families, which combine high performance with low cost.

#### Single-Package Asymmetric Doherty (PAD) Transistors and MMICs, Integrated Doherty

PAD devices offer the highest efficiency, smallest footprint, and best cost-effectiveness, and can deliver P1dB power levels up to 550 W. These products are DPD-friendly and show excellent video bandwidth. Our wide product portfolio covers frequency bands from 450 MHz to 3.8 GHz and average power levels from 2 to 80 W. Discrete single-stage transistors and asymmetric MMICs are available to suit most applications, from picocells to macrocells. We are now introducing integrated Doherty to reduce the size of the PAs for power levels of up to 40 W average. They exist in single- and dual-stage versions. These Doherty amplifiers integrate both the splitter and combiner inside the package.

#### Application Diagram of a Base Station



#### Product Highlight: LDMOS 2-stage Integrated Doherty BLM8D1822S-50PB(G)

This fully integrated symmetric Doherty amplifier has two main applications: driver in macro base-station power amplifiers, and final stages in small cells (generally in Doherty configuration). The BLM8D1822S-50PB(G) is a dual path 2-stage integrated Doherty and final stage (singular). This device is perfectly suited as a general-purpose driver in the frequency range from 1800 to 2200 MHz. For applications requiring higher efficiencies, asymmetric versions are in development.



#### Features

- High efficiency
- Excellent ruggedness
- Designed for broadband operation
- Excellent thermal stability
- High power gain
- Integrated ESD protection

## Integrated Doherty Amplifiers for State-of-the-Art Wireless Infrastructure

In order to achieve the highest efficiencies currently possible, Ampleon combines its latest generations of LDMOS technology with the Doherty concept. We offer the world's first fully integrated Doherty power amplifier.

The world's first fully integrated Doherty transistor looks like an ordinary class-AB transistor but contains a splitter, main and peak devices, delay lines, and a combiner integrated inside the package. With the ease of design of an ordinary class-AB amplifier, it also provides significant space and cost savings. It is ideally suited for space-constrained applications like small-cell base stations and massive antenna arrays.

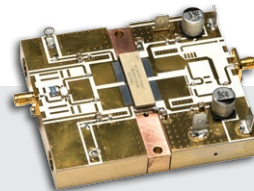
### Recommended Products

Product	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	Type
MMIC	1800	2200	3	BLM8G1822-3B*
Driver	700	2700	5	BLP8G27-5
MMIC	1800	2200	6	BLM8G1822-6B*
Driver	700	2700	10	BLP8G27-10
	3400	3800	10	BLF9G38-10(G)*
	2300	2700	10	BLP8G2327-10*
	400	1000	10	BLP6H10-10*
MMIC	700	1000	15	BLM8G0710S-15PB(G)
	700	1000	15	BLM8G0710-15B*
	1805	2170	20	BLM7G1822S-20PB(G)
Driver	2300	2700	20	BLP8G2327-20*
	1500	2200	20	BLP8G1522-20*
MMIC	1800	2200	20	BLM8G1822-20B*
Driver/final	3400	3800	25	BLF6G38S-25
MMIC	2300	2700	25	BLM8G2327S-25PB(G)*
	2100	2400	30	BLM7G24S-30BG
	700	1000	30	BLM8G0710S-30PB(G)
Driver	2110	2170	40	BLF6G22LS-40P
Driver/final	2500	2700	40	BLF6G27LS-40P(G)
MMIC	1805	2170	40	BLM7G1822S-40AB(G)
	1805	2170	40	BLM7G1822S-40PB(G)
	2300	2700	40	BLM8G2327S-40PB(G)*
	700	1000	45	BLM8G0710S-45AB(G)
Driver	700	1000	45	BLP8G10S-45P(G)
Driver/final	3400	3800	50	BLF6G38(LS)-50
MMIC	1805	2170	50	BLM8D1822S-50PB(G)
Doherty	2300	2690	60	BLC8G27LS-60AV
MMIC	2100	2200	60	BLM7G22S-60PB(G)
	700	1000	60	BLM8G0710S-60PB(G)
Final	3400	3800	75	BLF8G38LS-75V
MMIC	1805	2170	80	BLM7G1822S-80AB(G)
	1805	2170	80	BLM7G1822S-80PB(G)
Final	1800	2200	80	BLP8G20S-80P
	3400	3600	90	BLF9G38LS-90P
Doherty	2496	2690	100	BLC8G27LS-100AV

Product	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	Type
Final	2300	2400	100	BLF8G24LS-100(G)V
	2500	2700	100	BLF8G27LS-100((G)V)
	2500	2700	100	BLF8G27LS-100P
Doherty	1805	1995	120	BLC9G20LS-120V
Final	2100	2200	120	BLC10G22XS-120VT*
Doherty	2496	2690	140	BLC8G27LS-140AV
Final	1805	1990	140	BLF8G20LS-140(G)V
	2000	2200	140	BLF8G22LS-140
	2500	2700	140	BLF8G27LS-140(V)
	700	1000	140	BLP7G07S-140P
Doherty	3400	3800	140	CLF2H38LS-140* (1)
	1800	2200	140	CLF2H1822LS-140*
	2500	2700	145	CLF2H27LS-145* (1)
	2496	2690	150	BLC9G27LS-151AV
Final	2300	2400	150	BLF8G24LS-150(G)V
	2500	2700	150	BLF8G27LS-150(G)V
Doherty	1805	2025	160	BLC8G21LS-160AV
	729	960	160	BLF6H10LS-160
	920	960	160	BLF8G10L(S)-160
Final	925	960	160	BLF8G10LS-160V
	2000	2200	160	BLF8G22LS-160BV
MMIC	1800	2000	160	BLF9G20LS-160V
	1880	2025	160	BLP8G21S-160PV
	2100	2200	160	BLC9G22LS-160V
	1800	2000	160	BLC9G20LS-160PV
Final	1800	2000	160	BLC9G20XS-160AV*
	1800	1990	170	BLF8G19LS-170BV
Final	2300	2400	170	BLC9G24XS-170AV*
Doherty	2496	2690	180	BLC8G27LS-180AV
	2500	2700	200	BLC8G27LS-210PV
	1800	2000	200	BLF8G20LS-200V
	2110	2170	200	BLF8G22LS-200(G)V
Final	2300	2400	200	BLF8G24L(S)-200P(N)
	400	500	200	BLP8G05S-200(G)
	2100	2200	205	BLF8G22LS-205V

### Product Highlight: 80 W LDMOS Packaged Asymmetric Doherty Power Transistor for Base Station Applications at Frequencies from 1805 MHz to 1880 MHz BLC9G20XS-550AVT

A compact Doherty design based on three BLC9G20XS-550AVT devices achieves 48 % efficiency at 80 W average output power and 15.5 dB gain with a 2-carrier LTE signal. It has a peak power capability (P3dB) of 550 W at 28 V supply voltage.



This Doherty is designed for LTE band 3 operation and is tailored to very high peak power and volume manufacturing with high yields without tuning. The PA features very high video bandwidth, enabling full-band operation.

## Recommended Products (continued)

Product	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	Type
Final	1800	2000	220	BLF8G20LS-220
	2110	2170	220	BLF8G22LS-220
	1800	2200	220	CLF2H1822LS-220* <sup>(1)</sup>
Doherty	1800	2000	230	BLF8G20LS-230V
	2300	2400	240	BLC8G24LS-241AV
	2500	2700	240	BLC8G27LS-240AV
	1805	1995	240	BLC9G20LS-240PV
Final	2110	2170	240	BLF8G22LS-240
	2100	2200	240	BLC10G22XS-240PWT*
	1800	1900	250	BLC10G19XS-250WT*
	716	960	270	BLF8G09LS-270(G)W
	820	960	270	BLF8G10LS-270(G)V)
	2110	2170	270	BLF8G22LS-270
	2110	2170	270	BLF8G22LS-270(G)V
Final	700	900	270	BLP8G10S-270PW

<sup>(1)</sup>P3dB

\* Check status in section 3.1, as this type is not yet released for mass production. For the complete product selection please see section 3.2.

## Second Generation of GaN Products for Mobile Broadband

Ampleon is the first supplier providing both, high-performance GaN HFET and Si LDMOS technology, offering customers unbiased choices for fully optimized designs, depending on the specific requirements of each application.

Ampleon currently provides engineering samples of its second generation GaN products for cellular infrastructure in the 1.8 to 2.2, 2.7 and 3.8 GHz bands such as CLF2H1822LS-140, CLF2H1822LS-220, CLF2H27LS-145 and CLF2H38LS-140 respectively.

Based on a 0.5 μm gate-length technology Ampleon's latest generation GaN amplifiers feature excellent efficiency without compromise in power, ruggedness and linearity, significantly reducing cooling requirements and amplifier footprint.

We extend our product portfolio with Air-Cavity Plastic (ACP) packages, which combine high performance with low cost.

## Recommended Products

Product	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(3dB)</sub> (W)	Type
Driver	3400	3800	40	CLF2H38LS-40
Final	1800	2200	140	CLF2H1822LS-140*
	3400	3800	140	CLF2H38LS-140*
	2500	2700	145	CLF2H27LS-145*
	1800	2200	220	CLF2H1822LS-220*

\* Check status in section 3.1, as this type is not yet released for mass production. For the complete product selection please see section 3.2.15



### Product Highlight: LDMOS 2-stage Power MMIC BLM8G0710S-60PB

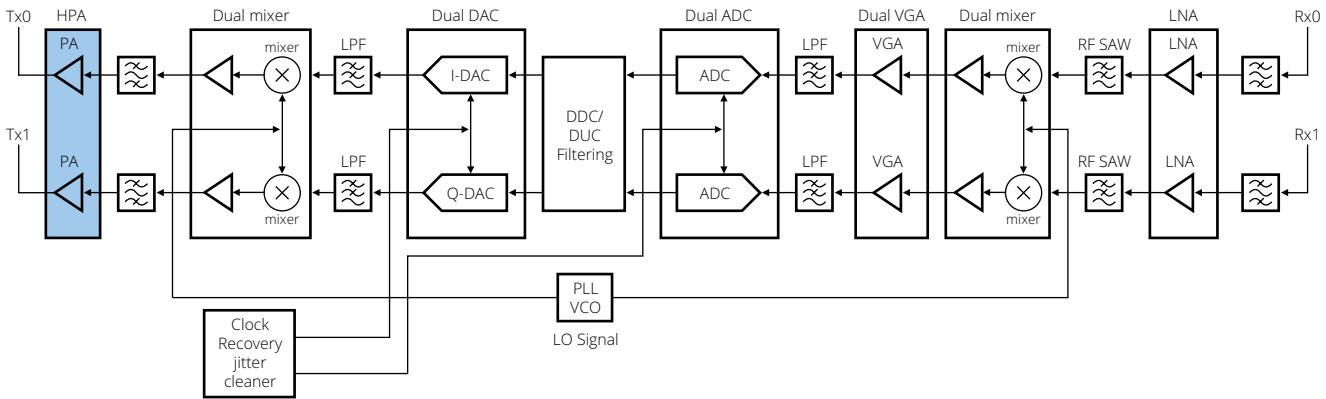
The BLM8G0710S-60PB(G) is a dual section, 2-stage power MMIC using Ampleon's state of the art GEN8 LDMOS technology. This multiband device is perfectly suited as a general purpose driver or small cell final in the frequency range from 700 MHz to 1000 MHz. Available in gull wing or straight lead outline.

### Features

- Designed for broadband operation (frequency 700 MHz to 1000 MHz)
- High section-to-section isolation enabling multiple combinations
- Integrated temperature compensated bias
- Biasing of individual stages is externally accessible
- Integrated ESD protection
- Excellent thermal stability
- High power gain
- On-chip matching for ease of use

## 1.1.2 Repeater

### Application Diagram of the Components used in a Repeater System



### Recommended Products

Product	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>1(1dB)</sub> (W)	Type
Driver	3400	3800	10	BLF9G38-10(G)*
MMIC	700	1000	15	BLM8G0710-15B*
Driver	2300	2700	20	BLP8G2327-20*
Driver	1500	2200	20	BLP8G1522-20*
MMIC	1800	2200	20	BLM8G1822-20B*
Driver	2110	2170	40	BLF6G22LS-40P
Driver/final	2500	2700	40	BLF6G27LS-40P(G)
MMIC	1805	2170	40	BLM7G1822S-40AB(G)
	2300	2700	40	BLM8G2327S-40PB(G)*
MMIC	700	1000	45	BLM8G0710S-45AB(G)
	700	1000	45	BLP8G10S-45P(G)
Driver/final	3400	3800	50	BLF6G38(LS)-50
MMIC	1805	2170	50	BLM8D1822S-50PB(G)
Doherty	2300	2690	60	BLC8G27LS-60AV
MMIC	2100	2200	60	BLM7G22S-60PB(G)
	1805	2170	80	BLM7G1822S-80AB(G)
Final	1800	2200	80	BLP8G20S-80P
	3400	3600	90	BLF9G38LS-90P

<sup>(1)</sup> P3dB

\* Check status in section 3.1, as this type is not yet released for mass production  
For the complete product selection please see section 3.2



### Product Highlight: LDMOS 2-stage Power MMIC BLM7G1822S-40AB(G)

The BLM7G1822S-40AB(G) is a dual section, asymmetric, 2-stage power MMIC using Ampleon's state of the art GEN7 LDMOS technology. This multiband device is perfectly suited as small cell final in Doherty configuration, or as general purpose driver in the 1805 MHz to 2170 MHz frequency range. Available in gull wing or straight lead outline.

### Features

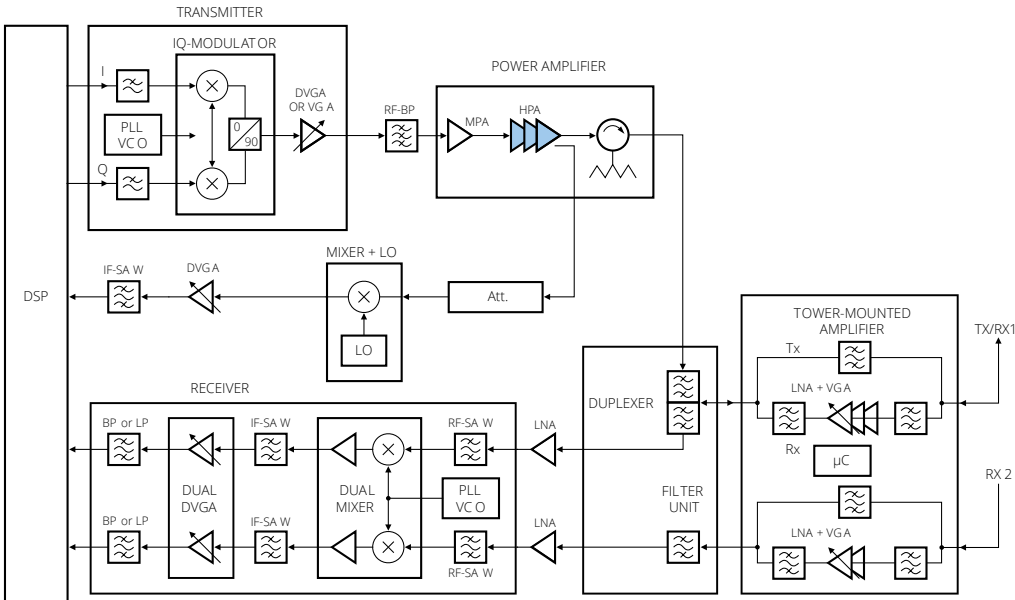
- Designed for broadband operation (frequency 1805 MHz to 2170 MHz)
- High section-to-section isolation enabling multiple combinations
- High Doherty efficiency thanks to 2 : 1 asymmetry
- Integrated temperature compensated bias
- Biasing of individual stages is externally accessible
- Integrated ESD protection
- Excellent thermal stability
- High power gain
- On-chip matching for ease of use



## 1.1.3 Small Cells

With the explosion of cellular data usage and the limited number of sites available for new macro base stations, operators have to find new ways of offering high data rates and excellent quality of service. One option is to strengthen the macro network with small cells, known as picocells (0.25 to 1 W average) and microcells (2 to 5 W average). Ampleon offers several types of solutions to the small-cell PAs designer, optimized for performance, integration, or cost.

### Application Diagram of a typical Small-cell Base Station



### Recommended Products

Product	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	Type
Driver	1800	2200	3	BLM8G1822-3B*
	700	2700	5	BLP8G27-5
	1800	2200	6	BLM8G1822-6B*
	700	2700	10	BLP8G27-10
	3400	3800	10	BLF9G38-10(G)*
	2300	2700	10	BLP8G2327-10*
	2300	2700	20	BLP8G2327-20*
1500	2200	20	BLP8G1522-20*	
Driver/final	3400	3800	25	BLF6G38S-25
Driver	2300	2700	25	BLM8G2327S-25PB(G)*
	2110	2170	40	BLF6G22LS-40P

Product	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	Type
Driver/final	2500	2700	40	BLF6G27LS-40P(G)
Final	1805	2170	40	BLM7G1822S-40AB(G)
Driver	2300	2700	40	BLM8G2327S-40PB(G)*
Final	700	1000	45	BLM8G0710S-45AB(G)
Driver	700	1000	45	BLP8G10S-45P(G)
Driver/final	1805	2170	50	BLM8D1822S-50PB(G)
Doherty	2300	2690	60	BLC8G27LS-60AV
Driver	2100	2200	60	BLM7G22S-60PB(G)
Final	1805	2170	80	BLM7G1822S-80AB(G)
	1800	2200	80	BLP8G20S-80P
	3400	3600	90	BLF9G38LS-90P

<sup>(1)</sup>P3dB

\* Check status in section 3.1, as this type is not yet released for mass production  
For the complete product selection please see section 3.2.13



### Product Highlight: Power LDMOS Transistor BLM8D1822-25B

The BLM8D1822-25B is a 25 W plastic PQFN LDMOS dual-stage integrated Doherty PA designed for micro-cell applications. This cost-efficient, wideband device has an ultra-small footprint and covers all base-station frequencies from 1800 to 2200 MHz.

### Features

- High efficiency
- Excellent ruggedness
- Designed for broadband operation
- Excellent thermal stability
- High power gain
- Integrated ESD protection

# AMPLIFYING THE FUTURE OF TV & BROADCASTING



## 1.2 Broadcast

### Amplifying the Future of TV & Broadcasting

Digital TV accounts for over 70 % of the broadcasting market. With parts of the UHF band reallocated for mobile telephony (e.g. LTE), operators need to make the most efficient use of the remaining spectrum.

### LDMOS Solutions from the Industry Leader for all Segments of the Broadcast Market

Addressing these demands for more efficiency, the broadcasting market is moving away from traditional class A-B solutions. Solutions based on narrowband and ultra-wideband Doherty power amplifiers deliver increased efficiency of 50 % and above. In the near future, asymmetrical Doherty amplifiers may provide even higher efficiencies.

We are committed to the UHF-TV industry and continue to invest in UHF-TV LDMOS technology, so that we can deliver products that support increasingly rich content.

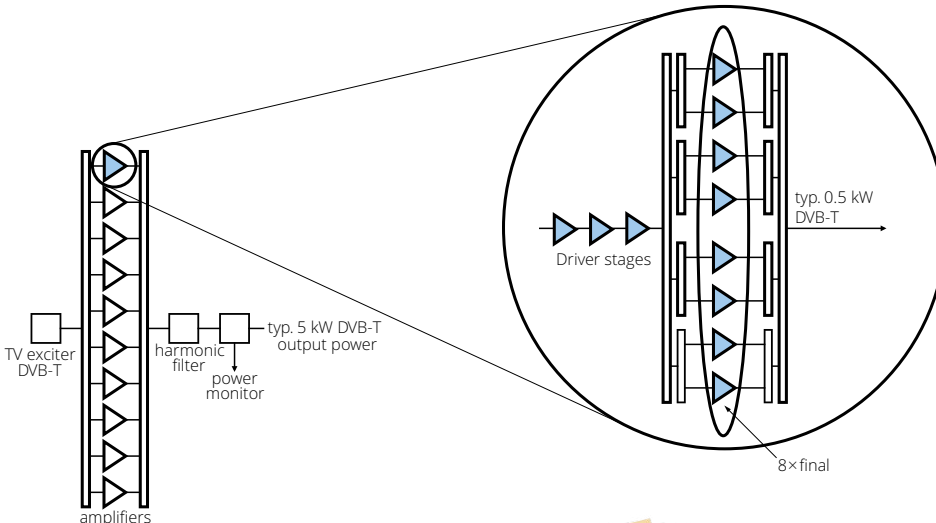
### VHF, FM, and Analog TV Markets

Ampleon has enabled the market to transition to and reap the benefits of LDMOS-based solutions. And we will continue to support our legacy products through customer product life-cycles. We have recently enhanced our broadcast offering with a full range of eXtremely Rugged (XR) products in our Overmoulded Plastic (OMP) package platform.

### Solutions

- FM/HDR/DAB Radio
- UHF/D-TV
- VHF/D-TV

### Application Diagram of a TV Transmitter



### Product Highlight: UHF Power LDMOS Transistor BLF888D(S)

Designed for broadcast Doherty transmitter applications, including broadcast transmitters in the UHF band and digital broadcasting systems, this 650 W LDMOS RF power transistor delivers excellent ruggedness and is ideally suited for use in digital and analog environments.



### Features

- High efficiency
- High power gain
- Excellent ruggedness (VSWR > 40 : 1 through all phases)
- Excellent thermal stability
- Integrated ESD protection

## 1.2.1 FM/HDR/DAB Radio

### FM (88 - 108 MHz)

FM applications need pure power, resulting in high power building blocks. Ampleon's FM solutions not only deliver high power but are highly efficient, with our latest devices exceeding 85 % efficiency.

Furthermore, FM solutions must be capable of operating under the harshest of conditions. Our eXtremely Rugged (XR) packaging which supports VSWR > 65 : 1 ensures our products and your service keeps going despite severe operational conditions.

### DAB and HDR

DAB and HDR radio have the same basic requirements as FM: power and robustness. In addition, as they operate across a broader frequency range, they also need to be highly linear. Ampleon's BLFxxxXR transistor series is both highly linear and stable, making them ideal for these systems.

Ampleon also creates demonstration and reference designs that are optimized in size and performance for radio broadcasting. These designs are often implemented directly by customers into their systems.

### Features and Benefits

- Small footprint
- Ready for production designs
- Printed planar balun design instead of coaxial baluns

### Recommended Products

Product	Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
Driver	BLP10H603	SOT1352-1	10	1400	2.5	50	62	22.8	CW
	BLP10H605	SOT1352-1	10	1400	5	50	59.6	22.4	CW
	BLP35M805	SOT1371-1	10	3500	5	28	17	18	CW pulsed, class-AB
	BLP10H610	SOT1352-1	10	1400	10	50	60	22	CW
	BLP27M810	SOT1371-1	10	2700	10	28	19	17	Pulsed CW
	BLF571	SOT467C	10	500	20	50	70	27.5	CW
	BLP05H635XR	SOT1223-2	10	600	35	50	75	27	Pulsed RF
Driver/final	BLP05H675XR	SOT1223-2	10	600	75	50	75	27	Pulsed RF
	BLP05H6110XR	SOT1223-2	10	600	110	50	75	27	Pulsed RF
	BLP05H6150XR	SOT1223-2	10	600	150	50	75	27	Pulsed RF
Final	BLP05H6250XR	SOT1223-2	10	600	250	50	75	27	Pulsed RF
	BLF182XR(S)	SOT1121A(B)	10	600	250	50	75	28	Pulsed RF

\* Check status in section 3.1, as this type is not yet released for mass production  
For the complete product selection please see section 3.3



### Product Highlight: Power LDMOS Transistor BLP182XR(S)

This 1400 W high power, extremely rugged LDMOS power transistor is ideal for broadcast and industrial applications in the HF to 600 MHz band.

### Features

- Easy power control
- Integrated ESD protection
- Excellent ruggedness
- High efficiency
- Excellent thermal stability
- Designed for broadband operation (HF to 600 MHz)

## Recommended Products (continued)

Product	Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
Final	BLP05H6350XR	SOT1223-2	10	600	350	50	75	27.5	Pulsed RF
	BLF183XR(S)	SOT1121A(B)	10	600	350	50	75	28	Pulsed RF
	BLF174XR(S)	SOT1214A(B)	10	128	600	50	73	29	Pulsed RF
	BLF184XR(S)	SOT1214A(B)	10	600	700	50	73.5	23.9	Pulsed RF
	BLF184XRG	SOT1214B	10	600	700	50	73.5	23.9	Pulsed RF
	BLP05H6700XR*	SOT1138-2	10	600	700	50	73	23	Pulsed RF
	BLF178P	SOT539A	10	128	1200	50	75	28.5	Pulsed RF
	BLF178XR(S)	SOT539A(B)	10	128	1400	50	72	28	Pulsed RF
	BLCU188XRS*	SOT1250-2	10	600	1400	50	73	24.4	Pulsed RF
	BLF188XR(S)	SOT539A(B)	10	600	1400	50	73	24.4	Pulsed RF
BLF188XRG	SOT1248C	10	600	1400	50	73	24.4	Pulsed RF	

\* Check status in section 3.1, as this type is not yet released for mass production  
For the complete product selection please see sections 3.3

## 1.2.2 UHF/D-TV

The UHF (470 - 800 MHz) market is diversifying and taking different approaches to the implementation of full band coverage with highest possible efficiency. The two main paths are single band ultra-wideband Doherty (UWB) solutions or classical or wideband Doherty solutions using sub-bands.

Ampleon supports both approaches with dedicated RF power transistors and application designs. For example, our latest BLF888E transistor is a 3-band ultra-wideband Doherty solution achieving 50 % efficiency across the band. This is a unique solution in the market.

For classical Doherty we are also developing solutions based on our upcoming BLF898 transistor which will have the highest DVB-T power capability (180 W average) and will be capable of covering the complete UHF band using a flexible output combiner design with multiple sub-bands. We are also working on an odd-mode Doherty solution based on the upcoming BLF898(S).

## Recommended Products

Product	Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	P <sub>L(AV)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
Driver	BLP35M805	SOT1371-1	10	3500	5	-	28	17	18	CW pulsed, class-AB
	BLP27M810	SOT1371-1	10	2700	10	-	28	19	17	Pulsed CW

\* Check status in section 3.1, as this type is not yet released for mass production  
For the complete product selection please see section 3.3



### Product Highlight: UHF Power LDMOS Transistor BLF888E(S)

The BLF888E is a 750 W LDMOS RF power transistor for UHF broadcast Doherty transmitter applications. The excellent ruggedness of this device makes it ideal for digital and analog transmitter applications.

### Features

- Designed for asymmetric Doherty operation
- High efficiency
- Integrated ESD protection
- Excellent ruggedness
- High power gain
- Excellent reliability
- Easy power control

## Recommended Products (continued)

Product	Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	P <sub>L(AV)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
Driver	BLF640	SOT538A	10	2200	10	-	28	31	19.3	1-c W-CDMA
	BLF571	SOT467C	10	500	20	-	50	70	27.5	CW
	BLP10H630P*	SOT1223-2	10	1000	30	-	50	68	18	Pulsed RF
	BLF642	SOT467C	1	1400	35	-	32	63	19	CW
	BLP10H660P*	SOT1223-2	10	1000	60	-	50	68	18	Pulsed RF
	BLP10H690P*	SOT1223-2	10	1000	90	-	50	68	18	Pulsed RF
Driver/final	BLP10H6120P*	SOT1223-2	10	1000	120	-	50	68	18	Pulsed RF
	BLF881(S)	SOT467C(B)	1	1000	140	-	50	49	21	CW
Final/class-AB	BLP15M7160P	SOT1223-2	10	1500	160	-	28	59.7	19.4	CW
	BLF882(S)	SOT502A(B)	10	860	200	-	50	63	20.6	CW
	BLF884P(S)	SOT1121A(B)	470	860	300	-	50	46	21	CW
	BLF888A(S)	SOT539A(B)	470	860	600	110	50	31	20	DVB-T (8k OFDM)
Final/Doherty	BLF888B(S)	SOT539A(B)	470	860	650	120	50	33	21	DVB-T (8k OFDM)
	BLF888D(S)	SOT539A(B)	470	806	-	115	50	40	17	DVB-T (8k OFDM)
Final/class-AB	BLF888E(S)*	SOT539A(B)	470	790	-	150	50	52	17	DVB-T (8k OFDM)
	BLF898(S)*	SOT539A(B)	470	806	900	180	50	32	16	DVB-T (8k OFDM)

\* Check status in section 3.1, as this type is not yet released for mass production  
For the complete product selection please see section 3.4

## 1.2.3 VHF/D-TV

### VHF-TV Band (170 - 250 MHz)

Ampleon's RF solutions for VHF-TV are highly efficient, with our latest solutions exceeding 85 % efficiency. These high power solutions provide the building blocks needed to deliver the necessary broadcast reach. These products also need to be able to operate in extremely harsh conditions making them the ideal candidates for our eXtremely Rugged offering which supports VSWR > 65 : 1. For design purposes, linearity needs to be pre-correctable.

For VHF-TV applications, Ampleon offers demonstration and reference class-AB applications that are optimized in both size and performance. These designs are often implemented directly by customers into their systems.

## Recommended Products

Product	Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
Driver	BLP10H603	SOT1352-1	10	1400	2.5	50	62	22.8	CW
	BLP10H605	SOT1352-1	10	1400	5	50	59.6	22.4	CW
	BLP35M805	SOT1371-1	10	3500	5	28	17	18	CW pulsed, class-AB

\* Check status in section 3.1, as this type is not yet released for mass production  
For the complete product selection please see section 3.3



### Product Highlight: Power LDMOS Transistor BLP05H6350XR

The BLP05H6350XR is a 350 W LDMOS RF power transistor for broadcast transmitter and industrial applications. It can deliver 350 W in broadband applications from HF to 600 MHz. Its excellent ruggedness and broadband performance make it ideal for digital transmitter applications.

### Features

- Integrated ESD protection
- Excellent ruggedness
- High efficiency
- Excellent reliability
- Easy power control



## Recommended Products (continued)

Product	Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>D</sub> (dB)	Test signal
Driver	BLP10H610	SOT1352-1	10	1400	10	50	60	22	CW
	BLP27M810	SOT1371-1	10	2700	10	28	19	17	Pulsed CW
	BLF571	SOT467C	10	500	20	50	70	27.5	CW
	BLP05H635XR	SOT1223-2	10	600	35	50	75	27	Pulsed RF
	BLP05H675XR	SOT1223-2	10	600	75	50	75	27	Pulsed RF
Driver/final	BLP05H6110XR	SOT1223-2	10	600	110	50	75	27	Pulsed RF
	BLP05H6150XR	SOT1223-2	10	600	150	50	75	27	Pulsed RF
Final	BLP05H6250XR	SOT1223-2	10	600	250	50	75	27	Pulsed RF
	BLF182XR(S)	SOT1121A(B)	10	600	250	50	75	28	Pulsed RF
	BLF573(S)	SOT502A(B)	10	500	300	50	70	27.2	CW
	BLP05H6350XR	SOT1223-2	10	600	350	50	75	27.5	Pulsed RF
	BLF183XR(S)	SOT1121A(B)	10	600	350	50	75	28	Pulsed RF
	BLF574	SOT539A	10	500	600	50	70	26.5	CW
	BLF574XR(S)	SOT1214A(B)	10	500	600	50	74.7	24	Pulsed RF
	BLF184XR(S)	SOT1214A(B)	10	600	700	50	73.5	23.9	Pulsed RF
	BLF184XRG	SOT1214C	10	600	700	50	73.5	23.9	Pulsed RF
	BLP05H6700XR*	SOT1138-2	10	600	700	50	73	23	Pulsed RF
	BLF578	SOT539A	10	500	1200	50	75	26	CW
	BLF578XR(S)	SOT539A(B)	10	500	1400	50	69	23.5	Pulsed RF
	BLCU188XRS*	SOT1250-2	10	600	1400	50	73	24.4	Pulsed RF
	BLF188XR(S)	SOT539A(B)	10	600	1400	50	73	24.4	Pulsed RF
	BLF188XRG	SOT1248C	10	600	1400	50	73	24.4	Pulsed RF

\* Check status in section 3.1, as this type is not yet released for mass production  
For the complete product selection please see section 3.3



### Product Highlight: UHF Power LDMOS Transistor BLCU188XRS

The BLCU188XRS is a 1400 W extremely rugged LDMOS power transistor for broadcast and industrial applications in the HF to 600 MHz band.

### Features

- Easy power control
- Integrated dual sided ESD protection
- Excellent ruggedness
- High efficiency
- Excellent thermal resistance due to copper flange
- Designed for broadband operation (HF to 600 MHz)

A photograph of industrial machinery, possibly a lathe or mill, with a large shower of bright orange and yellow sparks flying from the cutting point. The scene is lit with a cool blue light, creating a high-contrast, dramatic effect. The machinery is dark and metallic, with some parts appearing to be made of wood or a lighter material. The sparks are dense and fill the lower half of the frame, creating a sense of intense activity and heat.

ROBUST SOLUTIONS  
SERVING IN HARSH  
AND SENSITIVE  
ENVIRONMENTS



## 1.3 Industrial, Scientific and Medical (ISM)

The ISM frequency bands feature a diverse range of applications including chemical processing, magnetic resonance imaging (MRI), electro coagulation surgical equipment, precipitation monitoring, and wind profiling. Yet, all these applications share common requirements, such as high output power, high efficiency, robustness and thermal stability.

### Rugged Solutions, Harsh Environments

Systems operating in the ISM band need to share their bandwidth with short-range, low-power communications systems and radio-frequency identification (RFID) applications. Many ISM applications suffer from severely unmatched inputs and outputs, demanding very rugged solutions. Whatever the challenge, we have the RF power solutions you need.

### RF Power for ISM up to 1600 MHz

Our portfolio includes field-proven LDMOS devices that help developers create ISM systems that deliver high performance and a long lifetime.

### RF Power for the ISM 2.45 GHz Band

Due to its global availability, the 2.45 GHz band supports a wide range of ISM applications including medical therapy as well as many RF Energy applications (see section 1.4).

### Low Power Transistors

Ranging from 2 W to tens of watts, our complete portfolio of low power RF transistors includes devices across all ISM frequencies and applications. This makes Ampleon the one-stop source for all your ISM RF needs.

### Typical Applications

- RF drying
- RF welding
- Citizens' Band (CB) radio communication
- Magnetic Resonance Imaging (MRI)
- CO<sub>2</sub> lasers
- Plasma generators
- Particle accelerators
- RF heating
- RF thawing
- Chemical processing
- Plasma lighting



### Product Highlight: Broadband LDMOS Driver Transistor BLP10H610

The BLP10H610 is a 10 W LDMOS broadband driver transistor in an OMP package that is ideal for ISM applications operating at frequencies from HF to 1400 MHz.

### Features

- Easy power control
- Integrated ESD protection
- Excellent ruggedness
- High efficiency
- Excellent thermal stability
- Designed for broadband operation (HF to 1400 MHz)

### 1.3.1 Instrumentation

Ampleon offers a range of RF transistors and evaluation kits for RF instrumentation applications. Our wideband amplifiers feature low noise and are exceedingly linear, making them particularly suitable for feedback channels in a wide range of measuring equipment including vector signal transceivers, signal generators and RF power meters.

### 1.3.2 Medical and Industrial Imaging

Visual presentations are necessary for doctors or clinicians to understand what is going on inside their patients. Ampleon works with many established brands in helping improve the world of healthcare through safe, efficient and groundbreaking medical imaging concepts.

However MRI is not only used for medical applications, it can also be used in the industrial market. For example, MRI is used to measure gas flow in the petrochemical industry.

### 1.3.3 CO<sub>2</sub> Laser Exciters and Plasma Generators

CO<sub>2</sub> lasers turn electrical energy into concentrated infrared light energy. The plasma is formed by the gas when electrical energy transforms into heat. This same process is used for plasma generators.

High power CO<sub>2</sub> lasers are used for cutting and welding while lower power applications include engraving. Plasma generators are primarily used for power generation or to accelerate particle beams, and for plasma etching or deposition in the semiconductor industry.

These devices need high power amplifiers. High power generates heat. Even highly efficient designs still need to dissipate extra heat effectively and our ACP3 package, with its low thermal resistance, helps doing that even for very high power systems.

### 1.3.4 Particle Accelerators

Particle accelerators have endless potential including the development of clean energy, purification of air or water, targeted cancer treatment, detecting suspicious shipments and of course discovering scientific breakthroughs.

There are three different types of particle accelerators: the synchrotron, linear accelerator (linac) and cyclotron.

A cyclotron accelerates charged particles outwards from the centre along a spiral path, using a rapidly varying (radio frequency) electric field, cyclotrons are widely used to produce particle beams in physics and nuclear medicine.



#### **Product Highlight:** **Broadband Power LDMOS Transistor BLF647P**

The BLF647P is a 200 W LDMOS RF power transistor for industrial applications in the HF to 1500 MHz frequency range. Its excellent ruggedness and broadband performance make it ideal for digital applications.

#### **Features**

- Integrated ESD protection
- Excellent ruggedness
- High power gain
- High efficiency
- Excellent reliability
- Easy power control



Synchrotrons are cyclic particle accelerators that enable large-scale facilities, since bending, beam focusing and acceleration can be separated into different components. The 27 km long Large Hadron Collider in CERN Switzerland is the world's largest synchrotron.

Linear accelerators are increasingly being used in the medical industry for cancer treatment and creating radioactive isotopes. Linacs run at high power with multiple amplifiers needed to generate particles.

### Recommended Products for ISM 0 - 500 MHz

Product	Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L</sub> (dB) (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
Driver	BLP10H610	SOT1352-1	10	1400	10	50	60	22	CW
	BLP05H635XR	SOT1223-2	10	600	35	50	75	27	Pulsed RF
	BLP05H675XR	SOT1223-2	10	600	75	50	75	27	Pulsed RF
Driver/final	BLP05H6110XR	SOT1223-2	10	600	110	50	75	27	Pulsed RF
	BLP05H6150XR	SOT1223-2	10	600	150	50	75	27	Pulsed RF
Final	BLF182XR(S)	SOT1121A(B)	10	600	250	50	75	28	Pulsed RF
	BLP05H6250XR	SOT1223-2	10	600	250	50	75	27	Pulsed RF
	BLF183XR(S)	SOT1121A(B)	10	600	350	50	75	28	Pulsed RF
	BLP05H6350XR	SOT1223-2	10	600	350	50	75	27.5	Pulsed RF
	BLF184XR(G)	SOT1214(C)	10	600	700	50	73.5	23.9	Pulsed RF
	BLF184XRS	SOT1214B	10	600	700	50	73.5	23.9	Pulsed RF
	BLP05H6700XR*	SOT1138-2	10	600	700	50	73	23	Pulsed RF
	BLP05H6700XRG*	SOT1204-2	10	600	700	50	73	23	Pulsed RF
	BLF188XR(S)	SOT539A(B)	10	600	1400	50	73	24.4	Pulsed RF
	BLF188XRG	SOT1248C	10	600	1400	50	73	24.4	Pulsed RF
BLCU188XRS*	SOT1250-2	10	600	1400	50	73	24.4	Pulsed RF	

### Recommended Products for ISM 0 - 1600 MHz

Product	Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L</sub> (dB) (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
Driver	BLP35M805	SOT1371-1	10	3500	5	28	17	18	CW pulsed, class-AB
	BLF640	SOT538A	10	2200	10	28	31	19.3	1-c W-CDMA
	BLP10H610	SOT1352-1	10	1400	10	50	60	22	CW
	BLP27M810	SOT1371-1	10	2700	10	28	19	17	Pulsed CW
	BLP10H630P*	SOT1223-2	10	1000	30	50	68	18	Pulsed RF
	BLF642	SOT467C	1	1400	35	32	63	19	CW
	BLP10H660P*	SOT1223-2	10	1000	60	50	68	18	Pulsed RF
Driver/final	BLP10H690P*	SOT1223-2	10	1000	90	50	68	18	Pulsed RF
	BLF645	SOT540A	1	1400	100	32	56	18	CW
	BLP10H6120P*	SOT1223-2	10	1000	120	50	68	18	Pulsed RF
	BLP15M7160P	SOT1223-2	10	1500	160	28	59.7	19.4	CW
Final	BLF1721M8LS200	SOT502B	1700	2100	200	28	28.5	19	2-c W-CDMA
	BLF2324M8LS200P	SOT539B	2300	2400	200	28	32	17.2	1-c W-CDMA
	BLF647P(S)	SOT1121A(B)	10	1500	200	32	70	18	Pulsed RF
	BLF6G13L(S)-250P	SOT1121A(B)	1300	1300	250	50	56	17	CW
	BLF6G15L(S)-500H	SOT539A(B)	1400	1500	500	50	19	16	DVB-T (8k OFDM)
BLF10H6600P(S)	SOT539A(B)	400	1000	600	50	46	20.8	2-Tone, class-AB	

\* Check status in section 3.1, as this type is not yet released for mass production  
For the complete product selection please see section 3.4



### Product Highlight: Power LDMOS Transistor BLF188XR

The BLF188XR is a 1400 W extremely rugged LDMOS power transistor for industrial applications, capable of providing an outstanding 1600 W of peak output power. It can operate as high as 50 V and still pass extreme ruggedness testing. The BLF188XR transistor's ruggedness and excellent load properties make it ideal for MRI applications.

### Features

- Easy power control
- Integrated ESD protection
- Excellent ruggedness
- High efficiency
- Excellent thermal stability

# CONTROLLING HEAT AND POWER





## 1.4 RF Energy

Solid state RF Energy represents a radical approach to powering many different types of applications. For cooking, heating and drying it replaces large, inflexible magnetron tubes with a small, controllable and accurate power source. For lighting, it provides a highly efficient source that is close to natural light. And in plasma ignition, it enables cleaner combustion to improve fuel economy and reduce carbon emissions.

Ampleon is a founding member of the RF Energy Alliance whose members share the vision of building a fast-growing and innovative marketplace and ecosystem around the use of solid state RF Energy as a highly efficient and controllable source of heat and power.

### Solutions

- RF cooking
- RF lighting
- RF heating and drying
- Plasma ignition

### Recommended Products

Function	Product	Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
RF cooking	Driver	<b>BLF2425M9L(S)30</b>	SOT1135A(B)	2400	2500	30	32	61	18.5	CW
	Final	<b>BLC2425M8LS300P*</b>	SOT1250-1	2400	2500	300	32	58	17	CW
	Driver	<b>BLP27M810</b>	SOT1371-1	10	2700	10	28	19	17	Pulsed CW
	Final	<b>BLC2425M9XS250*</b>	SOT1270-1	2400	2500	250	32	61	18	CW
RF lighting	Driver	<b>BLP35M805</b>	SOT1371-1	10	3500	5	28	17	18	CW pulsed, class-AB
	Final	<b>BLC05M6XS200*</b>	SOT1270-1	425	450	200	28	82	21	CW
	Driver	<b>BLP10H605</b>	SOT1352	10	1400	5	50	59.6	22.4	CW
	Final	<b>BLP05H6350XR</b>	SOT1223-2	10	600	350	50	75	27.5	Pulsed CW
RF heating and drying	Driver	<b>BLF2425M9L(S)30</b>	SOT1135A(B)	2400	2500	30	32	61	18.5	CW
	Final	<b>BLC2425M8LS300P*</b>	SOT1250-1	2400	2500	300	32	58	17	CW
	Driver	<b>BLP27M810</b>	SOT1371-1	10	2700	10	28	19	17	Pulsed CW
	Final	<b>BLC2425M9XS250*</b>	SOT1270	2400	2500	250	32	61	18	CW
	Driver	<b>BLP27M810</b>	SOT1371-1	10	2700	10	28	19	17	Pulsed CW
	Final	<b>BLC2425M9XS250*</b>	SOT1270-1	2400	2500	250	32	61	18	CW
	Final	<b>BLF0910H6LS500*</b>	SOT502B	900	930	500	50	60	18	CW
RF ignition	Predriver	<b>BLP27M810</b>	SOT1371	10	2700	10	32	30	17	Pulsed CW
	Driver	<b>BLF2425M7LS100</b>	SOT502	2300	2500	120	32	55	17.5	Pulsed CW
		<b>BLM2425M7S60P</b>	SOT1211	2300	2500	90	32	38	23	Pulsed CW
	Final	<b>BLC2425M9LS700PV*</b>	SOT1258-1	2400	2500	1200 <sup>(1)</sup>	32	50	12.5	Pulsed CW

<sup>(1)</sup>P3dB pulsed.  $\theta \leq 10\%$

\* Check status in section 3.1, as this type is not yet released for mass production  
For the complete product selection please see section 3.4



### Product Highlight: Power LDMOS Transistor BLC2425M9XS250

The BLC2425M9XS250 power transistor is one of the first devices to use our ACP3 technology. Its copper flanges deliver leading R<sub>th</sub> performance and thermal conductivity. A plastic air-cavity package further improves efficiency by avoiding contact with the bond wires.

### Features

- Copper flange
- R<sub>th</sub> performance
- Excellent ruggedness
- Plastic air-cavity

# REVOLUTIONIZING COOKING



## 1.4.1 RF Cooking

### Cooking your Food to Perfection

Our solid state RF solutions will change the kitchen landscape. RF ovens perform more efficiently than conventional and microwave-based ovens. And by providing increased control and power, food can be cooked more precisely, keeping taste, texture and all the vitamins.

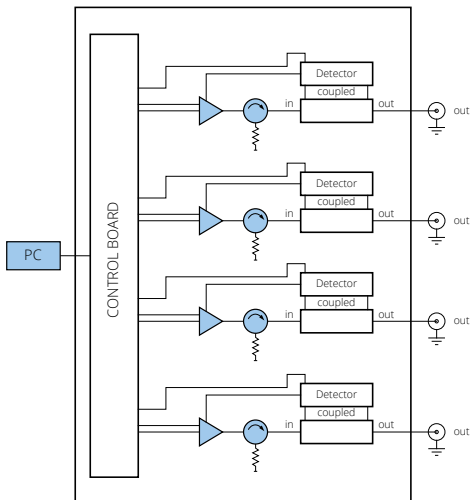
Replacing a single magnetron with multiple solid state RF sources brings additional possibilities for controlling the waveform inside the oven. The frequency can be changed to match the type of food being cooked and by adjusting the phase of the signals, the energy distribution can be altered to ensure every meal is cooked to perfection.

For the professional market, RF Energy solutions provide fast, reliable and accurate cooking to help fast food chains and restaurants provide a speedy and appetizing service. In the home, RF Energy solutions not only cooks food to perfection but also enables new form factors, such as tabletop ovens.

### Key Features and Benefits

- Cooks homogeneously
- Less moisture lost than microwave or conventional ovens
- Accurate, controlled flexible cooking
- Able to cook different food items at the same time
- Ability to monitor cooking process
- Supports different form factor designs
- Long lifetime
- Reduced maintenance costs

### Application Diagram of a Solid State Cooking System



### Product Highlight: Power LDMOS Transistor BLC2425M9XS250

The BLC2425M9XS250 power transistor is one of the first devices to use our ACP3 technology. Its copper flanges deliver leading  $R_{th}$  performance and thermal conductivity. A plastic air-cavity package further improves efficiency by avoiding contact with the bond wires.



### Features

- Copper flange
- $R_{th}$  performance
- Excellent ruggedness
- Plastic air-cavity



BRINGING ENERGY  
TO LIGHT



## 1.4.2 RF Lighting

Our understanding of RF technology has enabled us to create some of the most rugged devices in the industry - know-how that we have instilled into our RF lighting transistors. In addition, the very high efficiency of our LDMOS transistors also allows our RF lighting solutions to deliver very high lumens/watt, beating conventional sources.

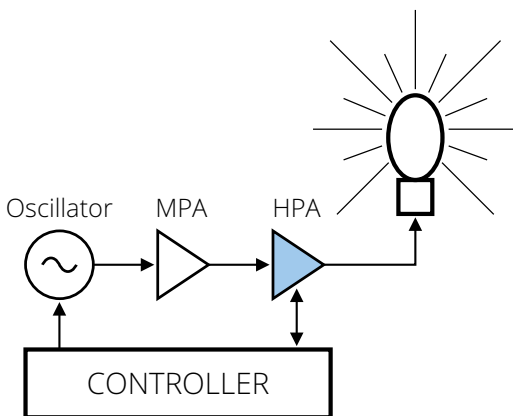
Our latest RF lighting solutions are ideal for both indoor and outdoor area lighting in architectural, entertainment, high bay and agricultural/horticultural applications. In the horticulture segment, RF lighting delivers full spectrum light which can help to increase the speed of cultivating and the quality of crops for the next generation of farmers. This also makes it ideal for retail applications to ensure items, from food to the latest fashion, look more natural under indoor lighting.

With energy savings of up to 50 % over high-pressure sodium and metal halide systems and long lamp lifetimes, RF lighting helps to reduce maintenance costs in high bay/high mast installations from car parks to warehouses.

### Key Features and Benefits

- Full spectrum light
- Controllability
- Dimmable
- Energy saving
- Long lifetime
- Lower maintenance cost
- Smaller form factor design

### Application Diagram of RF Light-Emitting Plasma (LEP)



### Product Highlight: Power LDMOS Transistor BLC05M6XS200

The BLC05M6XS200 is designed for high-power CW applications and is assembled in a high performance plastic package. This 200 W LDMOS power transistor for RF lighting applications operates at frequencies from 425 MHz to 450 MHz.



### Features

- High efficiency
- Easy power control
- Excellent ruggedness
- Excellent thermal stability
- Integrated ESD protection
- Designed for broadband operation (425 MHz to 450 MHz)
- Internally input matched for high gain

### 1.4.3 RF Heating and Drying

Industrial RF heating and drying is fast and flexible. It allows for a quicker and streamlined production process for many manufacturing applications. It provides uniform heating and drying, a reduction in emissions and improvements in product quality and efficiency.

We offer RF heating and drying solutions for both the 915 MHz and 2.45 GHz ISM frequency bands. Available as individual transistors or complete pallets, our solutions can be easily scaled to deliver the needed power and can assist in reducing emissions, improving efficiency and speeding up production processes. RF heating and drying can be used for a wide range of applications from food preparation to chemical processing.

#### Key Features and Benefits

- Faster uniform drying
- Excellent ruggedness
- Thermal stability
- Efficiency savings
- Controllability, with available feedback loop
- Heat spreads evenly across a target
- Prevents local overheating
- Improved product quality
- Unprecedented system reliability



#### Product Highlight: Power LDMOS Transistor BLF0910H6LS500

This 500 W LDMOS power transistor is suitable for industrial applications in the 915 MHz frequency band. The BLF0910H6LS500 is designed for high power CW applications and is assembled in a high performance ceramic package.

#### Features

- High efficiency
- Easy power control
- Excellent ruggedness
- Integrated ESD protection
- Designed for broadband operation (900 MHz to 930 MHz)
- Internally input matched



## 1.4.4 RF Ignition

### A Revolution in Automotive Ignition

The automotive industry is facing increasingly tough emission challenges. New European regulations to be introduced in 2021 will reduce fleet CO<sub>2</sub> emissions from today's 130 g/km to 95 g/km. While electric vehicles will play a role in meeting these new targets, they still only represent a small percentage of vehicles sold. Automotive manufacturers will also need to make their combustion engine vehicles more efficient and RF ignition offers a new and exciting concept which can improve fuel efficiency and reduce pollutants.

RF plasma ignition is an emerging technology which has been in development for more than five years. Ampleon has been working closely with partners to make this new technique a reality for efficient automotive use.

Micro plasma ignition has advantages over the traditional spark plug as it enables more complete combustion, allowing for a leaner fuel mix and thus reducing carbon emissions and the need for catalytic converters or custom exhausts.

### Key Features and Benefits

- Cost-efficient
- Easy implementation
- Improved fuel efficiency
- Reduced emissions



### Product Highlight: Power LDMOS Transistor BLC2425M9LS700PV

This is a 1200 W LDMOS power transistor for industrial applications at 2.45 GHz, and particularly automotive plasma ignition. The BLF2425M9LS700PV is designed for high power low duty cycle pulsed applications and is assembled in a high performance ACP2 package.

### Features

- Very high output power
- High efficiency
- 2400 to 2500 MHz operation
- Internal input and output matching
- Integrated rise/fall time protection

MAKING THE WORLD  
A MORE PREDICTABLE  
PLACE



## 1.5 Aerospace & Defense

### SWaP + CR

Size, Weight and Power (SWaP) have long been the key requirements for aircraft systems. Systems need to be small, lightweight and yet still powerful enough for long range operation. Moreover, today's systems must also be Cost-efficient and Reliable (CR).

As a recognized global leader in base station and broadcast transmitters, Ampleon strengthens a broad portfolio for the strategic aerospace & defense market. With 50 years of experience in RF, Ampleon is an established, market leading supplier with a wealth of knowledge and expertise. We are committed to fully support customers' applications with a dedicated longevity program that guarantees our parts will continue to be available throughout the operational lifetime.

In addition to GaN solutions that deliver the highest performance, we also offer dedicated Gen9 LDMOS solutions that provide close to GaN performance at a much lower cost and with higher reliability and ruggedness. By being technology agnostic, we can help customers find the best possible solution for their application needs.

All our aerospace & defense products are ITAR-free, simplifying logistics and paperwork for designs aimed at export markets. We also provide global application support with offices in the US, Europe and Asia.

### Fast Time to Market

To ensure you get your solutions to market as quick as possible, we offer discrete RF components, MMICs and complete RF pallets.

### 1.5.1 Radar

Commercial avionics and military radar applications include air traffic control, situational awareness, weather radar, surveillance, fire control, searching and tracking. These systems cover a wide range of operating frequencies and there is an ongoing transition within solid state power amplifier solutions and from bipolar to LDMOS and GaN. Ampleon offers a broad portfolio of dedicated LDMOS and GaN solutions that covers all these frequency bands with highly reliable solutions.

### Frequency Bands

- Sub-1 GHz
- Commercial Avionics (950 - 1215 MHz / 1030 - 1090 MHz)
- L-band (1 - 2 GHz)
- S-band (2 - 4 GHz)
- C-band (4 - 8 GHz)
- X-band (8 - 12 GHz)
- Ku-band (12 - 18 GHz)



### Product Highlight: LDMOS S-band Radar Power Transistor BLS9G2934L(S)-400

The BLS9G2934L(S)-400 is a 400 W LDMOS power transistor intended for S-band radar applications in the 2.9 to 3.4 GHz range.

### Features

- Easy power control
- Integrated dual sided ESD protection enables excellent off-state isolation
- High flexibility with respect to pulse formats
- Excellent ruggedness
- High efficiency
- Excellent thermal stability
- Designed for S-band operation
- Internally matched for ease of use

## 1.5.2 Electronic Counter Measures (ECM)

Electronic counter measures / jammers are used in all walks of life from defense systems to cellular jammers. High power is critical for this market along with a wide frequency range and high efficiency. Ampleon's solutions ensure effective coverage across a broad bandwidth with the highest power GaN products on the market.

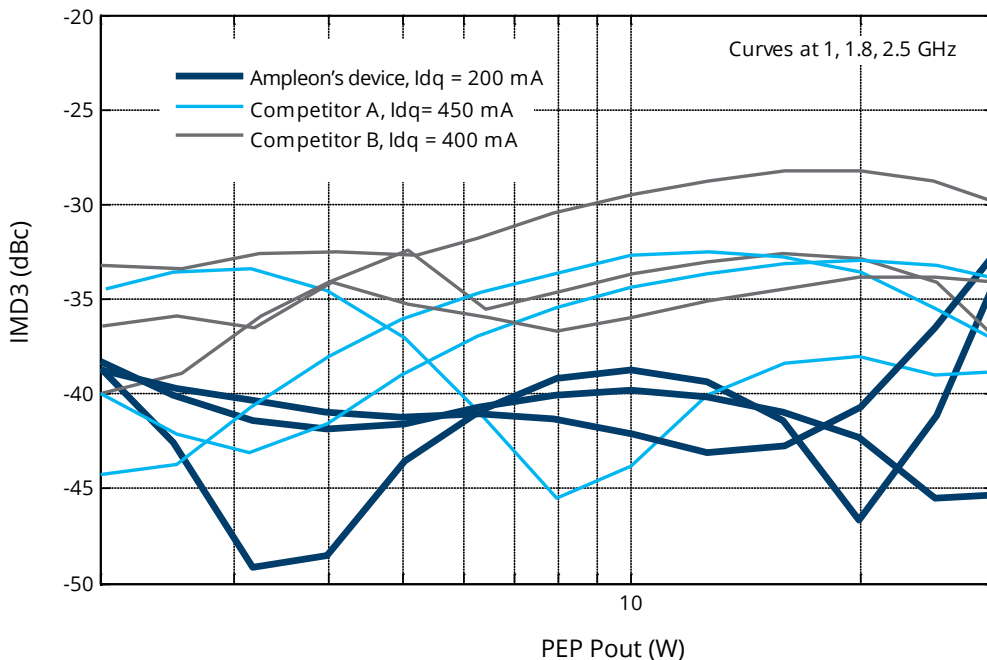
### Application Support

To support customers in developing and bringing new ECM solutions to market quickly, we have a range of demo boards available on request.

## 1.5.3 Military Communication Systems (Milcom)

RF solutions for Milcom applications require the highest linearity to ensure clear, interference-free communication. Ampleon offers dedicated solutions for Milcom applications that perform up to 10 dBc (IMD3 linearity) better than competitive products. Our portfolio includes both GaN and LDMOS devices.

### 50 W GaN Device Comparison in 1000 - 2500 MHz 50 W Demonstration Board 18502-tone Intermodulation Distortion, $\Delta f=1$ MHz, $V_d=50$ V



### Product Highlight: Broadband RF Power GaN HEMT CLF1G0035(S)-200P

The CLF1G0035-200P and CLF1G0035S-200P are 200 W general purpose broadband GaN HEMTs usable from DC to 3.5 GHz.



### Features

- Operating frequency from DC to 3.5 GHz
- 200 W general purpose broadband RF Power GaN HEMT
- Excellent ruggedness (VSWR 10 : 1)
- High voltage operation (50 V)
- Thermally enhanced package



## Recommended LDMOS Products for ECM & Milcom

Product	Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Linearity, (2-tone IMD3)	Test signal
Driver	BLP35M805	SOT1371-1	10	3500	5	28	17	18	-	CW pulsed, class-AB
	BLP10H610	SOT1352-1	10	1400	10	50	35 to 57	> 22	-40 dBc, PEP 5 W	CW @ 20 to 512 MHz
	BLF571	SOT467C	10	500	20	50	40 to 53	> 14	-38 dBc, PEP 10 W	CW @ 200 to 800 MHz
	BLF642	SOT467C	1	1400	35	32	71	> 22	-40 dBc, PEP 10 W	CW @ 30 to 512 MHz
	BLF644P	SOT1228A	10	1300	70	32	30 to 38	> 18	-39 dBc, PEP 15 W	CW @ 10 to 600 MHz
	BLF645	SOT540A	1	1400	100	32	50 to 70	> 22	-30 dBc, PEP 100 W	CW @ 20 to 512 MHz
Final	BLF881(S)	SOT467C(B)	1	1000	140	50	60 to 75	> 17	-30 dBc, PEP 100 W	CW @ 30 to 512 MHz
	BLF647P(S)	SOT1121A(B)	10	1500	200	32	50 to 64	> 22	-36 dBc, PEP 100 W	CW @ 10 to 600 MHz
	BLF183XR(S)	SOT1121A(B)	10	600	350	50	54 to 61	> 14	-40 dBc, PEP 220 W	CW @ 30 to 512 MHz
	BLF574	SOT539A	10	500	600	50	45 to 60	> 20	-35 dBc, PEP 400 W	CW @ 20 to 550 MHz
	BLF574XR(S)	SOT1214A(B)	10	500	600	50	74,7	24	-	Pulsed RF
	BLF184XR(G)	SOT1214A(C)	10	600	700	50	73,5	23,9	-	Pulsed RF
BLCU188XRS*	SOT1250-2	10	600	1400	50	73	24,4	-	Pulsed RF	

## Recommended GaN Products for ECM & Milcom

Product	Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Linearity, (2-tone IMD3, Δf= 1 MHz)	Test signal
Driver	CLF1G0060(S)-10	SOT1227A(B)	0	6000	> 10	50	30 to 60	> 14	-40 dBc, PEP 5 W	Pulsed RF @ 200 to 3200 MHz
	CLF1G0060(S)-30	SOT1227A(B)	0	6000	> 30	50	45 to 70	> 11	-40 dBc, PEP15 W	Pulsed RF @ 500 to 3000 MHz
	CLF1G0035(S)-50	SOT467C(B)	0	3500	> 50	50	40 to 65	> 14	-40 dBc, PEP 10 W	CW @ 500 to 2500 MHz
Final	CLF1G0035(S)-100P	SOT1228A(B)	0	3500	> 100	50	50 to 55	> 13	-40 dBc, PEP 20 W	Pulsed RF @ 2500 to 3000 MHz
	CLF1G0035(S)-100	SOT467C(B)	0	3500	> 100	50	47 to 80	> 14	-40 dBc, PEP 20 W	Pulsed RF @ 500 to 2500 MHz
	CLF1G0035(S)-200P	SOT1228A(B)	0	3500	> 200	50	40 to 55	> 12	-40 dBc, PEP 120 W	Pulsed RF @ 1700 to 2300 MHz

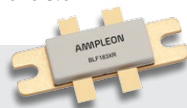
## Recommended LDMOS Products for Sub-1 GHz

Product	Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
Driver	BLP10H610	SOT1352-1	10	1400	10	50	60	22	CW
	BLP10H630P*	SOT1223-2	10	1000	30	50	68	18	Pulsed RF
	BLP05H635XR	SOT1223-2	10	600	35	50	75	27	Pulsed RF
	BLP10H660P*	SOT1223-2	10	1000	60	50	68	18	Pulsed RF
	BLP05H675XR	SOT1223-2	10	600	75	50	75	27	Pulsed RF
Driver/final	BLP10H6120P*	SOT1223-2	10	1000	120	50	68	18	Pulsed RF
	BLF182XR(S)	SOT1121A(B)	10	600	250	50	75	28	Pulsed RF
	BLF183XR(S)	SOT1121A(B)	10	600	350	50	75	28	Pulsed RF
	BLF574XR(S)	SOT1214A(B)	10	500	600	50	74,7	24	Pulsed RF
	BLF184XR(G)	SOT1214A(C)	10	600	700	50	73,5	23,9	Pulsed RF
	BLF578	SOT539A	10	500	1200	50	75	26	CW
	BLCU188XRS*	SOT1250-2	10	600	1400	50	73	24,4	Pulsed RF

## Recommended GaN Products for C-Band

Product	Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
Driver	CLF1G0060(S)-10	SOT1227A(B)	0	6000	10	50	55	17	Pulsed RF @ 5000 MHz
	CLF1G0060(S)-30	SOT1227A(B)	0	6000	30	50	49	14	Pulsed RF @ 4000 MHz

\* Check status in section 3.1, as this type is not yet released for mass production  
For the complete product selection please see sections 3.5 and 3.6



### Product Highlight: Power LDMOS Transistor BLF183XR(S)

The BLF183XR is a 350 W extremely rugged LDMOS power transistor for and industrial applications in the HF to 600 MHz band.

### Features

- Easy power control
- Integrated ESD protection
- Excellent ruggedness
- High efficiency
- Excellent thermal stability
- Broadband operation (HF to 600 MHz)



DRIVING  
TECHNOLOGIES FOR  
BEST PERFORMANCE





# 2. Technologies

## 2.1 Best-in-Class LDMOS to drive any RF Power Application

LDMOS (Laterally Diffused Metal Oxide Semiconductor) is the mainstream device technology used in high-power RF amplifiers for frequencies ranging from 10 MHz to 3.8 GHz. LDMOS offers significant performance advantages, including very high ruggedness and efficiency, high gain, and compatibility with low-cost packaging platforms. LDMOS also offers a strong cost advantage combined with a large industrial base versus other technologies, such as GaN.

Ampleon's LDMOS technology platforms are designed for devices that run from supply voltages in the range of 28 to 50 V, with outstanding efficiency, power, and ruggedness. The technology draws on Ampleon's heritage of proven product and technology innovation in RF, which spans over 35 years. Ampleon's LDMOS devices deliver record performance up to 3.8 GHz and are applied extensively by wireless network operators to realize best-in-class efficiencies for wireless base stations and hence reduce operating costs. Our first Gen10 LDMOS products are releasing to production in 2016 and have been optimized for LTE and with 1.5 dB higher power gain and modulated power added efficiencies in the excess of 50 % at 2.1 GHz.

### High Power Doherty Processes and Architectures

We achieved these high efficiencies by developing optimized LDMOS devices with specific Doherty amplifier circuit designs. Our LDMOS process technology is developed to support Doherty amplifiers with the combination of high power, high efficiency, low memory effects and excellent pre-distortion capabilities. Ampleon supplies Doherty amplifier circuits both as discrete transistor products and integrated as Packaged Asymmetric Doherty (PAD) products in a single high power transistor package. These are fully RF tested at the Doherty level to guarantee performance in the customer's application circuit, demonstrate the strengths of Ampleon's LDMOS to deliver new levels of consistency in power distribution over a die, and also in production, from batch to batch and year to year.

### Broadband MMICs and Drivers

Ampleon has specifically developed a broad portfolio of high performance MMIC products to simplify the overall amplifier line up. These are high efficiency 2-stage multiband amplifiers, covering frequency ranges 0.7 - 1 GHz, 1.8 - 2.2 GHz, 2.3 - 2.7 GHz or 3.4 - 3.8 GHz, and packaged in low cost overmolded plastic. They line-up seamlessly with the high power Doherty products or can be used as standalone transmit amplifiers for lower power applications, e.g. small cells. We are extending the portfolio in 2016 with integrated Doherty MMICs where the input splitter and output combiner of the Doherty circuit are integrated into the MMIC package to enhance broadband performance and minimize overall application size.

### Multi Market: Higher Power Densities and Ruggedness

For the Broadcast, ISM and Aerospace & Defense markets, Ampleon has developed a family of LDMOS process platforms to provide devices tuned to the specific needs of these applications. For example, the Gen6HV technology has been optimized for 42 to 50 V operation, and improved further as XR2 to enable devices with ruggedness on par with legacy VDMOS technology. The Gen6XR process is essential for ISM applications which suffer from severe mismatch conditions, since Gen6XR enables products that withstand a 1:65 mismatch ratio without compromising the RF performance while still delivering output powers up to 1600 W CW. For broadcast applications, Ampleon offers a broad portfolio of 50 V LDMOS products that set new milestones in terms of power density and provide a unique high efficiency solution when combined with our patented Ultra-Wideband (UWB) Doherty technology to cover the full broadcast frequency spectrum.

### Aerospace & Defense Applications

The improvements in LDMOS technology have enabled the aerospace & defense radar markets to migrate from designs using Si bipolar power transistors to LDMOS. LDMOS RF performance is superior to Si bipolar, has a simpler application and significant cost-of-ownership benefits in these markets. Gen6HV products provide highly efficient solutions for Avionics L-band radar applications. Our Gen10 LDMOS has a competitive high frequency performance at 2.7 - 3.8 GHz addressing S-band radar supplementing a full portfolio of broadband GaN devices.

## **Solid State RF Energy**

The promise of RF Energy is a cleaner, more efficient, and more effective power source than conventional solutions. From solid state cooking and RF sparkplugs, to RF plasma lighting and medical therapy, to industrial cooking and drying, the possibilities for RF Energy are nearly limitless. A radical approach is sometimes needed to break through existing limitations and this is exactly what RF Energy offers. Ampleon has a portfolio of tailored LDMOS amplifiers to meet the requirements of individual RF Energy applications, from solid state lighting at 433 MHz, to industrial heating at 900 MHz to consumer cooking at 2.45 GHz. Power levels up to 1200 W are supported and complemented by a full portfolio of drivers to create the full power line-up needed in any RF Energy application.

## **Benefits**

- Competitive products to fit all applications covered by LDMOS
- Continuous technology improvements meet market needs
- Dedicated technology nodes designed around specific application requirements

## **Features**

Gen9/10 with enhanced VBW performance for 28 - 32 V base-station, aerospace & defense applications

Gen8/9 dual stage multiband MMICs

Gen6XR for 50 V ISM applications requiring extreme ruggedness

Gen6HV for 50 V high power-density for broadcast



## 2.2 Best-in-Class GaN for High Frequency Performance

With more than 35 years of experience in delivering RF power transistors, Ampleon leads the industry in offering GaN RF power devices through a secure and reliable mainstream supply chain for wireless infrastructure, industrial, scientific and medical (ISM), and aerospace and defense applications.

Ampleon's second generation 50 V GaN process technology features best-in-class linearity while at the same time allowing designers to maintain power, ruggedness, and efficiency. Our third generation GaN processes are being released in 2016, offering a further increase in power density and performance at 50 V as well as a 30 V GaN node for high frequency applications. GaN technology features best-in-class linearity while at the same time allowing designers to maintain power, ruggedness, and efficiency. This enables an uncompromised amplifier design that can minimize component count and reduce amplifier footprint. Our leading back-end assembly facility consistently leverages the high power density of GaN into smaller and more broadband circuitry. Through a broad portfolio of high performance GaN and LDMOS products, Ampleon offers an unbiased choice in enabling optimized designs for your application.

### Setting New Performance Boundaries for RF Power Amplifiers

GaN products are also called High-Electron Mobility Transistors (HEMT), a name that captures one of the intrinsic benefits of GaN – the high electron drift velocity. However, these transistors are depletion-mode devices, so they are normally on and require a negative gate bias to switch them off. This biasing is not straightforward but Ampleon has proven bias circuitry to support any application. A further advantage of GaN is that it is a very strong semiconductor material, so it is capable of withstanding very high temperatures. Ampleon's GaN transistors are specified to a maximum temperature of 250 °C, compared to 225 °C for Si LDMOS. With such high temperature capability, there is a greater need to have packages capable of exploiting this feature. For this, customers benefit from Ampleon's 35-year legacy in RF power products. Simply put, GaN technology makes a step increase in efficiency and power density performance over Si LDMOS in several applications (see figure below).

### High Efficiency Doherty Architectures

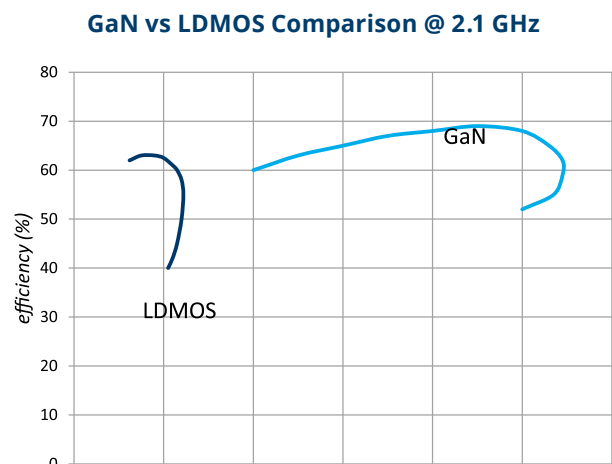
Ampleon's GaN process technology has been developed to support Doherty amplifiers with the combination of high power, high efficiencies, low memory effects, and low pre-distortion due to trapping effects. To create high efficiency Doherty circuits, we developed optimized GaN devices with specific impedance matching in the amplifier circuit to boost the performance. As with our LDMOS solutions, Ampleon supplies Doherty amplifier circuits both as discrete transistor products and integrated as packaged asymmetric Doherty (PAD) products and we are also releasing low power 30 V MMICs for higher frequency applications.

### Key Features and Benefits

- High frequencies and bandwidth up to 6 GHz for 50 V GaN and 12 GHz for 30 V GaN
- High efficiency and excellent linearity
- High power density
- Operation at higher temperatures, without loss of reliability (250 °C compared to 225 °C for Si LDMOS)
- Excellent ruggedness

### Applications

- Commercial wireless infrastructure (base stations)
- Radar systems and jammers
- Broadband and narrowband general-purpose amplifiers
- Public mobile radios
- ISM applications: test instrumentation and EMC testing



## 2.3 RF Power Transistor Packages

Packaging is an important element in RF power transistors, influencing both the cost-efficiency and performance of a given device. Since peak powers can vary widely, from as low as 5 W to more than 1 kW, a range of packages is needed to cover every application. The choice of package format (air-cavity or overmolded plastic), often depends on the design requirements, and any trade-offs to be made between performance and cost.

### Air-Cavity Packages

The traditional package for RF power transistors is the air-cavity package with a ceramic lid. The flange (or heatsink) material has evolved over the years and the most commonly used material today is CPC (Cu/Mo70Cu/Cu), a laminate of copper and copper-molybdenum. This material has been selected for its thermal properties, providing a low  $R_{th}$  (compared to the Cu-W used earlier) as well as a good CTE (Thermal Expansion Coefficient) match with the silicon used for the active dies and the internal matching capacitors. The package is made of three parts: flange, ringframe and lid. The flange is brazed with the ringframe at high temperature and the resulting component is known as a header. Active and passive dies are then soldered to the flange and wire bonds are used to create the matching circuits and the connections with the leads. The transistor is then closed by gluing the lid on top. The final step consists of testing the product for compliance to specification.

### Air-Cavity Ceramic (ACC) Packages

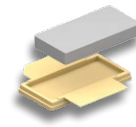
Air-cavity ceramic packages have proven their reliability and performance over the years and exist in a variety of sizes and power levels. They present a number of advantages but also some disadvantages. They are assembled one by one, thereby demanding a high handling time, and the brazing of the ringframe with the flange creates stress and distortions. Also, each package variation (such as additional leads, or shorter leads) demands the creation of a unique header and there are limited economies of scale.



SOT1135B\*



SOT1120B



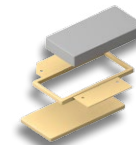
ACC Package Structure



SOT1121B\*



SOT539A



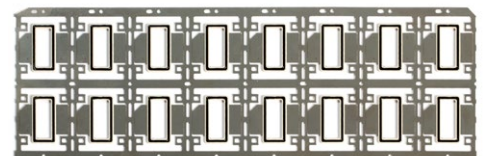
The Three Components of an ACP Transistor:  
CPC flange, Polymer Ringframe, Polymer Lid

\* Not drawn to scale

For the complete ACC package overview please see section 6.1

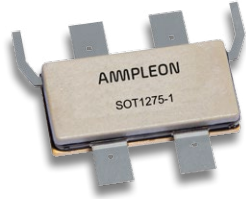
### Air-Cavity Plastic (ACP) Packages

In order to overcome the limitations of the ACC package while keeping its performance advantages, Ampleon has introduced a new family of packages known as Air-Cavity Plastic (ACP2). Their structure is similar to ACC but the lid and the ringframe are made of polymers instead of ceramic. This enables the ringframe to be glued to the flange rather than brazed, and reduces the stress and distortions of the flange. This in turn allows the use of thinner matching capacitors, reducing RF losses both at the gate and the drain. The result is higher gain and efficiency compared to the ACC format. In addition, the assembly process uses strips rather than individual headers, reducing handling time and allowing more variation in lead shape and length while



A Strip of ACP Transistors

simplifying logistics. The improved ACP3 package has a further key enhancement by replacing the traditional CPC flange with a Cu flange which gives a 30 % improvement in thermal performance as well as simplifying the board level assembly to provide a highly effective cost-efficient RF package solution.



SOT1275-1\*



SOT1278-1\*

\* Not drawn to scale  
For the complete ACP package overview please see section 6.1

### Overmolded Plastic (OMP) Packages

A third transistor package family is overmolded plastic (OMP). The package structure is similar to that of an integrated circuit, with a copper flange and a molded body, but discrete wire bonds are used in the matching network for improved RF performance.

OMP packages have a number of outlines, from the HVQFN package for low power drivers, to PQFN package for higher power drivers, and the SOT502 format of packages for dual path MMICs, and discretes. OMP is an ideal package for low frequency and low power applications. For the highest performance applications, where the last percentage and decibel matter, air-cavity packages remain the best option.

The wide range of packages offered by Ampleon enables you to select the right device precisely optimized for your application and allows to find the best compromise between cost and performance.



HVQFN



MMIC



Driver



Discrete Final

\* Not drawn to scale  
For the complete OMP package overview please see section 6.1



EMBRACING  
UNCOUNTED  
APPLICATIONS





# 3. RF Product Portfolio

Ampleon Product Catalog  
[www.ampleon.com/products](http://www.ampleon.com/products)

## 3.1 New Products

DEV = in Development  
RFS = Released for Supply

Type	Application/description	Expected status per May 2016	Planned release	Section
<b>New: RF Power LDMOS Transistors for Base Station Applications</b>				
<b>BLM8G1822-3B</b>	Plastic LDMOS MMIC transistor for base station applications	DEV	Q4-16	3.2.3
<b>BLP8G27-5</b>	Plastic LDMOS transistor for base station applications	RFS	Released	3.2.2
<b>BLM8G1822-6B</b>	Plastic LDMOS MMIC transistor for base station applications	DEV	Q4-16	3.2.3
<b>BLF9G38-10(G)</b>	Ceramic LDMOS transistor for base station applications	DEV	Q2-16	3.2.7
<b>BLP6H10-10</b>	Plastic LDMOS transistor for base station applications	DEV	Q4-16	3.2.1
<b>BLP8G2327-10</b>	Plastic LDMOS transistor for base station applications	DEV	Q3-16	3.2.6
<b>BLP8G27-10</b>	Plastic LDMOS transistor for base station applications	RFS	Released	3.2.2
<b>BLM8G0710-15B</b>	Plastic LDMOS MMIC transistor for base station applications	DEV	Q4-16	3.2.1
<b>BLM8G0710S-15PB(G)</b>	Plastic LDMOS MMIC transistor for base station applications	RFS	Released	3.2.1
<b>BLM8G1822-20B</b>	Plastic LDMOS MMIC transistor for base station applications	DEV	Q4-16	3.2.3
<b>BLP8G1522-20</b>	Plastic LDMOS transistor for base station applications	DEV	Q3-16	3.2.2
<b>BLP8G2327-20</b>	Plastic LDMOS transistor for base station applications	DEV	Q3-16	3.2.5
<b>BLM8D1822-25B</b>	Plastic LDMOS MMIC transistor for base station applications	DEV	Q1-17	3.2.3
<b>BLM8G2327S-25PB(G)</b>	Plastic LDMOS MMIC transistor for base station applications	DEV	Q1-17	3.2.6
<b>BLM8G2327S-40PB(G)</b>	Plastic LDMOS MMIC transistor for base station applications	DEV	Q4-16	3.2.6
<b>BLM8G0710S-45AB(G)</b>	Plastic LDMOS MMIC transistor for base station applications	RFS	Released	3.2.1
<b>BLM8D1822S-50PB(G)</b>	Plastic LDMOS MMIC transistor for base station applications	RFS	Released	3.2.3
<b>BLC8G27LS-60AV(H)</b>	Air-cavity plastic LDMOS PAD transistor for base station applications	RFS	Released	3.2.6
<b>BLM8G0710S-60PB(G)</b>	Plastic LDMOS MMIC transistor for base station applications	RFS	Released	3.2.1
<b>BLM7G1822S-80PB(G)</b>	Plastic LDMOS MMIC transistor for base station applications	RFS	Released	3.2.3
<b>BLF9G38LS-90P</b>	Ceramic LDMOS transistor for base station applications	RFS	Released	3.2.7
<b>BLC10G22XS-120VT</b>	Air-cavity plastic LDMOS transistor for base station applications	DEV	Q4-16	3.2.4
<b>BLC9G20LS-120V</b>	Air-cavity plastic LDMOS power transistor for base station applications	RFS	Released	3.2.3
<b>BLC9G27LS-151AV</b>	Air-cavity plastic LDMOS PAD transistor for base station applications	RFS	Released	3.2.6
<b>BLC9G20XS-160AV</b>	Air-cavity plastic LDMOS PAD transistor for base station applications	DEV	Q3-16	3.2.3
<b>BLC9G24XS-170AV</b>	Air-cavity plastic LDMOS asymmetrical Doherty power transistor for base station applications	DEV	Q3-16	3.2.5
<b>BLP8G05S-200(G)</b>	Plastic LDMOS transistor for base station applications	RFS	Released	3.2.1
<b>BLF8G22LS-205V</b>	Ceramic LDMOS transistor for base station applications	RFS	Released	3.2.4
<b>BLC10G22XS-240PWT</b>	Air-cavity plastic LDMOS transistor for base station applications	DEV	Q4-16	3.2.4
<b>BLC8G27LS-240AV</b>	Air-cavity plastic LDMOS PAD transistor for base station applications	RFS	Released	3.2.6
<b>BLC9G20LS-240PV</b>	Air-cavity plastic LDMOS power transistor for base station applications	RFS	Released	3.2.3
<b>BLC8G24LS-241AV</b>	Air-cavity plastic LDMOS PAD transistor for base station applications	RFS	Released	3.2.5
<b>BLC10G19XS-250WT</b>	Air-cavity plastic LDMOS transistor for base station applications	DEV	Q4-16	3.2.3
<b>BLP8G10S-270PW</b>	Plastic LDMOS symmetric Doherty transistor for base station applications	RFS	Released	3.2.1
<b>BLC9G20LS-361AVT</b>	Air-cavity plastic LDMOS PAD transistor for base station applications	RFS	Released	3.2.3
<b>BLC8G09XS-400AWT</b>	Air-cavity plastic LDMOS PAD transistor for base station applications	DEV	Q3-16	3.2.1
<b>BLC9G15LS-400AVT</b>	Air-cavity plastic LDMOS PAD transistor for base station applications	RFS	Released	3.2.2
<b>BLC9G15XS-400AVT</b>	Air-cavity plastic LDMOS asymmetrical Doherty power transistor for base station applications	DEV	Q4-16	3.2.2

RF Product Portfolio

Type	Application/description	Expected status per May 2016	Planned release	Section
BLC9G20XS-400AVT	Air-cavity plastic LDMOS PAD transistor for base station applications	DEV	Q2-16	3.2.3
BLC9G22XS-400AVT	Air-cavity plastic LDMOS PAD transistor for base station applications	DEV	Q2-16	3.2.4
BLC9H10XS-400A	Air-cavity plastic LDMOS PAD transistor for base station applications	DEV	Q4-16	3.2.1
BLC9H10XS-400P	Air-cavity plastic LDMOS transistor for base station applications	DEV	Q4-16	3.2.1
BLC8G22LS-450AV	Air-cavity plastic LDMOS PAD transistor for base station applications	RFS	Released	3.2.4
BLC9G20LS-470AVT	Air-cavity plastic LDMOS PAD transistor for base station applications	RFS	Released	3.2.3
BLC9G20XS-550AVT	Air-cavity plastic LDMOS PAD transistor for base station applications	DEV	Q2-16	3.2.3
<b>NEW: Gallium Nitride (GaN) RF Power Transistors for Base Station Applications</b>				
CLF2H1822LS-140	Gen2 GaN HEMT for base station applications	DEV	Q1-17	3.2.15
CLF2H38LS-140	Gen2 GaN HEMT for base station applications	DEV	Q3-16	3.2.15
CLF2H27LS-145	Gen2 GaN HEMT for base station applications	DEV	Q4-16	3.2.15
CLF2H1822LS-220	Gen2 GaN HEMT for base station applications	DEV	Q1-17	3.2.15
<b>New: RF Power LDMOS Transistors for FM/UHF/VHF/RF Energy - ISM Applications</b>				
BLP35M805	Plastic LDMOS transistor for broadcast/RF Energy - ISM applications	RFS	Released	3.3.2
BLP27M810	Plastic LDMOS transistor for broadcast/RF Energy - ISM applications	RFS	Released	3.3.2
BLF2425M9L(S)30	Ceramic LDMOS transistor for broadcast/RF Energy - ISM applications	RFS	Released	3.4.5
BLP10H630P	Plastic LDMOS transistor for broadcast/RF Energy - ISM applications	DEV	Q3-16	3.3.1
BLP05H635XR	XR plastic LDMOS transistor for broadcast/RF Energy - ISM applications	RFS	Released	3.3.2
BLM2425M7S60P	Ceramic LDMOS transistor for broadcast/RF Energy - ISM applications	RFS	Released	3.4.5
BLP10H660P	Plastic LDMOS transistor for broadcast/RF Energy - ISM applications	DEV	Q3-16	3.3.1
BLP05H675XR	XR plastic LDMOS transistor for broadcast/RF Energy - ISM applications	RFS	Released	3.3.2
BLP10H690P	Plastic LDMOS transistor for broadcast/RF Energy - ISM applications	DEV	Q3-16	3.3.1
BLP05H6110XR	XR plastic LDMOS transistor for broadcast/RF Energy - ISM applications	RFS	Released	3.3.2
BLP10H6120P	Plastic LDMOS transistor for broadcast/RF Energy - ISM applications	DEV	Q3-16	3.3.1
BLF2425M9LS140	Ceramic LDMOS transistor for RF Energy - ISM applications	DEV	Q2-16	3.4.5
BLP05H6150XR	XR plastic LDMOS transistor for broadcast/RF Energy - ISM applications	RFS	Released	3.3.2
BLC05M6XS200	Air-cavity plastic LDMOS power transistor for RF lighting applications	DEV	Q2-16	3.3.2
BLF1721M8LS200	Ceramic LDMOS transistor for RF Energy - ISM applications	RFS	Released	3.4.2
BLF882(S)	Ceramic LDMOS transistor for broadcast/RF Energy - ISM applications	RFS	Released	3.3.1
BLC2425M9XS250	Air-cavity plastic LDMOS transistor for RF Energy - ISM applications	DEV	Q3-16	3.4.5
BLF182XR(S)	XR ceramic LDMOS transistor for broadcast/RF Energy - ISM applications	RFS	Released	3.3.2
BLF6G13LS-250PG	Ceramic LDMOS transistor for broadcast/RF Energy - ISM applications	RFS	Released	3.3.3
BLP05H6250XR	XR plastic LDMOS transistor for broadcast/RF Energy - ISM applications	RFS	Released	3.3.2
BLC2425M8LS300P	Air-cavity plastic LDMOS transistor for RF Energy - ISM applications	DEV	Q2-16	3.4.5
BLP05H6350XR	XR plastic LDMOS transistor for broadcast/RF Energy - ISM applications	RFS	Released	3.3.2
BLC2425M9XS500P	Air-cavity plastic LDMOS transistor for RF Energy - ISM applications	DEV	Q1-17	3.4.5
BLF0910H6LS500	Ceramic LDMOS transistor for RF Energy - ISM applications	DEV	Q3-16	3.4.4
BLC2425M9LS700PV	Air-cavity plastic LDMOS transistor for RF Energy - ISM applications	DEV	Q4-16	3.4.5
BLP05H6700XR(G)	Plastic LDMOS transistor for broadcast/RF Energy - ISM applications	DEV	Q2-16	3.4.3
BLF888E(S)	Ceramic LDMOS transistor for broadcast applications	DEV	Q2-16	3.3.1
BLF898(S)	Ceramic LDMOS transistor for broadcast applications	DEV	Q3-16	3.3.1
BLF0910H6LS1000P	Ceramic LDMOS transistor for RF Energy - ISM applications	DEV	Q1-17	3.4.4
BLCU188XRS	Air-cavity plastic LDMOS transistor for broadcast/RF Energy - ISM applications	DEV	Q4-16	3.3.2
<b>NEW: RF Power LDMOS Transistors for Avionics Applications</b>				
BLA6H0912L(S)-1000	Ceramic LDMOS power transistor for avionics applications	RFS	Released	3.5.1
<b>NEW: RF Power LDMOS Transistors for S-band Applications</b>				
BLS9G2735L(S)-50	Ceramic LDMOS transistor for S-band radar applications	DEV	Q3-16	3.5.3
BLS8G2731L(S)-400P	Ceramic LDMOS transistor for S-band radar applications	RFS	Released	3.5.3
BLS9G2731L(S)-400(G)	Ceramic LDMOS transistor for S-band radar applications	DEV	Q4-16	3.5.3
BLS9G2934L(S)-400	Ceramic LDMOS transistor for S-band radar applications	DEV	Q2-16	3.5.3
BLS9G3135L(S)-400	Ceramic LDMOS transistor for S-band radar applications	DEV	Q2-16	3.5.3
<b>NEW: Gallium Nitride (GaN) RF Power Transistors for Broadband Applications</b>				
CLF1G0060(S)-10	Gen1 GaN HEMT for broadband applications	RFS	Released	3.6
CLF1G0060(S)-30	Gen1 GaN HEMT for broadband applications	RFS	Released	3.6
CLF1G0035S-50	Gen1 GaN HEMT for broadband applications	RFS	Released	3.6
CLF1G0035(S)-100P	Gen1 GaN HEMT for broadband applications	RFS	Released	3.6
CLF1G0035S-100	Gen1 GaN HEMT for broadband applications	RFS	Released	3.6
CLF1G0035(S)-200P	Gen1 GaN HEMT for broadband applications	RFS	Released	3.6

## 3.2 RF Power Transistors for Mobile Broadband

RF power transistor selection guide on [www.ampleon.com/products/mobile-broadband](http://www.ampleon.com/products/mobile-broadband)  
Easy-to-use parametric filters help you choose the right RF power transistor for your design

### Device Naming Conventions for Mobile Broadband

**B L F 9 G F L S -150 A B G V T**

*Italic = Optional*

*T = video decoupling capacitor inside*

*V = V-leads for external decoupling*

*W = Supply thru V-leads*

*Gullwing-shaped leads*

*Current sense lead*

*A = Asymmetric doherty (PAD)*

*P = Symmetric doherty or push-pull configuration*

*P-1dB power (exception PAD > 250 W and GaN = P-3dB)*

*Earless package*

Flange material

L = CPC, X = Cu

Frequency, example 22 = 2200 MHz, 1822 = 1800 to 2200 MHz

G: Standard LDMOS (standard supply 28 V)

D: Integrated Doherty (28 V)

AD: Advanced integrated Doherty (28 V)

H: High voltage LDMOS (50 V)

U: Ultra linear (12 V)

Technology generation

F: Ceramic package

C: Air-cavity plastic (ACP) package

M: MMIC

P: Overmolded plastic package (OMP)

L: High-frequency power transistor

B: Semiconductor die made of Si

C: Wide band-gap compound materials, e.g. GaN

### 3.2.1 0.4 - 1.0 GHz LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	2-c W-CDMA
BLP6H10-10*	SOT1352	400	1000	10	50	tbd	tbd	tbd
BLP7G22-10	SOT1179-2	700	2700	10	28	25	17.4	2-c W-CDMA
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2-c W-CDMA
BLM8G0710-15B*	SOT1462	700	1000	15	28	tbd	tbd	tbd
BLM8G0710S-15PB	SOT1211-2	700	1000	15	28	27	36	1-c W-CDMA
BLM8G0710S-15PB(G)	SOT1212-2	700	1000	15	28	27	36	1-c W-CDMA
BLM8G0710S-30PB	SOT1211-2	700	1000	30	28	24	35.7	1-c W-CDMA
BLM8G0710S-30PBG	SOT1212-2	700	1000	30	28	24	35.7	1-c W-CDMA
BLM8G0710S-45AB	SOT1211-2	700	1000	45	28	23.4	35.6	1-c W-CDMA, Peaking section
BLM8G0710S-45ABG	SOT1212-2	700	1000	45	28	23.4	35.6	1-c W-CDMA, Peaking section
BLP8G10S-45P	SOT1223-2	700	1000	45	28	19.8	20.8	2-c W-CDMA
BLP8G10S-45PG	SOT1224-2	700	1000	45	28	19.8	20.8	2-c W-CDMA
BLM8G0710S-60PB	SOT1211-2	700	1000	60	28	23.4	35.6	1-c W-CDMA
BLM8G0710S-60PBG	SOT1212-2	700	1000	60	28	23.4	35.6	1-c W-CDMA
BLP7G07S-140P	SOT1223-2	700	1000	140	28	29.6	20.9	2-c W-CDMA

\* Check status in section 3.1, as this type is not yet released for mass production

### 3.2.1 0.4 - 1.0 GHz LDMOS Transistors (continued)

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLF6H10LS-160	SOT467B	729	960	160	50	34	20	2-c W-CDMA
BLF8G10L(S)-160	SOT502A(B)	920	960	160	30	29	19.7	2-c W-CDMA
BLF8G10LS-160V	SOT1244B	925	960	160	30	30	19.9	2-c W-CDMA
BLP8G05S-200	SOT1138-2	400	500	200	28	77	21	CW
BLP8G05S-200G	SOT1204-2	400	500	200	28	77	21	CW
BLF7G10L(S)-250	SOT502A(B)	920	960	250	30	30.5	19.5	2-c W-CDMA
BLF8G09LS-270G(W)	SOT1244C(B)	716	960	270	28	33	20	2-c W-CDMA
BLF8G10LS-270	SOT502B	820	960	270	28	33	18.5	2-c W-CDMA
BLF8G10LS-270(G)V	SOT1244B(C)	790	960	270	28	31	19.5	2-c W-CDMA
BLP8G10S-270PW	SOT1221-2	700	900	270	28	46	17.3	1-c W-CDMA
BLF8G10LS-300P	SOT539B	700	1000	300	28	32	20.5	2-c W-CDMA
BLC9H10XS-400P*	SOT1273	700	1000	400	50	tbd	tbd	tbd
BLF8G09LS-400P(G)W	SOT1242B(C)	716	960	400	28	30	20.6	2-c W-CDMA
BLC8G09XS-400AWT*	SOT1258-3	800	1000	400 <sup>(1)</sup>	32	tbd	tbd	tbd
BLC9H10XS-400A*	SOT1273	800	1000	400 <sup>(1)</sup>	50	tbd	tbd	tbd

### 3.2.2 1.3 - 1.7 GHz LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	2-c W-CDMA
BLP7G22-10	SOT1179-2	700	2700	10	28	25	17.4	2-c W-CDMA
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2-c W-CDMA
BLP8G1522-20*	SOT1462	1500	2200	20	28	tbd	tbd	tbd
BLF7G15LS-200	SOT502B	1450	1550	200	28	29	19.5	2-c W-CDMA
BLF7G15LS-300P	SOT539B	1450	1550	300	28	31	18	2-c W-CDMA
BLC9G15LS-400AVT	SOT1258-3	1452	1511	400 <sup>(1)</sup>	32	51	16.2	1-c W-CDMA
BLC9G15XS-400AVT*	SOT1258	1452	1511	400 <sup>(1)</sup>	28	tbd	tbd	tbd

### 3.2.3 1.8 - 2.0 GHz LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLM8G1822-3B*	SOT1179	1800	2200	3	28	tbd	tbd	tbd
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	2-c W-CDMA
BLM8G1822-6B*	SOT1179	1800	2200	6	28	tbd	tbd	tbd
BLP7G22-10	SOT1179-2	700	2700	10	28	25	17.4	2-c W-CDMA
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2-c W-CDMA
BLM7G1822S-20PB	SOT1211-2	1805	2170	20	28	23	32.3	1-c W-CDMA
BLM7G1822S-20PBG	SOT1212-2	1805	2170	20	28	23	32.3	1-c W-CDMA
BLM8G1822-20B*	SOT1462	1800	2200	20	28	tbd	tbd	tbd
BLP8G1522-20*	SOT1462	1500	2200	20	28	tbd	tbd	tbd
BLM8D1822-25B*	SOT1462	1800	2200	25	28	tbd	tbd	tbd
BLM7G1822S-40AB	SOT1211-2	1805	2170	40	28	25.5	31.3	1-c W-CDMA, Peaking section
BLM7G1822S-40ABG	SOT1212-2	1805	2170	40	28	25.5	31.3	1-c W-CDMA, Peaking section
BLF6G22LS-40P	SOT1121B	2110	2170	40	28	30	19	2-c W-CDMA
BLM7G1822S-40PB	SOT1211-2	1805	2170	40	28	25	31.5	1-c W-CDMA
BLM7G1822S-40PBG	SOT1212-2	1805	2170	40	28	25	31	1-c W-CDMA
BLM8D1822S-50PB	SOT1211-2	1805	2170	50	28	37	26.5	1-c W-CDMA
BLM8D1822S-50PBG	SOT1212-2	1805	2170	50	28	37	26.5	1-c W-CDMA
BLM7G1822S-80AB	SOT1211-2	1805	2170	80	28	24	28.3	1-c W-CDMA, Peaking section
BLM7G1822S-80ABG	SOT1212-2	1805	2170	80	28	24	28.3	1-c W-CDMA, Peaking section
BLM7G1822S-80PB	SOT1211-2	1805	2170	80	28	24	28	1-c W-CDMA
BLM7G1822S-80PBG	SOT1212-2	1805	2170	80	28	24	28	1-c W-CDMA
BLP8G20S-80P	SOT1223-2	1800	2200	80	28	33	17.5	2-c W-CDMA
BLC9G20LS-120V	SOT1275-3	1805	1995	120	28	31	19.2	2-c W-CDMA
BLF8G20LS-140GV	SOT1244C	1805	1990	140	28	32	18.5	2-c W-CDMA
BLF8G20LS-140V	SOT1244B	1805	1990	140	28	32	18.5	2-c W-CDMA

(1) P3dB

\* Check status in section 3.1, as this type is not yet released for mass production



### 3.2.3 1.8 - 2.0 GHz LDMOS Transistors (continued)

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLC8G21LS-160AV	SOT1275-1	1805	2025	160	28	45	15	1-c W-CDMA
BLC9G20LS-160PV*	SOT1275-1	1805	2000	160	28	tbd	tbd	tbd
BLC9G20XS-160AV*	SOT1275-1	1800	2000	160	30	tbd	tbd	tbd
BLF8G20LS-160V	SOT1239B	1800	2000	160	28	34	20	2-c W-CDMA
BLF9G20LS-160V	SOT1120B	1800	2000	160	28	33.5	19.8	2-c W-CDMA
BLF8G19LS-170BV	SOT1120B	1800	1990	170	32	32	18	2-c W-CDMA
BLF8G20LS-200V	SOT1120B	1800	2000	200	28	33	17.5	2-c W-CDMA
BLF8G20LS-220	SOT502B	1800	2000	220	28	34	18.9	2-c W-CDMA
BLF8G20LS-230V	SOT1239B	1800	2000	230	28	31.7	18	2-c W-CDMA
BLC9G20LS-240PV	SOT1275-3	1805	1995	240	28	30	18	2-c W-CDMA
BLC10G19XS-250WT*	SOT1273	1800	1900	250	28	tbd	tbd	tbd
BLC8G20LS-310AV	SOT1258-3	1900	2000	310 <sup>(1)</sup>	28	42.5	16.9	1-c W-CDMA
BLC9G20LS-361AVT	SOT1258-3	1805	1990	360 <sup>(1)</sup>	28	47.5	15.7	1-c W-CDMA
BLF8G20LS-400P(G)V	SOT1242B(C)	1805	1995	400	28	28	19	2-c W-CDMA
BLC8G20LS-400AV	SOT1258-3	1800	2000	400 <sup>(1)</sup>	32	44	15.5	1-c W-CDMA
BLC9G20XS-400AVT*	SOT1258-7	1805	1880	400 <sup>(1)</sup>	32	tbd	tbd	tbd
BLC9G20LS-470AVT	SOT1258-3	1805	1990	470 <sup>(1)</sup>	28	47.5	15.7	1-c W-CDMA
BLC9G20XS-550AVT*	SOT1258-7	1805	1880	550 <sup>(1)</sup>	28	tbd	tbd	tbd

### 3.2.4 2.0 - 2.2 GHz LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLM8G1822-3B*	SOT1179	1800	2200	3	28	tbd	tbd	tbd
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	2-c W-CDMA
BLM8G1822-6B*	SOT1179	1800	2200	6	28	tbd	tbd	tbd
BLP7G22-10	SOT1179-2	700	2700	10	28	25	17.4	2-c W-CDMA
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2-c W-CDMA
BLM7G1822S-20PB	SOT1211-2	1805	2170	20	28	23	32.3	1-c W-CDMA
BLM7G1822S-20PBG	SOT1212-2	1805	2170	20	28	23	32.3	1-c W-CDMA
BLM8G1822-20B*	SOT1462	1800	2200	20	28	tbd	tbd	tbd
BLP8G1522-20*	SOT1462	1500	2200	20	28	tbd	tbd	tbd
BLM7G24S-30BG	SOT1212-2	2100	2400	30	28	11.3	31.5	2-c W-CDMA
BLM7G1822S-40AB	SOT1211-2	1805	2170	40	28	25.5	31.3	1-c W-CDMA, Peaking section
BLM7G1822S-40ABG	SOT1212-2	1805	2170	40	28	25.5	31.3	1-c W-CDMA, Peaking section
BLF6G22LS-40P	SOT1121B	2110	2170	40	28	30	19	2-c W-CDMA
BLM7G1822S-40PB	SOT1211-2	1805	2170	40	28	25	31.5	1-c W-CDMA
BLM7G1822S-40PBG	SOT1212-2	1805	2170	40	28	25	31	1-c W-CDMA
BLM7G22S-60PB	SOT1211-2	2100	2200	60	28	11.3	31.5	2-c W-CDMA
BLM7G22S-60PBG	SOT1212-2	2100	2200	60	28	11.3	31.5	2-c W-CDMA
BLM7G1822S-80AB	SOT1211-2	1805	2170	80	28	24	28.3	1-c W-CDMA, Peaking section
BLM7G1822S-80ABG	SOT1212-2	1805	2170	80	28	24	28.3	1-c W-CDMA, Peaking section
BLM7G1822S-80PB	SOT1211-2	1805	2170	80	28	24	28	1-c W-CDMA
BLM7G1822S-80PBG	SOT1212-2	1805	2170	80	28	24	28	1-c W-CDMA
BLC10G22XS-120VT*	SOT1271	2100	2200	120	28	tbd	tbd	tbd
BLF8G22LS-140	SOT502B	2000	2200	140	28	32.5	18.5	2-c W-CDMA
BLC8G21LS-160AV	SOT1275-1	1805	2025	160	28	45	15	1-c W-CDMA
BLF7G21LS-160	SOT1121B	1800	2050	160	28	34	18	2-c W-CDMA
BLF8G22LS-160BV	SOT1120B	2000	2200	160	32	32	18	2-c W-CDMA
BLP8G21S-160PV	SOT1221-2	1880	2025	160	28	31	17.5	2-c W-CDMA
BLF8G22LS-200(G)V	SOT1244B(C)	2110	2170	200	28	29	19	2-c W-CDMA
BLF8G22LS-205V	SOT1239B	2100	2200	205	28	32.5	18.3	1-c W-CDMA
BLF8G22LS-220	SOT502B	2110	2170	220	28	33	17	2-c W-CDMA
BLC10G22XS-240PWT*	SOT1275	2100	2200	240	28	tbd	tbd	tbd
BLF8G22LS-240	SOT502B	2110	2170	240	28	28.5	19	2-c W-CDMA
BLF8G22LS-270	SOT502B	2110	2170	270	28	30	17.7	2-c W-CDMA
BLF8G22LS-270(G)V	SOT1244B(C)	2110	2170	270	28	29	17.3	2-c W-CDMA
BLC9G22XS-400AVT*	SOT1258-7	2110	2200	400 <sup>(1)</sup>	32	tbd	tbd	tbd
BLC8G22LS-450AV	SOT1258-3	2110	2170	450 <sup>(1)</sup>	28	41	14	1-c W-CDMA

(1) P<sub>3dB</sub>

\* Check status in section 3.1, as this type is not yet released for mass production

### 3.2.5 2.3 - 2.4 GHz LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	2-c W-CDMA
BLP8G2327-10*	SOT1462	2300	2700	10	28	tbd	tbd	tbd
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2-c W-CDMA
BLP8G2327-20*	SOT1462	2300	2700	20	28	tbd	tbd	tbd
BLM8G2327S-25PB*	SOT1211	2300	2700	25	28	tbd	tbd	tbd
BLM8G2327S-25PBG*	SOT1212	2300	2700	25	28	tbd	tbd	tbd
BLM7G24S-30BG	SOT1212-2	2100	2400	30	28	11.3	31.5	2-c W-CDMA
BLF6G27LS-40P	SOT1121B(E)	2500	2700	40	28	37	17.5	1-c W-CDMA
BLM8G2327S-40PB*	SOT1211	2300	2700	40	28	tbd	tbd	tbd
BLC8G27LS-60AV	SOT1275-3	2300	2690	60	28	44	15	1-c W-CDMA
BLC8G27LS-60AVH	SOT1275-1	2300	2690	60	28	44	15	1-c W-CDMA
BLF8G24LS-100(G)V	SOT1244B(C)	2300	2400	100	28	32	19	2-c W-CDMA
BLF8G24LS-150(G)V	SOT1244B(C)	2300	2400	150	28	33	19	2-c W-CDMA
BLC9G24XS-170AV*	SOT1275	2300	2400	170	30	tbd	tbd	tbd
BLF8G24L-200PN	SOT539A(B)	2300	2400	200	28	32	17.2	1-c W-CDMA
BLC8G24LS-241AV	SOT1252-1	2300	2400	240	28	43	14.5	1-c W-CDMA

### 3.2.6 2.5 - 2.7 GHz LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	2-c W-CDMA
BLP8G2327-10*	SOT1462	2300	2700	10	28	tbd	tbd	tbd
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2-c W-CDMA
BLP8G2327-20*	SOT1462	2300	2700	20	28	tbd	tbd	tbd
BLM8G2327S-25PB(G)*	SOT1211	2300	2700	25	28	tbd	tbd	tbd
BLF6G27LS-40P(G)	SOT1121B(E)	2500	2700	40	28	37	17.5	1-c W-CDMA
BLM8G2327S-40PBG*	SOT1212	2300	2700	40	28	tbd	tbd	tbd
BLC8G27LS-60AV	SOT1275-3	2300	2690	60	28	44	15	1-c W-CDMA
BLC8G27LS-60AVH	SOT1275-1	2300	2690	60	28	44	15	1-c W-CDMA
BLC8G27LS-100AV	SOT1275-1	2496	2690	100	28	44	15.5	1-c W-CDMA
BLF8G27LS-100	SOT502B	2500	2700	100	28	28	17	2-c W-CDMA
BLF8G27LS-100GV	SOT1244C	2500	2700	100	28	28	17	2-c W-CDMA
BLF8G27LS-100P	SOT1121B	2500	2700	100	28	33	18	1-c W-CDMA
BLF8G27LS-100V	SOT1244B	2500	2700	100	28	28	17	2-c W-CDMA
BLC8G27LS-140AV	SOT1275-1	2496	2690	140	28	43	14.5	1-c W-CDMA
BLF8G27LS-140	SOT502B	2500	2700	140	32	32	17.4	2-c W-CDMA
BLF8G27LS-140V	SOT1120B	2600	2700	140	32	30	17.4	2-c W-CDMA
BLC9G27LS-151AV	SOT1275-3	2496	2690	150	28	46	15.6	1-c W-CDMA
BLF8G27LS-150(G)V	SOT1244B(C)	2500	2700	150	28	30	18	2-c W-CDMA
BLC8G27LS-160AV	SOT1275-1	2496	2690	160	28	41	14.3	1-c W-CDMA
BLC8G27LS-180AV	SOT1275-3	2496	2690	180	28	43.5	14	1-c W-CDMA
BLC8G27LS-210PV	SOT1251-3	2500	2700	200	28	30	17	2-c W-CDMA
BLC8G27LS-240AV	SOT1252-1	2500	2700	240	28	37	14	1-c W-CDMA

### 3.2.7 3.4 - 3.8 GHz LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLF9G38-10(G)*	SOT975B(C)	3400	3800	10	28	tbd	tbd	tbd
BLF6G38S-25	SOT608B	3400	3800	25	28	24	15	NCDMA/IS95
BLF8G38LS-75V	SOT1239B	3400	3800	75	30	26	15.5	1-c W-CDMA
BLF9G38LS-90P	SOT1121B	3400	3600	90	28	37	12.7	IS-95

\* Check status in section 3.1, as this type is not yet released for mass production

### 3.2.8 LDMOS Doherty Designs

Frequency band (MHz)	P <sub>PEAK</sub> (dBm)	P <sub>OUT,AVG</sub> (dBm)	V <sub>DS</sub> (V)	G <sub>p</sub> (dB)	η <sub>b</sub> (%)	Type	Main transistor	Peak transistor
<b>462 - 468 MHz</b>								
462-468	56	48.5	28	18.7	51.5	SYM	BLP8G05S-200	BLP8G05S-200
<b>617-652 MHz</b>								
617-652	54.8	47.5	24	17.8	53.7	SYM	1/2 BLP8G10S-270PW	1/2 BLP8G10S-270PW
<b>716 - 768 MHz</b>								
716 - 768	56	47.5	28	18.1	48.6	SYM	1/2 BLP8G10S-270PW	1/2 BLP8G10S-270PW
<b>758 - 803 MHz</b>								
773 - 803	52.2	44.5	28	17.8	46.5	SYM	1/2 BLP7G07S-140P	1/2 BLP7G07S-140P
758 - 803	55	48.4	28	16.5	49	SYM	BLP7G10S-140P	BLP7G10S-140P
758 - 803	55.6	48.4	28	17.8	47	SYM	BLF8G10LS-160	BLF8G10LS-160
<b>728 - 821 MHz</b>								
728 - 768	48.3	41	28	19	45	SYM	1/2 BLP8G10S-45P	1/2 BLP8G10S-45P
790 - 821	55.7	47.9	28	19.3	44	SYM	1/2 BLF8G10L-300P	1/2 BLF8G10L-300P
728 - 768	51.7	45	28	19	48	SYM	1/2 BLP7G10LS-140P	1/2 BLP7G10LS-140P
728 - 768	56	47.7	28	19.4	44	SYM	1/2 BLF8G10L-300P	1/2 BLF8G10L-300P
<b>717 - 960 MHz</b>								
790 - 960	55.4	47	50	18.5	40	SYM	BLF6H10L-160	BLF6H10L-160
717 - 960	57.4	50.1	50	17.4	47.1	SYM	1/2 BLC9H10XS-400P	1/2 BLC9H10XS-400P
<b>869 - 960 MHz</b>								
869 - 895	47.5	39.2	28	18	47	SYM	1/2 BLP8G10LS-45P	1/2 BLP8G10LS-45P
869 - 895	51.5	44	28	16.6	46	SYM	1/2 BLP7G10LS-140P	1/2 BLP7G10LS-140P
869 - 960	55.8	48	50	18.7	42	SYM	BLF6H10L-160	BLF6H10L-160
869 - 895	58.5	50.5	28	16.4	49	SYM	BLF8G10LS-270	BLF8G10LS-270
869 - 895	59.9	52	28	15.2	48	ASYM	BLF8G10LS-270	2x BLF8G10LS-270
925 - 960	46	35.5	30	20	38	SYM	BLP7G22S-10	BLP7G22S-10
925 - 960	48	40	28	17	47	SYM	1/2 BLP8G10S-45P	1/2 BLP8G10S-45P
925 - 960	47.4	39.4	28	18	47.3	SYM	1/2 BLP8G10S-45P	1/2 BLP8G10S-45P
920 - 960	55.2	48	30	16.9	46.3	SYM	BLF8G10LS-160V	BLF8G10LS-160V
920 - 960	56.4	49.3	28	15.1	47	SYM	1/2 BLF8G09LS-400PW	1/2 BLF8G09LS-400PW
925 - 960	56.3	48.4	28	16	48.2	ASYM	BLC8G09LS-400AW	BLC8G09LS-400AW
920 - 960	57.1	49	30	16.1	46.7	ASYM	BLF8G10LS-160	BLF7G10LS-250
920 - 960	57.1	49	28	15	48	ASYM	BLF8G10LS-160	2x BLF8G10LS-160
920 - 960	57.3	49.3	30	16	50	ASYM	BLF8G10LS-160	BLF7G10LS-250
<b>1476 - 1555 MHz</b>								
1452 - 1501	56.2	47.5	28	18	50.1	SYM	BLC9G15LS-400AVT	BLC9G15LS-400AVT
<b>1805 - 1880 MHz (DCS)</b>								
1805 - 1880	45 (dual)	37	28	26	37	SYM ID	BLM8D1822S-50PB(G)	
1805 - 1880	49	40	28/20	26	40	ASYM	BLM7G1822S-80ABG	BLM7G1822S-80ABG
1805 - 2025	52.9	44.5	28	15.8	50.6	ASYM	BLC8G21LS-160AV	BLC8G21LS-160AV
1805 - 1880	56.2	49.3	28	15	47.5	SYM	BLF8G20LS-200V	BLF8G20LS-200V
1805 - 1880	56.2	49	28	15	52.3	ASYM	BLF8G19LS-170BV	BLF8G20LS-220
1805 - 1880	57.3	50.5	30	17	50	ASYM	BLF8G20LS-220	BLF8G20LS-220
1805 - 1880	56	47.8	28	16.6	50.1	ASYM	BLC9G20LS-361AVT	BLC9G20LS-361AVT
1805 - 1880	56.5	49.2	28	16.3	49.8	ASYM	BLC9G20LS-470AVT	BLC9G20LS-470AVT
1805 - 1880	57.5	49.7	32	15.5	47	ASYM	BLC9G20XS-400AVT	BLC9G20XS-400AVT
1805 - 1880	56.6	49	28	15	50.3	ASYM 3W	BLC9G20LS-160V	BLC9G20LS-361AVT <sup>peak 1 and peak 2</sup>
1805 - 1880	57.6	50	28	15.5	48	ASYM	BLC9G20XS-550AVT	BLC9G20XS-550AVT
1805 - 1880	58.3	50	30	15.3	50	ASYM 3W	BLC9G20LS-160V	BLC9G20LS-470AVT <sup>peak 1 and peak 2</sup>
1805 - 1880	58.2	50.5	28	14.2	50	ASYM	BLF8G20LS-220	2x BLF8G20LS-220
<b>1930 - 1990 MHz (PCS)</b>								
1930 - 1990	57.3	50.5	30	17	50	ASYM	BLF8G20LS-220	BLF8G20LS-220
1930 - 1990	56.1	47.5	28	16.4	50	3WAY	BLC9G20LS-120V	BLC9G20LS-240PV <sup>peak 1 and peak 2</sup>
1930 - 1990	58.5	50.7	32	15.9	44	3WAY	BLF8G19LS-170BV	2x BLF8G19LS-170BV
<b>1805 - 2025 MHz (TD-SCDMA)</b>								
1805-2025	52.9	44.5	28	15.8	50.6	ASYM	BLC8G21LS-160AV	BLC8G21LS-160A
1805-2025	52.5	44.5	28	15	41	SYM	1/2BLP8G21S-160PV	1/2 BLP8G21S-160PV
<b>2110 - 2170 MHz (UMTS/LTE)</b>								
2110 - 2170	45 (dual)	37	28	26	37	SYM ID	BLM8D1822S-50PB(G)	
2111 - 2170	49	40	28/20	26	40	ASYM	BLM7G1822S-80ABG	BLM7G1822S-80AB
2110 - 2170	49	40.5	28	28	34	SYM	1/2 BLM7G22S-60PBG	1/2 BLM7G22S-60PBG
2113 - 2170	52.6	44.5	28	16.4	48.2	ASYM	BLC8G21LS-160AV	BLC8G21LS-160A
2110 - 2170	55.6	49	28	15	52	ASYM	BLF8G22LS-140	BLF8G22LS-220
2112 - 2170	56.2	48.4	28	14.2	46.5	ASYM	BLC9G22XS-400AVT	BLC9G22XS-400AV

### 3.2.8 LDMOS Doherty Designs (continued)

Frequency band (MHz)	P <sub>PEAK</sub> (dBm)	P <sub>OUT-AVG</sub> (dBm)	V <sub>DS</sub> (V)	G <sub>p</sub> (dB)	η <sub>b</sub> (%)	Type	Main transistor	Peak transistor
2110 - 2170	57.6	50	28	17.2	40	SYM	BLF8G22LS-200V	BLF8G22LS-200V
2110 - 2170	58	50	28	15	52	ASYM	BLC9G22LS-160V	BLC9G22XS400AVT
2110 - 2200	58.5	50.5	28	14	46	SYM 3W	BLC9G22LS-120VT	BLC9G22LS-240VT <sub>peak 1 and peak 2</sub>
<b>2300 - 2400 MHz (LTE)</b>								
2300 - 2400	47	39.5	22	15	41	SYM	1/2 BLF6G27LS-40PG	1/2 BLF6G27LS-40PG
2300 - 2400	47	38.5	26	14.2	48.5	ASYM	BLC8G27LS-60AV	BLC8G27LS-60AV
2300 - 2400	50.4	42	27	15.2	47.3	ASYM	BLC8G27LS-100AV	BLC8G27LS-100AV
2300 - 2400	56.8	49	28	15.5	42.1	SYM	BLF8G24LS-200P	BLF8G24LS-200P
2300 - 2400	52.6	44.5	28	15.5	47	ASYM	BLC9G27XS-170AV	BLC9G27XS-170AV
2300 - 2400	56	48	28	15	46	ASYM	BLC8G24LS-241AV	BLC8G24LS-241AV
<b>2500 - 2700 MHz (LTE)</b>								
2580 - 2620	48.2	40	28	14.4	41	SYM	1/2 BLF6G27LS-40P	1/2 BLF6G27LS-40P
2530 - 2630	53	45	28	14	43	ASYM	BLC8G27LS-160AV	BLC8G27LS-160AV
2620 - 2690	57.5	48	28	13	37	ASYM	BLF8G27LS-140G	2x BLF8G27LS-140G
2545 - 2660	54	46.5	28	15.2	45	SYM	BLF8G27LS-100V	BLF8G27LS-100V
2570 - 2620	51.1	43	28	14.2	44.5	SYM	1/2BLF8G27LS-100P	1/2 BLF8G27LS-100P
2620 - 2690	56.2	48	32	15.2	39.1	SYM	BLF8G27LS-140V	BLF8G27LS-140V
2496 - 2690	47.5	39.5	26	14.5	50	ASYM	BLC8G27LS-60AV	BLC8G27LS-60AV
2496 - 2690	50.5	41.5	28	15.5	42	ASYM	BLC8G27LS-100AV	BLC8G27LS-100AV
2496 - 2690	52.3	44.5	28	15	50	ASYM	BLC9G27LS-151AV	BLC9G27LS-151AV
2496 - 2690	57.6	49.7	30	14.5	37.5	ASYM	BLC8G27LS-210PV	BLF8G27LS-150V <sub>peak 1 and peak 2</sub>
<b>3300 - 3800 MHz (TDD-LTE)</b>								
3550 - 3700	43.5	36	30	15	37	SYM	BLF9G38LS-10G	BLF9G38LS-10G
3400 - 3600	51	43	28	11.5	32	SYM	BLF6G38-50	BLF6G38-50
3400 - 3600	50.3	42.5	28	13.3	38	SYM	1/2 BLF9G38LS-90P	1/2 BLF9G38LS-90P
3400 - 3700	52	44.5	28	12.5	35	SYM	BLF8G38LS-75V	BLF8G38LS-75V

### 3.2.9 GaN Doherty Designs

Frequency band (MHz)	P <sub>PEAK</sub> (dBm)	P <sub>OUT-AVG</sub> (dBm)	V <sub>DS</sub> (V)	G <sub>p</sub> (dB)	η <sub>b</sub> (%)	Type	Main transistor	Peak transistor
<b>1805 - 1880 MHz (DCS)</b>								
1805 - 2170 <sup>(1)</sup>	54.5	47	50	16.2	44	SYM	CLF2H1822LS-140 <sup>(1)</sup>	CLF2H1822LS-140 <sup>(1)</sup>
<b>2110 - 2170 MHz (UMTS/LTE)</b>								
1805 - 2170 <sup>(2)</sup>	54.7	47	50	14.6	46.4	SYM	CLF2H1822LS-140 <sup>(2)</sup>	CLF2H1822LS-140 <sup>(2)</sup>
<b>2500 - 2700 MHz (LTE)</b>								
2570 - 2620	55.8	47.8	50	11	56.5	ASYM	CLF2H27LS-140	2X CLF2H27LS-140
<b>3300 - 3800 MHz (TDD-LTE)</b>								
3400 - 3600	53.5	44.5	50	13	42	SYM	CLF2H38LS-140	CLF2H38LS-140
3400 - 3600	46.2	33	50	15.5	16	class-AB		CLF2H38LS-40

<sup>(1)</sup> @ 1805 MHz

<sup>(2)</sup> @ 2170 MHz



### 3.2.10 Single Package Asymmetric Doherty (PAD) LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(fdB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLM7G1822S-40AB	SOT1211-2	1805	2170	40	28	25.5	31.3	1-c W-CDMA, Peaking section
BLM7G1822S-40ABG	SOT1212-2	1805	2170	40	28	25.5	31.3	1-c W-CDMA, Peaking section
BLM8G0710S-45AB	SOT1211-2	700	1000	45	28	23.4	35.6	1-c W-CDMA, Peaking section
BLM8G0710S-45ABG	SOT1212-2	700	1000	45	28	23.4	35.6	1-c W-CDMA, Peaking section
BLC8G27LS-60AV	SOT1275-3	2300	2690	60	28	44	15	1-c W-CDMA
BLC8G27LS-60AVH	SOT1275-1	2300	2690	60	28	44	15	1-c W-CDMA
BLM7G1822S-80AB	SOT1211-2	1805	2170	80	28	24	28.3	1-c W-CDMA, Peaking section
BLM7G1822S-80ABG	SOT1212-2	1805	2170	80	28	24	28.3	1-c W-CDMA, Peaking section
BLC8G27LS-100AV	SOT1275-1	2496	2690	100	28	44	15.5	1-c W-CDMA
BLC8G27LS-140AV	SOT1275-1	2496	2690	140	28	43	14.5	1-c W-CDMA
BLC9G27LS-151AV	SOT1275-3	2496	2690	150	28	46	15.6	1-c W-CDMA
BLC8G21LS-160AV	SOT1275-1	1805	2025	160	28	45	15	1-c W-CDMA
BLC9G20XS-160AV*	SOT1275-1	1800	2000	160	30	tbd	tbd	tbd
BLC8G27LS-160AV	SOT1275-1	2496	2690	160	28	41	14.3	1-c W-CDMA
BLC9G24XS-170AV*	SOT1275	2300	2400	170	30	tbd	tbd	tbd
BLC8G27LS-180AV	SOT1275-3	2496	2690	180	28	43.5	14	1-c W-CDMA
BLC8G24LS-241AV	SOT1252-1	2300	2400	240	28	43	14.5	1-c W-CDMA
BLC8G27LS-245AV	SOT1251-2	2500	2700	240	28	37	14	1-c W-CDMA
BLC8G20LS-310AV	SOT1258-3	1900	2000	310 <sup>(1)</sup>	28	42.5	16.9	1-c W-CDMA
BLC9G20LS-361AVT	SOT1258-3	1805	1990	360 <sup>(1)</sup>	28	47.5	15.7	1-c W-CDMA
BLC8G09XS-400AWT*	SOT1258-3	800	1000	400 <sup>(1)</sup>	32	tbd	tbd	tbd
BLC9H10XS-400A*	SOT1273	800	1000	400 <sup>(1)</sup>	50	tbd	tbd	tbd
BLC8G20LS-400AV	SOT1258-3	1800	2000	400 <sup>(1)</sup>	32	44	15.5	1-c W-CDMA
BLC9G20XS-400AVT*	SOT1258-7	1805	1880	400 <sup>(1)</sup>	32	tbd	tbd	tbd
BLC9G15LS-400AVT	SOT1258-3	1452	1511	400 <sup>(1)</sup>	32	51	16.2	1-c W-CDMA
BLC9G22XS-400AVT*	SOT1258-7	2110	2200	400 <sup>(1)</sup>	32	tbd	tbd	tbd
BLC9G15XS-400AVT*	SOT1258	1452	1511	400 <sup>(1)</sup>	28	tbd	tbd	tbd
BLC8G22LS-450AV	SOT1258-3	2110	2170	450 <sup>(1)</sup>	28	41	14	1-c W-CDMA
BLC9G20LS-470AVT	SOT1258-3	1805	1990	470 <sup>(1)</sup>	28	47.5	15.7	1-c W-CDMA
BLC9G20XS-550AVT*	SOT1258-7	1805	1880	550 <sup>(1)</sup>	28	tbd	tbd	tbd

### 3.2.11 Overmolded Plastic (OMP) LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(fdB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	2-c W-CDMA
BLP7G22-10	SOT1179-2	700	2700	10	28	25	17.4	2-c W-CDMA
BLP8G2327-10*	SOT1462	2300	2700	10	28	tbd	tbd	tbd
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2-c W-CDMA
BLP6H10-10*	SOT1352	400	1000	10	50	tbd	tbd	tbd
BLP8G2327-20*	SOT1462	2300	2700	20	28	tbd	tbd	tbd
BLP8G1522-20*	SOT1462	1500	2200	20	28	tbd	tbd	tbd
BLP8G10S-45P	SOT1223-2	700	1000	45	28	19.8	20.8	2-c W-CDMA
BLP8G10S-45PG	SOT1224-2	700	1000	45	28	19.8	20.8	2-c W-CDMA
BLP8G20S-80P	SOT1223-2	1800	2200	80	28	33	17.5	2-c W-CDMA
BLP7G07S-140P	SOT1223-2	700	1000	140	28	29.6	20.9	2-c W-CDMA
BLP8G21S-160PV	SOT1221-2	1880	2025	160	28	31	17.5	2-c W-CDMA
BLP8G05S-200	SOT1138-2	400	500	200	28	77	21	CW
BLP8G05S-200G	SOT1204-2	400	500	200	28	77	21	CW
BLP8G10S-270PW	SOT1221-2	700	900	270	28	46	17.3	1-c W-CDMA

(1) P3dB

\* Check status in section 3.1, as this type is not yet released for mass production

### 3.2.12 MMIC LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(fdB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLM8G1822-3B*	SOT1179	1800	2200	3	28	tbd	tbd	tbd
BLM8G1822-6B*	SOT1179	1800	2200	6	28	tbd	tbd	tbd
BLM8G0710-15B*	SOT1462	700	1000	15	28	tbd	tbd	tbd
BLM8G0710S-15PB	SOT1211-2	700	1000	15	28	27	36	1-c W-CDMA
BLM8G0710S-15PB(G)	SOT1212-2	700	1000	15	28	27	36	1-c W-CDMA
BLM7G1822S-20PB	SOT1211-2	1805	2170	20	28	23	32.3	1-c W-CDMA
BLM7G1822S-20PBG	SOT1212-2	1805	2170	20	28	23	32.3	1-c W-CDMA
BLM8G1822-20B*	SOT1462	1800	2200	20	28	tbd	tbd	tbd
BLM8G2327S-25PB(G)*	SOT1211	2300	2700	25	28	tbd	tbd	tbd
BLM8G2327S-25PB*	SOT1211	2300	2700	25	28	tbd	tbd	tbd
BLM8G2327S-25PBG*	SOT1212	2300	2700	25	28	tbd	tbd	tbd
BLM7G24S-30BG	SOT1212-2	2100	2400	30	28	11.3	31.5	2-c W-CDMA
BLM8G0710S-30PB	SOT1211-2	700	1000	30	28	24	35.7	1-c W-CDMA
BLM8G0710S-30PBG	SOT1212-2	700	1000	30	28	24	35.7	1-c W-CDMA
BLM7G1822S-40AB	SOT1211-2	1805	2170	40	28	25.5	31.3	1-c W-CDMA, Peaking section
BLM7G1822S-40ABG	SOT1212-2	1805	2170	40	28	25.5	31.3	1-c W-CDMA, Peaking section
BLM8G2327S-40PBG*	SOT1212	2300	2700	40	28	tbd	tbd	tbd
BLM7G1822S-40PB	SOT1211-2	1805	2170	40	28	25	31.5	1-c W-CDMA
BLM7G1822S-40PBG	SOT1212-2	1805	2170	40	28	25	31	1-c W-CDMA
BLM8G2327S-40PB*	SOT1211	2300	2700	40	28	tbd	tbd	tbd
BLM8G0710S-45AB	SOT1211-2	700	1000	45	28	23.4	35.6	1-c W-CDMA, Peaking section
BLM8G0710S-45ABG	SOT1212-2	700	1000	45	28	23.4	35.6	1-c W-CDMA, Peaking section
BLM8D1822S-50PB	SOT1211-2	1805	2170	50	28	37	26.5	1-c W-CDMA
BLM8D1822S-50PBG	SOT1212-2	1805	2170	50	28	37	26.5	1-c W-CDMA
BLM7G22S-60PB	SOT1211-2	2100	2200	60	28	11.3	31.5	2-c W-CDMA
BLM7G22S-60PBG	SOT1212-2	2100	2200	60	28	11.3	31.5	2-c W-CDMA
BLM8G0710S-60PB	SOT1211-2	700	1000	60	28	23.4	35.6	1-c W-CDMA
BLM8G0710S-60PBG	SOT1212-2	700	1000	60	28	23.4	35.6	1-c W-CDMA
BLM7G1822S-80PB	SOT1211-2	1805	2170	80	28	24	28	1-c W-CDMA
BLM7G1822S-80AB	SOT1211-2	1805	2170	80	28	24	28.3	1-c W-CDMA, Peaking section
BLM7G1822S-80ABG	SOT1212-2	1805	2170	80	28	24	28.3	1-c W-CDMA, Peaking section
BLM7G1822S-80PBG	SOT1212-2	1805	2170	80	28	24	28	1-c W-CDMA

### 3.2.13 Small Cell LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(fdB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLM8G1822-3B*	SOT1179	1800	2200	3	28	tbd	tbd	tbd
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	2-c W-CDMA
BLM8G1822-6B*	SOT1179	1800	2200	6	28	tbd	tbd	tbd
BLP8G2327-10*	SOT1462	2300	2700	10	28	tbd	tbd	tbd
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2-c W-CDMA
BLF9G38-10*	SOT975B	3400	3800	10	28	tbd	tbd	tbd
BLF9G38-10G*	SOT975C	3400	3800	10	28	tbd	tbd	tbd
BLP8G2327-20*	SOT1462	2300	2700	20	28	tbd	tbd	tbd
BLP8G1522-20*	SOT1462	1500	2200	20	28	tbd	tbd	tbd
BLM8G2327S-25PB(G)*	SOT1211	2300	2700	25	28	tbd	tbd	tbd
BLF6G38S-25	SOT608B	3400	3800	25	28	24	15	NCDMA/IS95
BLF6G27LS-40P(G)	SOT1121B(E)	2500	2700	40	28	37	17.5	1-c W-CDMA
BLF6G22LS-40P	SOT1121B	2110	2170	40	28	30	19	2-c W-CDMA
BLM7G1822S-40AB	SOT1211-2	1805	2170	40	28	25.5	31.3	1-c W-CDMA, Peaking section
BLM7G1822S-40ABG	SOT1212-2	1805	2170	40	28	25.5	31.3	1-c W-CDMA, Peaking section
BLM8G0710S-45AB	SOT1211-2	700	1000	45	28	23.4	35.6	1-c W-CDMA, Peaking section
BLM8G0710S-45ABG	SOT1212-2	700	1000	45	28	23.4	35.6	1-c W-CDMA, Peaking section
BLP8G10S-45P	SOT1223-2	700	1000	45	28	19.8	20.8	2-c W-CDMA
BLP8G10S-45PG	SOT1224-2	700	1000	45	28	19.8	20.8	2-c W-CDMA
BLM8D1822S-50PB	SOT1211-2	1805	2170	50	28	37	26.5	1-c W-CDMA
BLM8D1822S-50PBG	SOT1212-2	1805	2170	50	28	37	26.5	1-c W-CDMA
BLC8G27LS-60AV	SOT1275-3	2300	2690	60	28	44	15	1-c W-CDMA

\* Check status in section 3.1, as this type is not yet released for mass production

### 3.2.13 Small Cell LDMOS Transistors (continued)

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L1(dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLM7G22S-60PB	SOT1211-2	2100	2200	60	28	11.3	31.5	2-c W-CDMA
BLM7G22S-60PBG	SOT1212-2	2100	2200	60	28	11.3	31.5	2-c W-CDMA
BLP8G20S-80P	SOT1223-2	1800	2200	80	28	33	17.5	2-c W-CDMA
BLM7G1822S-80AB	SOT1211-2	1805	2170	80	28	24	28.3	1-c W-CDMA, Peaking section
BLM7G1822S-80ABG	SOT1212-2	1805	2170	80	28	24	28.3	1-c W-CDMA, Peaking section
BLF9G38LS-90P	SOT1121B	3400	3600	90	28	37	12.7	IS-95

### 3.2.14 High Voltage LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L1(dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLP6H10-10*	SOT1352	400	1000	10	50	tbd	tbd	tbd
BLF6H10LS-160	SOT467B	729	960	160	50	34	20	2-c W-CDMA
BLC9H10XS-400P*	SOT1273	700	1000	400	50	tbd	tbd	tbd
BLC9H10XS-400A*	SOT1273	800	1000	400 <sup>(1)</sup>	50	tbd	tbd	tbd

### 3.2.15 GaN Transistors for Base Station Applications

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L1(dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
CLF2H38LS-40	SOT1135B	3400	3800	40 <sup>(1)</sup>	50	tbd	tbd	tbd
CLF2H38LS-140*	SOT1135B	3400	3800	140 <sup>(1)</sup>	50	tbd	tbd	tbd
CLF2H1822LS-140*	SOT1135B	1800	2200	140 <sup>(1)</sup>	50	tbd	tbd	tbd
CLF2H27LS-145*	SOT1135B	2500	2700	145 <sup>(1)</sup>	50	tbd	tbd	tbd
CLF2H1822LS-220*	SOT1135B	1800	2200	220 <sup>(1)</sup>	50	tbd	tbd	tbd

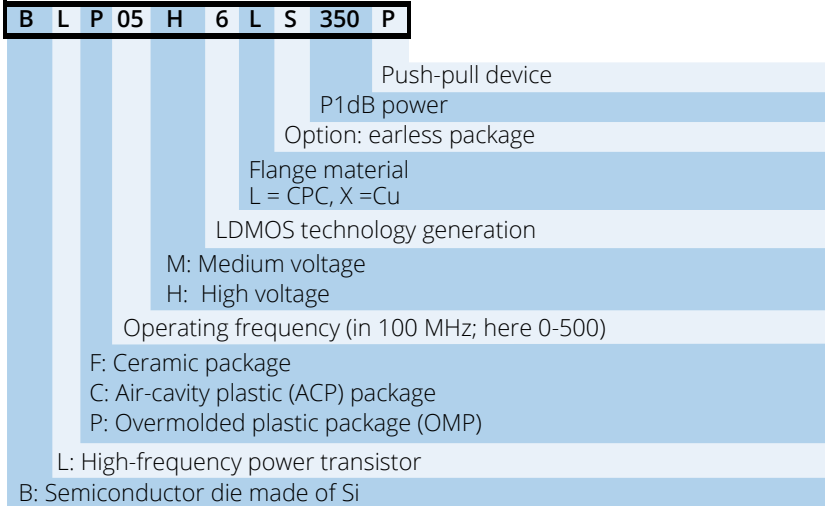
<sup>(1)</sup> P<sub>3dB</sub>

\* Check status in section 3.1, as this type is not yet released for mass production

### 3.3 RF Power Transistors for Broadcast

RF power transistor selection guide on [www.ampleon.com/products/broadcast](http://www.ampleon.com/products/broadcast)  
 Easy-to-use parametric filters help you choose the right RF power transistor for your design

#### Device Naming Conventions for Broadcast



#### 3.3.1 UHF Broadcast LDMOS Transistors (470 - 860 MHz)

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	P <sub>L(AV)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLP10H603	SOT1352-1	10	1400	2.5	-	50	62	22.8	CW
BLP10H605	SOT1352-1	10	1400	5	-	50	59.6	22.4	CW
BLP10H610	SOT1352-1	10	1400	10	-	50	60	22	CW
BLF571	SOT467C	10	500	20	-	50	70	27.5	CW
BLP10H630P*	SOT1223-2	10	1000	30	-	50	68	18	Pulsed RF
BLF642	SOT467C	1	1400	35	-	32	63	19	CW
BLP10H660P*	SOT1223-2	10	1000	60	-	50	68	18	Pulsed RF
BLP10H690P*	SOT1223-2	10	1000	90	-	50	68	18	Pulsed RF
BLF871(S)	SOT467C(B)	1	1000	100	-	40	60	21	CW
BLP10H6120P*	SOT1223-2	10	1000	120	-	50	68	18	Pulsed RF
BLF881(S)	SOT467C(B)	1	1000	140	-	50	49	21	CW
BLP15M7160P	SOT1223-2	10	1500	160	-	28	59.7	19.4	CW
BLF882(S)	SOT502A(B)	10	860	200	-	50	63	20.6	CW
BLF884P(S)	SOT1121A(B)	470	860	350	-	50	46	21	CW
BLF879P(S)	SOT539A(B)	470	860	500	-	42	47	21	CW
BLF888A(S)	SOT539A(B)	470	860	600	110	50	31	20	DVB-T (8k OFDM)
BLF888B(S)	SOT539A(B)	470	860	650	120	50	33	21	DVB-T (8k OFDM)
BLF888D(S)	SOT539A(B)	470	806	-	115	50	40	17	DVB-T (8k OFDM)
BLF888E(S)*	SOT539A(B)	470	790	-	150	50	52	17	DVB-T (8k OFDM)
BLF898(S)*	SOT539A(B)	470	806	900	180	50	32	16	DVB-T

\* Check status in section 3.1, as this type is not yet released for mass production



### 3.3.2 HF / VHF Broadcast LDMOS Transistors (0 - 500 MHz)

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(fdB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLP10H603	SOT1352-1	10	1400	2.5	50	62	22.8	CW
BLP10H605	SOT1352-1	10	1400	5	50	59.6	22.4	CW
BLP25M705	SOT1179-2	10	2500	5	28	50	16.4	CW
BLP35M805	SOT1371-1	10	3500	5	28	17	18	CW pulsed, class-AB
BLF640	SOT538A	10	2200	10	28	31	19.3	1-c W-CDMA
BLP10H610	SOT1352-1	10	1400	10	50	60	22	CW
BLP25M710	SOT1179-2	10	2500	10	28	64.5	16.2	Pulsed RF
BLP27M810	SOT1371-1	10	2700	10	28	19	17	Pulsed CW
BLF571	SOT467C	10	500	20	50	70	27.5	CW
BLF642	SOT467C	1	1400	35	32	63	19	CW
BLP05H635XR	SOT1223-2	10	600	35	50	75	27	Pulsed RF
BLF644P	SOT1228A	10	1300	70	32	66	23.5	CW pulsed, class-AB
BLP05H675XR	SOT1223-2	10	600	75	50	75	27	Pulsed RF
BLF645	SOT540A	1	1400	100	32	56	18	CW
BLF871(S)	SOT467C(B)	1	1000	100	40	60	21	CW
BLP05H6110XR	SOT1223-2	10	600	110	50	75	27	Pulsed RF
BLF881(S)	SOT467C(B)	1	1000	140	50	49	21	CW
BLP05H6150XR	SOT1223-2	10	600	150	50	75	27	Pulsed RF
BLF647P(S)	SOT1121A(B)	10	1500	200	32	70	18	Pulsed RF
BLF882(S)	SOT502A(B)	10	860	200	50	63	20.6	CW
BLF182XR(S)	SOT1121A(B)	10	600	250	50	75	28	Pulsed RF
BLP05H6250XR	SOT1223-2	10	600	250	50	75	27	Pulsed RF
BLF573(S)	SOT502A(B)	10	500	300	50	70	27.2	CW
BLF183XR(S)	SOT1121A(B)	10	600	350	50	75	28	Pulsed RF
BLP05H6350XR	SOT1223-2	10	600	350	50	75	27.5	Pulsed RF
BLF174XR(S)	SOT1214A(B)	10	128	600	50	73	29	Pulsed RF
BLF574	SOT539A	10	500	600	50	70	26.5	CW
BLF574XR(S)	SOT1214A(B)	10	500	600	50	74.7	24	Pulsed RF
BLF184XR(G)	SOT1214(C)	10	600	700	50	73.5	23.9	Pulsed RF
BLF184XRS	SOT1214B	10	600	700	50	73.5	23.9	Pulsed RF
BLP05H6700XR*	SOT1138-2	10	600	700	50	73	23	Pulsed RF
BLP05H6700XRG*	SOT1204-2	10	600	700	50	73	23	Pulsed RF
BLF178P	SOT539A	10	128	1200	50	75	28.5	Pulsed RF
BLF578	SOT539A	10	500	1200	50	75	26	CW
BLF178XR(S)	SOT539A(B)	10	128	1400	50	72	28	Pulsed RF
BLF188XR(S)	SOT539A(B)	10	600	1400	50	73	24.4	Pulsed RF
BLF188XRG	SOT1248C	10	600	1400	50	73	24.4	Pulsed RF
BLF578XR(S)	SOT539A(B)	10	500	1400	50	69	23.5	Pulsed RF
BLCU188XRS*	SOT1250-2	10	600	1400	50	73	24.4	Pulsed RF

### 3.3.3 HF / VHF Broadcast LDMOS Transistors (0 - 1600 MHz)

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(fdB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLP10H603	SOT1352-1	10	1400	2.5	50	62	22.8	CW
BLP10H605	SOT1352-1	10	1400	5	50	59.6	22.4	CW
BLP25M705	SOT1179-2	10	2500	5	28	50	16.4	CW
BLP35M805	SOT1371-1	10	3500	5	28	17	18	CW pulsed, class-AB
BLF640	SOT538A	10	2200	10	28	31	19.3	1-c W-CDMA
BLP10H610	SOT1352-1	10	1400	10	50	60	22	CW
BLP25M710	SOT1179-2	10	2500	10	28	64.5	16.2	Pulsed RF
BLP27M810	SOT1371-1	10	2700	10	28	19	17	Pulsed CW
BLF571	SOT467C	10	500	20	50	70	27.5	CW
BLP10H630P*	SOT1223-2	10	1000	30	50	68	18	Pulsed RF
BLF642	SOT467C	1	1400	35	32	63	19	CW
BLP10H660P*	SOT1223-2	10	1000	60	50	68	18	Pulsed RF
BLF644P	SOT1228A	10	1300	70	32	66	23.5	CW pulsed, class-AB
BLP10H690P*	SOT1223-2	10	1000	90	50	68	18	Pulsed RF
BLF645	SOT540A	1	1400	100	32	56	18	CW
BLF871(S)	SOT467C(B)	1	1000	100	40	60	21	CW
BLP10H6120P*	SOT1223-2	10	1000	120	50	68	18	Pulsed RF

\* Check status in section 3.1, as this type is not yet released for mass production

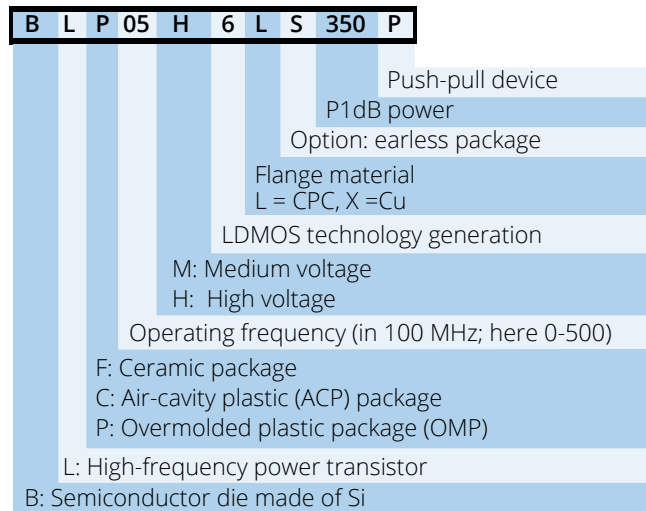
### 3.3.3 HF / VHF Broadcast LDMOS Transistors (0 - 1600 MHz) (continued)

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLF10M6(LS)135	SOT502A(B)	700	1000	135	28	28	21	2-c W-CDMA
BLF881(S)	SOT467C(B)	1	1000	140	50	49	21	CW
BLF10M6(LS)160	SOT502A(B)	700	1000	160	32	27	22.5	2-c W-CDMA
BLP15M7160P	SOT1223-2	10	1500	160	28	59.7	19.4	CW
BLF10M6(LS)200	SOT502A(B)	700	1000	200	28	28.5	20	2-c W-CDMA
BLF2324M8LS200P	SOT539B	2300	2400	200	28	32	17.2	1-c W-CDMA
BLF647P(S)	SOT1121A(B)	10	1500	200	32	70	18	Pulsed RF
BLF6G13L(S)-250P	SOT1121A(B)	1300	1300	250	50	56	17	CW
BLF6G13LS-250PG	SOT1121E	1300	1300	250	50	56	17	CW
BLF6G15L(S)-500H	SOT539A(B)	1400	1500	500	50	19	16	DVB-T (8k OFDM)
BLF10H6600P(S)	SOT539A(B)	400	1000	600	50	46	20.8	2-Tone, class-AB

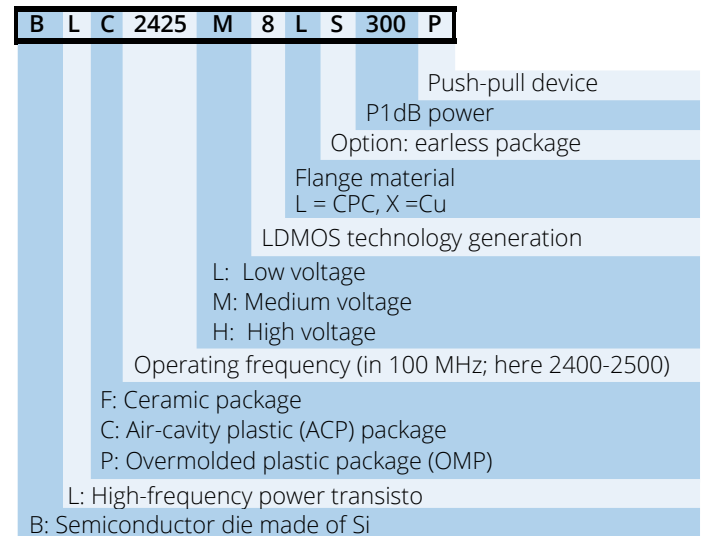
### 3.4 RF Power Transistors for Solid State RF Energy and ISM

RF power transistor selection guide on [www.ampleon.com/products/ism](http://www.ampleon.com/products/ism) and [www.ampleon.com/products/rf-energy](http://www.ampleon.com/products/rf-energy)  
Easy-to-use parametric filters help you choose the right RF power transistor for your design

#### Device Naming Conventions for < 2.5 GHz Band



#### Device Naming Conventions for 2.5 GHz Band



#### 3.4.1 ISM LDMOS Transistors (0 - 500 MHz / XR)

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLP10H603	SOT1352-1	10	1400	2.5	50	62	22.8	CW
BLP10H605	SOT1352-1	10	1400	5	50	59.6	22.4	CW
BLP10H610	SOT1352-1	10	1400	10	50	60	22	CW
BLF571	SOT467C	10	500	20	50	70	27.5	CW
BLP05H635XR	SOT1223-2	10	600	35	50	75	27	Pulsed RF
BLP05H675XR	SOT1223-2	10	600	75	50	75	27	Pulsed RF
BLP05H6110XR	SOT1223-2	10	600	110	50	75	27	Pulsed RF
BLP05H6150XR	SOT1223-2	10	600	150	50	75	27	Pulsed RF

\* Check status in section 3.1, as this type is not yet released for mass production

### 3.4.1 ISM LDMOS Transistors (0 - 500 MHz / XR) (continued)

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLF182XR(S)	SOT1121A(B)	10	600	250	50	75	28	Pulsed RF
BLP05H6250XR	SOT1223-2	10	600	250	50	75	27	Pulsed RF
BLF573(S)	SOT502A(B)	10	500	300	50	70	27.2	CW
BLF183XR(S)	SOT1121A(B)	10	600	350	50	75	28	Pulsed RF
BLP05H6350XR	SOT1223-2	10	600	350	50	75	27.5	Pulsed RF
BLF174XR(S)	SOT1214A(B)	10	128	600	50	73	29	Pulsed RF
BLF574	SOT539A	10	500	600	50	70	26.5	CW
BLF574XR(S)	SOT1214A(B)	10	500	600	50	74.7	24	Pulsed RF
BLF184XR(G)	SOT1214A(C)	10	600	700	50	73.5	23.9	Pulsed RF
BLF184XRS	SOT1214B	10	600	700	50	73.5	23.9	Pulsed RF
BLP05H6700XR*	SOT1138-2	10	600	700	50	73	23	Pulsed RF
BLP05H6700XRG*	SOT1204-2	10	600	700	50	73	23	Pulsed RF
BLF178P	SOT539A	10	128	1200	50	75	28.5	Pulsed RF
BLF578	SOT539A	10	500	1200	50	75	26	CW
BLCU188XRS*	SOT1250-2	10	600	1400	50	73	24.4	Pulsed RF
BLF178XR(S)	SOT539A(B)	10	128	1400	50	72	28	Pulsed RF
BLF188XR(S)	SOT539A(B)	10	600	1400	50	73	24.4	Pulsed RF
BLF188XRG	SOT1248C	10	600	1400	50	73	24.4	Pulsed RF
BLF578XR(S)	SOT539A(B)	10	500	1400	50	69	23.5	Pulsed RF

### 3.4.2 ISM LDMOS Transistors (0 - 1600 MHz)

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLP10H603	SOT1352-1	10	1400	2.5	50	62	22.8	CW
BLP10H605	SOT1352-1	10	1400	5	50	59.6	22.4	CW
BLP25M705	SOT1179-2	10	2500	5	28	50	16.4	CW
BLP35M805	SOT1371-1	10	3500	5	28	17	18	CW pulsed, class-AB
BLF640	SOT538A	10	2200	10	28	31	19.3	1-c W-CDMA
BLP10H610	SOT1352-1	10	1400	10	50	60	22	CW
BLP25M710	SOT1179-2	10	2500	10	28	64.5	16.2	Pulsed RF
BLP27M810	SOT1371-1	10	2700	10	28	19	17	Pulsed CW
BLP10H630P*	SOT1223-2	10	1000	30	50	68	18	Pulsed RF
BLF642	SOT467C	1	1400	35	32	63	19	CW
BLP10H660P*	SOT1223-2	10	1000	60	50	68	18	Pulsed RF
BLF644P	SOT1228A	10	1300	70	32	66	23.5	CW pulsed, class-AB
BLP10H690P*	SOT1223-2	10	1000	90	50	68	18	Pulsed RF
BLF645	SOT540A	1	1400	100	32	56	18	CW
BLP10H6120P*	SOT1223-2	10	1000	120	50	68	18	Pulsed RF
BLP15M7160P	SOT1223-2	10	1500	160	28	59.7	19.4	CW
BLF1721M8LS200	SOT502B	1700	2100	200	28	28.5	19	2-c W-CDMA
BLF2324M8LS200P	SOT539B	2300	2400	200	28	32	17.2	1-c W-CDMA
BLF647P(S)	SOT1121A(B)	10	1500	200	32	70	18	Pulsed RF
BLF6G13L(S)-250P	SOT1121A(B)	1300	1300	250	50	56	17	CW
BLF6G15L(S)-500H	SOT539A(B)	1400	1500	500	50	19	16	DVB-T (8k OFDM)
BLF10H6600P(S)	SOT539A(B)	400	1000	600	50	46	20.8	2-Tone, class-AB

### 3.4.3 RF Energy LDMOS Transistors (0 - 500 MHz)

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLF10M6(LS)135	SOT502A(B)	700	1000	135	28	28	21	2-c W-CDMA
BLF10M6(LS)160	SOT502A(B)	700	1000	160	32	27	22.5	2-c W-CDMA
BLF10M6(LS)200	SOT502A(B)	700	1000	200	28	28.5	20	2-c W-CDMA
BLP05M7200	SOT1138-2	425	450	200	28	77	21	CW
BLC05M6XS200*	SOT1270-1	425	450	200	28	82	21	Pulsed RF
BLP05H6700XR(G)*	SOT1223-2	10	600	700	50	23	73	Pulsed RF

\* Check status in section 3.1, as this type is not yet released for mass production

### 3.4.4 RF Energy LDMOS Transistors (915 MHz)

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLP10H603	SOT1352-1	10	1400	2.5	50	62	22.8	CW
BLP10H605	SOT1352-1	10	1400	5	50	59.6	22.4	CW
BLF640	SOT538A	10	2200	10	28	31	19.3	1-c W-CDMA
BLP10H610	SOT1352-1	10	1400	10	50	60	22	CW
BLP10H630P*	SOT1223-2	10	1000	30	50	68	18	Pulsed RF
BLF642	SOT467C	1	1400	35	32	63	19	CW
BLP10H660P*	SOT1223-2	10	1000	60	50	68	18	Pulsed RF
BLF644P	SOT1228A	10	1300	70	32	66	23.5	CW pulsed, class-AB
BLP10H690P*	SOT1223-2	10	1000	90	50	68	18	Pulsed RF
BLF645	SOT540A	1	1400	100	32	56	18	CW
BLP10H6120P*	SOT1223-2	10	1000	120	50	68	18	Pulsed RF
BLF881(S)	SOT467C(B)	1	1000	140	50	49	21	CW
BLF2425M6L180P	SOT539A	2400	2500	180	28	53.5	13.3	CW
BLF647P(S)	SOT1121A(B)	10	1500	200	32	70	18	Pulsed RF
BLF6G13L(S)-250P	SOT1121A(B)	1300	1300	250	50	56	17	CW
BLF6G15L(S)-500H	SOT539A(B)	1400	1500	500	50	19	16	DVB-T (8k OFDM)
BLF0910H6LS500*	SOT502B	900	930	500	50	60	18	CW
BLF10H6600P(S)	SOT539A(B)	400	1000	600	50	46	20.8	2-Tone, class-AB
BLF0910H6LS1000P*	SOT539B	900	1000	1000	50	tbd	tbd	CW

### 3.4.5 RF Energy LDMOS Transistors (2.45 GHz)

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLP25M705	SOT1179-2	10	2500	5	28	50	16.4	CW
BLP35M805	SOT1371-1	10	3500	5	28	17	18	CW pulsed, class-AB
BLP25M710	SOT1179-2	10	2500	10	28	64.5	16.2	Pulsed RF
BLP27M810	SOT1371-1	10	2700	10	28	19	17	Pulsed CW
BLF25M612(G)	SOT975B(C)	2400	2500	12	28	60	19	CW
BLF2425M9L(S)30	SOT11359A(B)	2400	2500	30	32	61	18.5	CW
BLM2425M7S60P	SOT1211-2	2400	2500	60	32	45	27.5	CW
BLF2425M7L(S)100	SOT502A(B)	2300	2400	100	28	27	18	1-c W-CDMA
BLF2425M7L(S)140	SOT502A(B)	2400	2500	140	28	52	18.5	CW
BLF2425M8L(S)140	SOT502A(B)	2400	2500	140	28	56	19	CW
BLF2425M9LS140*	SOT502B	2400	2500	140	28	60	20	CW
BLF2425M6L(S)180P	SOT539A(B)	2400	2500	180	28	53.5	13.3	CW
BLF2425M7L(S)250P	SOT539A(B)	2400	2500	250	28	51	15	CW
BLC2425M9XS250*	SOT1270	2400	2500	250	32	61	18	CW
BLC2425M8LS300P*	SOT1250-1	2400	2500	300	32	54.5	17.5	CW
BLC2425M9XS500P*	SOT1273	2400	2500	500	32	tbd	tbd	CW
BLC2425M9LS700PV*	SOT1258-1	2400	2500	1200 <sup>(1)</sup>	32	50	12.5	Pulsed RF

<sup>(1)</sup> P<sub>3dB</sub>

\* Check status in section 3.1, as this type is not yet released for mass production



## 3.5 RF Power Transistors for Aerospace & Defense

RF power transistor selection guide on [www.ampleon.com/products/aerospace-and-defense](http://www.ampleon.com/products/aerospace-and-defense)  
Easy-to-use parametric filters help you choose the right RF power transistor for your design

### Device Naming Conventions for Aerospace & Defense

B	L	S	6	G	2731	L	S	-120	G
									Option: gullwing shaped leads
									P: Push-pull device
									R: Enhanced ruggedness
									P1dB power
									S: Earless package
									P: Pallet
									Flange material
									L = CPC
									Frequency band (in 100 MHz; here: 2700-3100)
									G: Standard LDMOS ( $\leq 28$ V)
									H: High voltage LDMOS (50 V)
									LDMOS technology generation
									A: Avionics frequency band operation
									L: L-Band frequency operation
									S: S-Band frequency operation
									L: High frequency power transistor
									B: Semiconductor die made of Si

### 3.5.1 Avionics LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLL6H0514-25	SOT467C	500	1400	25	50	50	19	Pulsed RF
BLA6G1011(L)-200R(G)	SOT502A(D)	1030	1090	200	28	65	20	Pulsed RF
BLA6G1011LS-200RG	SOT502C	1030	1090	200	28	65	20	Pulsed RF
BLA8G1011L(S)-300	SOT502A(B)	1030	1090	300	32	56	16.5	Pulsed RF
BLA8G1011L(S)-300G	SOT502F(E)	1030	1090	300	32	56	16.5	Pulsed RF
BLA6H0912-500	SOT634A	960	1215	500	50	50	17	Pulsed RF
BLA6H1011-600	SOT539A	1030	1090	600	48	52	17	Pulsed RF
BLF988(S)	SOT539A(B)	500	1000	600	50	58	19.8	Pulsed, class-AB
BLU6H0410L(S)-600P	SOT539A(B)	400	900	600	50	58	20	Pulsed RF
BLA6H0912L(S)-1000	SOT539A(B)	960	1215	1000	50	51	15.5	Pulsed RF

### 3.5.2 L-Band LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLL6H0514-25	SOT467C	500	1400	25	50	50	19	Pulsed RF
BLL8H0514-25	SOT467C	500	1400	25	50	59	21	Pulsed RF
BLL6H0514L(S)-130	SOT1135A(B)	500	1400	130	50	50	17	Pulsed RF
BLL8H0514L(S)-130	SOT1135A(B)	500	1400	130	50	50	17	Pulsed RF
BLL6H1214P2S-250	SOM039	1200	1400	250	45	48	27	Pulsed RF
BLL6G1214L-250	SOT502A	1200	1400	250	36	45	15	Pulsed RF
BLL6H1214L(S)-250	SOT502A(B)	1200	1400	250	50	55	17	Pulsed RF
BLL8H1214L(S)-250	SOT502A(B)	1200	1400	250	50	55	17	Pulsed RF
BLL6H1214-500	SOT539A	1200	1400	500	50	50	17	Pulsed RF

\* Check status in section 3.1, as this type is not yet released for mass production

### 3.5.2 L-Band LDMOS Transistors (continued)

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLL6H1214LS-500	SOT539B	1200	1400	500	50	50	17	Pulsed RF
BLL8H1214L(S)-500	SOT539A(B)	1200	1400	500	50	50	17	Pulsed RF
BLL9G1214L(S)-600*	SOT502A(B)	1200	1400	600	32	60	19	Pulsed RF

### 3.5.3 S-Band LDMOS Transistors

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>p</sub> (dB)	Test signal
BLS6G2731-6G	SOT975C	2700	3100	6	32	33	15	Pulsed RF
BLS6G3135(S)-20	SOT608A(B)	3100	3500	20	32	45	15.5	Pulsed RF
BLS6G2735L(S)-30	SOT1135A(B)	2700	3500	30	32	50	13	Pulsed RF
BLS9G2735L(S)-50*	SOT1135A(B)	2700	3500	50	32	47	12	Pulsed RF
BLS7G2325L-105	SOT502A	2300	2500	105	30	55	16.5	Pulsed RF
BLS6G2731(S)-120	SOT502A(B)	2700	3100	120	32	48	13.5	Pulsed RF
BLS6G3135(S)-120	SOT502A(B)	3100	3500	120	32	43	11	Pulsed RF
BLS6G2731S-130	SOT922-1	2700	3100	130	32	50	12	Pulsed RF
BLS6G2933S-130	SOT922-1	2900	3300	130	32	47	12.5	Pulsed RF
BLS7G2933S-150	SOT922-1	2900	3300	150	32	47	13.5	Pulsed RF
BLS7G2730L(S)-200P	SOT539A(B)	2700	3000	200	32	48	12	Pulsed RF
BLS7G3135LS-200	SOT502B	3100	3500	200	32	43	12	Pulsed RF
BLS7G2729L(S)-350P	SOT539A(B)	2700	2900	350	32	50	13	Pulsed RF
BLS7G3135L(S)-350P	SOT539A(B)	3100	3500	350	32	43	12	Pulsed RF
BLS8G2731L(S)-400P	SOT539A(B)	2700	3100	400	32	47	13	Pulsed RF
BLS9G2731L(S)-400*	SOT502A(B)	2700	3100	400	32	46	13	Pulsed RF
BLS9G2731LS-400(G)*	SOT502E	2700	3100	400	32	46	13	Pulsed RF
BLS9G2934L(S)-400*	SOT502A(B)	2900	3400	400	32	44	11	Pulsed RF
BLS9G3135L(S)-400*	SOT502A(B)	3100	3500	400	32	44	11	Pulsed RF

\* Check status in section 3.1, as this type is not yet released for mass production

## 3.6 Gallium Nitride (GaN) RF Power Devices

RF power transistor selection guide on [www.ampleon.com/products/aerospace-and-defense/gan-devices](http://www.ampleon.com/products/aerospace-and-defense/gan-devices)  
Easy-to-use parametric filters help you choose the right RF power transistor for your design

### Device Naming Conventions for GaN Devices

**C L F 1G 0040 S 50 P**

P: Push-pull indicator, P = push-pull type; no P means single-ended transistor

2 to 1500: nominal P3dB in Watts; eg 50 = 50 W

S earless type, S = earless; no S means eared package

35 to 60: Upper frequency, 10x GHz value: 35 = 3.5 GHz; 60 = 6.0 GHz

00 to 40: Lower frequency, 10x GHz value: 00 = 0 GHz or DC; 40 = 4.0 GHz

1G: Technology generation: 1G = 1st generation

F: Package style: F = ceramic, P = overmolded plastic

L: High-frequency power transistor

C: Primary material identifier: C = wide band-gap compound materials, eg GaN

Type	Package	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	V <sub>DS</sub> (V)	η <sub>D</sub> (%)	G <sub>D</sub> (dB)	Test signal
CLF1G0060(S)-10	SOT1227A(B)	0	6000	10	50	48.2	17.8	Pulsed RF @ 500 MHz
CLF1G0060(S)-30	SOT1227A(B)	0	6000	30	50	61	16.6	Pulsed RF @ 500 MHz
CLF1G0035(S)-50	SOT467C(B)	0	3500	50	50	65	12	Pulsed RF @ 500 MHz
CLF1G0035(S)-100P	SOT1228A(B)	0	3500	100	50	54.4	14.4	1-Tone pulsed @ 2600 MHz
CLF1G0035(S)-100	SOT467C(B)	0	3500	100	50	67.4	15.5	Pulsed RF @ 500 MHz
CLF1G0035(S)-200P	SOT1228A(B)	0	3500	200	50	48	14	1-Tone pulsed @ 2000 MHz



SUPPORTING  
BEST-POSSIBLE  
APPLICATION RESULTS





# 4. Design Support

## Product Selection on Ampleon.com

Every product has its own webpage on the Ampleon website. Pages can be accessed in several ways: by product tree, by application area or simply typing 'ampleon + <product name>' (e.g. "Ampleon CLF1G0035S-200P") in the browser's search bar.

## Product Tree and Parametric Search

Our online product tree ([www.ampleon.com/products](http://www.ampleon.com/products)) categorizes the product by function. The parametric search tool allows you to refine the selection based on performance requirements.

## Application Area

To find out what Ampleon offers in each application area, use [www.ampleon.com/applications](http://www.ampleon.com/applications).

## Datasheets and Application Notes

The first chapter of this document includes application diagrams, recommended type numbers and product highlights. More in-depth application information is available in the second chapter, in product datasheets (on [www.ampleon.com](http://www.ampleon.com)) or in the Application Notes (see section 4.1).

## Simulation Tools

To help you evaluate our products for your specific application, Ampleon offers various simulation tools. For more information see section 4.2.

## Demonstration Boards and Samples

Demonstration board and evaluation samples are available for all products to build and evaluate prototypes. To obtain a demonstration board or order small quantities of products, please contact your local Ampleon representative or authorized distributor (visit [www.ampleon.com/distribution](http://www.ampleon.com/distribution))

## RF Power Lifetime Calculator

The RF Power Lifetime Calculator enables an interactive estimation of our LDMOS device lifetime. Median-Time-to-Failure (MTF), the time that 50% of the population has failed, is calculated as a function of junction temperature of the device, assuming electromigration as the wear-out failure mechanism. This allows RF design engineers to optimize thermal characteristics of their projects to generate an optimum system level solution. The online selection and calculation process will also eliminate the need to browse through large amounts of product information to quickly find a specific RF power transistor and its performance characteristics.

The RF Power Lifetime Calculator is available on [www.ampleon.com/support/rf-power-lifetime-calculator](http://www.ampleon.com/support/rf-power-lifetime-calculator) and is linked to product pages (where applicable).

## Product Longevity

Ampleon product longevity program ensures a stable supply of products for your embedded designs. Participating products are available for a minimum of 10 years as of product launch and are supported by standard end-of-life notification policies.

Updates are available in PDF format at: [www.ampleon.com/documents/other-type/Ampleon\\_Longevity\\_Overview.pdf](http://www.ampleon.com/documents/other-type/Ampleon_Longevity_Overview.pdf)

## Additional Support

For additional support please contact your local Ampleon sales representative or authorized distributor. You can also submit a question using the web form: [www.ampleon.com/contact](http://www.ampleon.com/contact).

## 4.1 Application Notes

Description	Final name	Description	Final name
Using the BLF574 in the 88 MHz to 108 MHz FM band	<b>AN10714</b>	174 to 230 MHz DVB-T power amplifier with BLF881	<b>AN10945</b>
Using the BLF578 in the 88 MHz to 108 MHz FM band	<b>AN10800</b>	1805 to 1880 MHz asymmetrical Doherty amplifier with BLF7G20LS-90P and BLF7G21LS-160P	<b>AN10951</b>
Doherty RF performance analysis using the BLF6G20-230PRN	<b>AN10847</b>	BLF645 10 MHz to 600 MHz 120 W amplifier	<b>AN10953</b>
174 MHz to 230 MHz DVB-T power amplifier with the BLF578	<b>AN10858</b>	BLF578 demo for 352 MHz 1kW CW power	<b>AN10967</b>
Broadband DVB-T UHF power amplifier with the BLF888	<b>AN10869</b>	Broadband DVB-T UHF power amplifier with the BLF888A	<b>AN11062</b>
Dependency of BLF578 gate bias voltage on temperature	<b>AN10882</b>	Bias module for 50 V GaN demonstration boards	<b>AN11130</b>
Doherty RF performance analysis using the BLF7G22LS-130	<b>AN10885</b>	Mounting and soldering of RF transistors in overmolded plastic packages	<b>AN11183</b>
Mounting and Soldering of RF transistors	<b>AN10896</b>	Life-time requirements of HVSON12 high-voltage (50 V) plastic drivers	<b>AN11520</b>
BLF7G20LS-200 Doherty 1.805 to 1.88 GHz RF power amplifier	<b>AN10921</b>	Mounting consideration for SOT409 (ceramic SO-8) devices	<b>AN98017</b>
1.5 GHz Doherty power amplifier for base station applications using BLF6G15L-250PBRN	<b>AN10923</b>		
2.5 to 2.7 GHz Doherty power amplifier using BLF7G27LS-150P	<b>AN10933</b>		
1930 to 1990 MHz Doherty amplifier using BLF7G20LS-200	<b>AN10944</b>		

## 4.2 Simulation Models

Updates of this overview are available in PDF format at:

[www.ampleon.com/dam/jcr:9c32341a-eb3e-4e4e-83f6-a257d8b73144/Ampleon\\_Model\\_Overview.pdf](http://www.ampleon.com/dam/jcr:9c32341a-eb3e-4e4e-83f6-a257d8b73144/Ampleon_Model_Overview.pdf)

Type	ADS model			Microwave Office® Model		S-parameter data				
	ADS-2012	ADS-2014	ADS-2015	Library manual	Simulation example					
BLA0912-250						36V_150mA				
BLA6G1011L-200RG	→	→	Available							
BLA6G1011LS-200RG	→	→	Available							
BLA6H0912-500	→	→	Available							
BLA6H0912L-1000	→	→	Available	Available						
BLA6H0912LS-1000	→	→	Available	Available						
BLA6H1011-600	→	→	Available							
BLC2425M8LS300P	→	→	Available							
BLC8G20LS-310AV				Available						
BLC8G20LS-400AV				Available						
BLC8G22LS-450AV	→	→	Available	Available						
BLC8G24LS-240AV	→	→	Available							
BLC8G24LS-241AV	→	→	Available							
BLC8G27LS-180AV	→	→	Available							
BLC8G27LS-240AV	→	→	Available							
BLC8G27LS-245AV	→	→	Available							
BLC8G27LS-60AV	→	→	Available							
BLC8G27LS-60AVH	→	→	Available							
BLC9G15LS-400AVT	→	→	Available							
BLC9G20LS-120V	→	→	Available							
BLC9G20LS-240PV	→	→	Available							
BLC9G20LS-361AVT	→	→	Available							
BLC9G20LS-470AVT	→	→	Available							
BLC9G22XS-400AVT	→	→	Available							
BLC9G27LS-151AV	→	→	Available							
BLD6G22L-50				Available						
BLD6G22LS-50				Available						
BLF1043						28V_50mA				
BLF1046						28V_300mA				
BLF145						14V_250mA	28V_250mA			
BLF147						14V_1000mA	28V_1000mA			
BLF174XR	→	→	Available							
BLF174XRS	→	→	Available							

## 4.2 Simulation Models (continued)

Type	ADS model			Microwave Office® Model		S-parameter data			
	ADS-2012	ADS-2014	ADS-2015	Library manual	Simulation example				
BLF175						25V_150mA	50V_150mA		
BLF177						25V_100mA	50V_100mA		
BLF178XR	→	→	Available						
BLF178XRS	→	→	Available						
BLF182XR	→	→	Available						
BLF182XRS	→	→	Available						
BLF183XR	→	→	Available	Available					
BLF183XRS	→	→	Available	Available					
BLF184XR	→	→	Available	Available					
BLF184XRS	→	→	Available	Available					
BLF188XR	→	→	Available	Available					
BLF188XRS	→	→	Available	Available					
BLF202						6.25V_20mA	12.5V_20mA		
BLF242						14V_10mA	28V_10mA		
BLF2425M7L250P	→	→	Available	Available					
BLF2425M7LS250P	→	→	Available	Available					
BLF2425M9L30	→	→	Available						
BLF2425M9LS30	→	→	Available						
BLF244						12.5V_25mA	14V_25mA	28V_25mA	
BLF245						12.5V_50mA	14V_50mA	28V_50mA	
BLF246						14V_50mA	14V_100mA	28V_50mA	28V_100mA
BLF248						14V_250mA	28V_250mA		
BLF25M612	→	→	Available						
BLF25M612G	→	→	Available						
BLF278						25V_500mA	50V_500mA		
BLF346						14V_3000mA	28V_3000mA		
BLF368						14V_250mA	16V_250mA	28V_250mA	35V_250mA
BLF3G21-30						26V_450mA			
BLF404						6.25V_50mA	12.5V_50mA		
BLF521						6.25V_10mA	12.5V_10mA		
BLF542						14V_10mA	14V_50mA	28V_10mA	28V_50mA
BLF544						14V_40mA	28V_40mA		
BLF548						14V_160mA	28V_160mA		
BLF571	→	→	Available						
BLF573	→	→	Available						
BLF573S	→	→	Available						
BLF574	→	→	Available						
BLF574XR	→	→	Available						
BLF574XRS	→	→	Available						
BLF578	→	→	Available						
BLF578XR	→	→	Available						
BLF578XRS	→	→	Available						
BLF640	→	→	Available						
BLF642	→	→	Available	Available					
BLF644P				Available					
BLF647P	→	→	Available						
BLF647PS	→	→	Available						
BLF6G10LS-200RN	→	→	Available						
BLF6G13L-250P				Available					
BLF6G13LS-250P				Available					
BLF6G22L-40P				Available					
BLF6G22LS-40P				Available					
BLF6G27L-40P				Available					
BLF6G27LS-40P				Available					
BLF6G38-100	→	→	Available						
BLF6G38-10G	→	→	Available						
BLF6G38-50	→	→	Available						
BLF6G38LS-100	→	→	Available						
BLF6G38LS-50	→	→	Available						

## 4.2 Simulation Models (continued)

Type	ADS model			Microwave Office® Model		S-parameter data			
	ADS-2012	ADS-2014	ADS-2015	Library manual	Simulation example				
BLF6H10L-160					Available				
BLF6H10LS-160	→	→	Available		Available				
BLF7G20L-90P					Available				
BLF7G20LS-90P					Available				
BLF7G22L-130	→	→	Available						
BLF7G22LS-130	→	→	Available						
BLF7G24L-100	→	→	Available						
BLF7G24LS-100	→	→	Available						
BLF871	→	→	Available						
BLF871S	→	→	Available						
BLF881	→	→	Available						
BLF881S	→	→	Available						
BLF884P	→	→	Available		Available				
BLF884PS	→	→	Available		Available				
BLF888A	→	→	Available						
BLF888AS	→	→	Available						
BLF888B	→	→	Available						
BLF888BS	→	→	Available						
BLF888D	→	→	Available						
BLF888DS	→	→	Available						
BLF8G10LS-300P	→	→	Available						
BLF8G19LS-170BV	→	→	Available						
BLF8G20LS-140GV	→	→	Available						
BLF8G20LS-160V	→	→	Available						
BLF8G20LS-200V					Available				
BLF8G20LS-400PGV	→	→	Available						
BLF8G22LS-140	→	→	Available						
BLF8G22LS-160BV	→	→	Available						
BLF8G22LS-240	→	→	Available		Available				
BLF8G24L-200P	→	→	Available						
BLF8G24LS-100GV	→	→	Available						
BLF8G24LS-150GV	→	→	Available						
BLF8G24LS-200P	→	→	Available						
BLF8G27LS-100GV	→	→	Available						
BLF8G27LS-100P	→	→	Available						
BLF8G27LS-150GV	→	→	Available						
BLF8G38LS-75V	→	→	Available						
BLF988	→	→	Available		Available				
BLF988S	→	→	Available		Available				
BLF9G38LS-90P					Available				
BLL6H0514-25	→	→	Available						
BLL6H1214-500	→	→	Available						
BLL6H1214L-250	→	→	Available						
BLL6H1214LS-250	→	→	Available						
BLL6H1214LS-500	→	→	Available						
BLM7G1822S-20PB					Available				
BLM7G1822S-20PBG	→	→	Available		Available				
BLM7G1822S-40PBG					Available				
BLM8G0710S-30PB					Available				
BLP05H6110XR	→	→	Available						
BLP05H6150XR	→	→	Available						
BLP05H6250XR	→	→	Available						
BLP05H6350XR	→	→	Available						
BLP05H635XR	→	→	Available						
BLP05H675XR	→	→	Available						
BLP10H603	→	→	Available						
BLP10H605	→	→	Available		Available				
BLP10H610	→	→	Available		Available				
BLP15M7160P	→	→	Available		Available				



## 4.2 Simulation Models (continued)

Type	ADS model			Microwave Office® Model		S-parameter data			
	ADS-2012	ADS-2014	ADS-2015	Library manual	Simulation example				
BLP27M810	→	→	Available						
BLP35M805	→	→	Available						
BLP7G07S-140P				Available					
BLP7G22-05	→	→	Available						
BLP7G22-10	→	→	Available	Available					
BLP8G10S-270PW	→	→	Available						
BLP8G10S-45PG	→	→	Available						
BLP8G20S-80P	→	→	Available						
BLP8G21S-160PV	→	→	Available						
BLP8G27-10	→	→	Available	Available					
BLP8G27-5	→	→	Available	Available					
BLS6G2735L-30	→	→	Available						
BLS6G2735LS-30	→	→	Available						
BLS6G3135-120	→	→	Available						
BLS6G3135-20	→	→	Available						
BLS6G3135S-120	→	→	Available						
BLS6G3135S-20	→	→	Available						
BLS7G2729L-350P	→	→	Available						
BLS7G2729LS-350P	→	→	Available						
BLS7G2730L-200P	→	→	Available						
BLS7G2730LS-200P	→	→	Available						
BLS8G2731L-400P	→	→	Available						
BLS8G2731LS-400P	→	→	Available						
CLF1G0035-100	→	→	Available	Available		50V_330mA			
CLF1G0035-100P				Available		50V_340mA			
CLF1G0035-200P						50V_640mA			
CLF1G0035-50	→	→	Available	Available		50V_150mA			
CLF1G0035S-100	→	→	Available	Available		50V_330mA			
CLF1G0035S-100P				Available		50V_340mA			
CLF1G0035S-200P						50V_640mA			
CLF1G0035S-50	→	→	Available	Available		50V_150mA			
CLF1G0060-10	→	→	Available	Available		50V_20mA			
CLF1G0060-30	→	→	Available	Available		50V_50mA			
CLF1G0060S-10	→	→	Available	Available		50V_20mA			
CLF1G0060S-30	→	→	Available	Available		50V_50mA			

# 5. Cross References and Replacements

## 5.1 Cross References

### Manufacturer Types versus Ampleon's Types in Alphabetical Order by Manufacturer Type

Abbreviations:

A&D	Aerospace & Defense
Bcst/ISM	Broadcast/Industrial, Scientific, Medical
Broadband	Broadband RF power GaN HEMT
MBB	Mobile Broadband (base stations)

Manufacturer type	Manufacturer	Ampleon type	Product family
AFT09S282NR3	Freescale	BLF8G09LS-270GW	MBB
AFT18S230SR3	Freescale	BLF8G20LS-200V	MBB
AFT18S230SR3	Freescale	BLF8G20LS-210GV	MBB
AFT20P060-4NR3	Freescale	BLP8G20S-80P	MBB
AFT20P140-4WGNR3	Freescale	BLF6G20LS-110	MBB
AFT20P140-4WNR3	Freescale	BLP8G21S-160PV	MBB
AFT21S230SR3	Freescale	BLF8G22LS-200GV	MBB
AFT23H200-4S2LR6	Freescale	BLC8G24LS-240AV	MBB
AFT26H160-4S4R3	Freescale	BLC8G27LS-160AV	MBB
AFT26H200W03SR6	Freescale	BLF7G27LS-150P	MBB
AFT26H250-24SR6	Freescale	BLC8G27LS-240AV	MBB
AFT26P100-4WSR3	Freescale	BLF7G27LS-90P	MBB
AFT26P100-4WSR3	Freescale	BLF8G27LS-100	MBB
LF2802A	M/A-com	BLF6G10L-40BRN	MBB
MAGX-000912-500L00	M/A-com	BLA6H0912-500	A&D
MAGX-001090-600L00	M/A-com	BLA6H1011-600	A&D
MAGX-001214-250L00	M/A-com	BLL6H1214L-250	A&D
MAGX-001214-500L00	M/A-com	BLL6H1214-500	A&D
MAGX-002731-030L00	M/A-com	CLF1G0060-30	Broadband
MAGX-003135-030L00	M/A-com	CLF1G0060-30	Broadband
MAGX-003135-120L00	M/A-com	BLS6G3135-120	A&D
MAPP-002729-300M00	M/A-com	BLS7G2729L-350P	A&D
MAPR-002729-170M00	M/A-com	BLS7G2730L-200P	A&D
MAPR-002731-115M00	M/A-com	BLS6G2731-120	A&D
MD7IC2012GNR1	Freescale	BLM7G1822S-40PBG	MBB
MD7IC2012NR1	Freescale	BLM7G1822S-40PB	MBB
MD8IC925GNR1	Freescale	BLP8G10S-45PG	MBB
MD8IC925NR1	Freescale	BLP8G10S-45P	MBB
MHT1001HR5	Freescale	BLF2425M6L180P	Bcst/ISM
MMRF1005HR5	Freescale	BLL6H1214L-250	A&D
MMRF1005HSR5	Freescale	BLL6H1214LS-250	A&D
MMRF1006HR5	Freescale	BLF578	Bcst/ISM
MMRF1007HR5	Freescale	BLA6H0912L-1000	A&D
MMRF1007HSR5	Freescale	BLA6H0912LS-1000	A&D
MMRF1009HR5	Freescale	BLA6H0912-500	A&D
MRF151G	M/A-com	BLF573	Bcst/ISM
MRF6P24190HR6	Freescale	BLF2425M6L180P	Bcst/ISM
MRF6P24190HR6	Freescale	BLF2425M7L250P	Bcst/ISM
MRF6P24190HSR6	Freescale	BLF2425M6LS180P	Bcst/ISM
MRF6P24190HSR6	Freescale	BLF2425M7LS250P	Bcst/ISM
MRF6P27160HR6	Freescale	BLF7G27L-150P	MBB
MRF6S18060NBR1	Freescale	BLF6G20LS-75	MBB

Manufacturer type	Manufacturer	Ampleon type	Product family
MRF6S18060NR1	Freescale	BLF6G20-75	MBB
MRF6S21050LR3	Freescale	BLD6G22L-50	MBB
MRF6S21050LSR3	Freescale	BLD6G22LS-50	MBB
MRF6S21100HR3	Freescale	BLF7G22L-100P	MBB
MRF6S21100HSR3	Freescale	BLF7G22LS-100P	MBB
MRF6S21140HSR3	Freescale	BLF6G22LS-130	MBB
MRF6S21190HR3	Freescale	BLF6G22-180PN	MBB
MRF6S24140HR3	Freescale	BLF2425M7L140	Bcst/ISM
MRF6S24140HR3	Freescale	BLF2425M8L140	Bcst/ISM
MRF6S24140HSR3	Freescale	BLF2425M7LS140	Bcst/ISM
MRF6S24140HSR3	Freescale	BLF2425M8LS140	Bcst/ISM
MRF6S27015GNR1	Freescale	BLF6G27-10G	MBB
MRF6S27015NR1	Freescale	BLF6G27-10	MBB
MRF6S27085HSR3	Freescale	BLF8G27LS-140	MBB
MRF6V13250HR5	Freescale	BLF6G13L-250P	Bcst/ISM
MRF6V13250HSR5	Freescale	BLF6G13LS-250P	Bcst/ISM
MRF6V2010NR1	Freescale	BLF571	Bcst/ISM
MRF6V2300NBR1	Freescale	BLF573	Bcst/ISM
MRF6V2300NBR5	Freescale	BLF573	Bcst/ISM
MRF6V2300NR1	Freescale	BLF573S	Bcst/ISM
MRF6V2300NR5	Freescale	BLF573S	Bcst/ISM
MRF6VP11KHR6	Freescale	BLF178P	Bcst/ISM
MRF6VP3450HR5	Freescale	BLF879P	Bcst/ISM
MRF6VP3450HR6	Freescale	BLF879P	Bcst/ISM
MRF6VP3450HSR5	Freescale	BLF879PS	Bcst/ISM
MRF6VP3450HSR6	Freescale	BLF879PS	Bcst/ISM
MRF7P20040HR3	Freescale	BLD6G21L-50	MBB
MRF7P20040HSR3	Freescale	BLD6G21LS-50	MBB
MRF7S15100HSR3	Freescale	BLF7G15LS-200	MBB
MRF7S21150HR3	Freescale	BLF7G22L-160	MBB
MRF7S35120HSR3	Freescale	BLS6G3135S-120	A&D
MRF7S38010HSR3	Freescale	BLF6G38-10G	MBB
MRF7S38075HR3	Freescale	BLF6G38-50	MBB
MRF7S38075HSR3	Freescale	BLF6G38LS-50	MBB
MRF8HP21080HR3	Freescale	BLF6G22L-40P	MBB
MRF8HP21080HSR3	Freescale	BLF6G22LS-40P	MBB
MRF8P20160HSR3	Freescale	BLF6G20LS-140	MBB
MRF8P23160WHR3	Freescale	BLF7G24L-100	MBB
MRF8P23160WHSR3	Freescale	BLF7G24LS-100	MBB
MRF8P26080HR3	Freescale	BLF6G27L-40P	MBB
MRF8P26080HSR3	Freescale	BLF6G27-100	MBB
MRF8P29300HR6	Freescale	BLS7G2729L-350P	A&D

## 5.1 Cross References (continued)

Manufacturer type	Manufacturer	Ampleon type	Product family
MRF8P29300HSR6	Freescale	BLS7G2729LS-350P	A&D
MRF8S18210WHSR3	Freescale	BLF6G20-180PN	MBB
MRF8S21100HSR3	Freescale	BLF6G22LS-100	MBB
MRF8S21120HR3	Freescale	BLF7G22L-130	MBB
MRF8S21120HSR3	Freescale	BLF7G22LS-130	MBB
MRF8S21140HSR3	Freescale	BLF8G22LS-140	MBB
MRF8S26120HR3	Freescale	BLF7G27L-100	MBB
MRF8S26120HSR3	Freescale	BLF7G27LS-100	MBB
MRF8S8260HSR3	Freescale	BLF8G10LS-270	MBB
MRF8S9200NR3	Freescale	BLF6G10LS-200RN	MBB
MRF8S9260HR3	Freescale	BLF7G10L-250	MBB
MRF8S9260HSR3	Freescale	BLF7G10LS-250	MBB
MRF9030LR1	Freescale	BLF642	Bcast/ISM
MRF9060LR1	Freescale	BLF645	Bcast/ISM
MRFE6VP5600HR6	Freescale	BLF174XR	Bcast/ISM
MRFE6VP5600HR6	Freescale	BLF184XR	Bcast/ISM
MRFE6VP5600HR6	Freescale	BLF574	Bcast/ISM
MRFE6VP5600HSR6	Freescale	BLF174XRS	Bcast/ISM
MRFE6VP5600HSR6	Freescale	BLF184XRS	Bcast/ISM
MRFE6VP5600HSR6	Freescale	BLF574XRS	Bcast/ISM
MRFE6VP61K25HR5/R6	Freescale	BLF188XR	Bcast/ISM
MRFE6VP61K25HR6/R5	Freescale	BLF178XR	Bcast/ISM
MRFE6VP61K25HS/R5	Freescale	BLF178XRS	Bcast/ISM
MRFE6VP61K25HS/R5	Freescale	BLF188XRS	Bcast/ISM
MRFE6VP61K25HS/R6	Freescale	BLF188XRS	Bcast/ISM
MRFE6VP6300HR3	Freescale	BLF573	Bcast/ISM
MRFE6VP6300HSR3	Freescale	BLF573S	Bcast/ISM
MRFE6VP8600HR6	Freescale	BLF10H6600P	Bcast/ISM
MRFE6VP8600HR6	Freescale	BLF888A	Bcast/ISM
MRFE6VP8600HR6	Freescale	BLF988	A&D
MRFE6VP8600HR6	Freescale	BLU6H0410L-600P	A&D
MRFE6VP8600HSR6	Freescale	BLF10H6600PS	Bcast/ISM
MRFE6VP8600HSR6	Freescale	BLF888AS	Bcast/ISM
MRFE6VP8600HSR6	Freescale	BLF988S	A&D
MRFE6VP8600HSR6	Freescale	BLU6H0410LS-600P	A&D
MW6S004NT1	Freescale	BLP25M705	Bcast/ISM
MW7IC2220GNR1	Freescale	BLM6G22-30G	MBB
MW7IC2220NR1	Freescale	BLF6G22-45	MBB
MW7IC2220NR1	Freescale	BLM6G22-30	MBB
PH1090-175L	M/A-com	BLA6G1011-200R	A&D
PH1214-220M	M/A-com	BLL6G1214L-250	A&D
PH1214-25L	M/A-com	BLL6H0514-25	A&D
PH2226-110M	M/A-com	BLS7G2325L-105	A&D
PH2729-130M	M/A-com	BLS6G2731S-130	A&D
PH2729-25M	M/A-com	BLS6G2735L-30	A&D
PH2731-5M	M/A-com	BLS6G2731-6G	A&D
PH3134-25M	M/A-com	BLS6G2735L-30	A&D
PH3135-20M	M/A-com	BLS6G3135-20	A&D
PTFA082201E	Infineon	BLF7G10L-250	MBB
PTFA082201F	Infineon	BLF7G10LS-250	MBB
PTFA091503EL	Infineon	BLF8G10L-160	MBB
PTFA092201E	Infineon	BLF7G10L-250	MBB
PTFA092201F	Infineon	BLF7G10LS-250	MBB
PTFA092201FV4	Infineon	BLF8G10LS-270	MBB
PTFA092213ELV4	Infineon	BLF7G10L-250	MBB
PTFA180701E	Infineon	BLF6G20-75	MBB
PTFA180701F	Infineon	BLF6G20LS-75	MBB
PTFA191001E	Infineon	BLF6G20-110	MBB

Manufacturer type	Manufacturer	Ampleon type	Product family
PTFA191001F	Infineon	BLF6G20LS-110	MBB
PTFA192001E	Infineon	BLF7G21L-160P	MBB
PTFA192001F	Infineon	BLF7G21LS-160P	MBB
PTFA210601E	Infineon	BLD6G22L-50	MBB
PTFA210601E	Infineon	BLF6G22L-40P	MBB
PTFA210601F	Infineon	BLF640	Bcast/ISM
PTFA210601F	Infineon	BLF6G22LS-40P	MBB
PTFA211801EV5	Infineon	BLF7G22L-200	MBB
PTFA212001E	Infineon	BLF6G22-180PN	MBB
PTFA212001E	Infineon	BLF7G22L-200	MBB
PTFA212001F	Infineon	BLF7G22LS-200	MBB
PTFA212001FV4	Infineon	BLF8G22L-220	MBB
PTFA220081M	Infineon	BLP7G22-05	MBB
PTFA220081M	Infineon	BLP7G22-10	MBB
PTFB182503EL	Infineon	BLF6G20-180PN	MBB
PTFB182503EL	Infineon	BLF7G20L-200	MBB
PTFB182503FL	Infineon	BLF7G20LS-200	MBB
PTFB182503FL	Infineon	BLF8G19LS-170BV	MBB
PTFB182503FL	Infineon	BLF8G20LS-200V	MBB
PTFB182503FLV2	Infineon	BLF8G20LS-260A	MBB
PTFB183404E	Infineon	BLF7G20L-250P	MBB
PTFB191501F	Infineon	BLF6G20LS-140	MBB
PTFB211503EL	Infineon	BLF7G22L-130	MBB
PTFB211503FL	Infineon	BLF6G22LS-130	MBB
PTFB211503FL	Infineon	BLF7G22LS-130	MBB
PTFB211803EL	Infineon	BLF6G22LS-180RN	MBB
PTFB211803EL	Infineon	BLF7G22L-160	MBB
PTFB211803ELV1	Infineon	BLF7G22L-200	MBB
PTFB211803FL	Infineon	BLF7G22LS-160	MBB
PTFB211803FLV2	Infineon	BLF7G22LS-200	MBB
PTFB211803FLV2	Infineon	BLF8G22LS-200V	MBB
PTFB212503EL	Infineon	BLF8G22LS-160BV	MBB
PTFB212507SHV1	Infineon	BLF8G22LS-200GV	MBB
PTFB241402F	Infineon	BLF2425M7L100	Bcast/ISM
PTFC210202FC	Infineon	BLF6G21-10G	MBB
PTFC260202FC	Infineon	BLC8G27LS-100AV	MBB
PTFC260362SC	Infineon	BLC8G27LS-160AV	MBB
PTFC262808FV	Infineon	BLC8G27LS-240AV	MBB
PTMA180402EL	Infineon	BLF6G20-45	MBB
PTMA180402FL	Infineon	BLF6G20S-45	MBB
PTVA030121EA	Infineon	BLF571	Bcast/ISM
PTVA035002EV	Infineon	BLF574	Bcast/ISM
PTVA042502EC	Infineon	BLF884P	Bcast/ISM
PTVA042502FC	Infineon	BLF884PS	Bcast/ISM
PTVA047002EV	Infineon	BLF879P	Bcast/ISM
PTVA047002EV	Infineon	BLF888A	Bcast/ISM
PTVA101K02EV	Infineon	BLA6H0912L-1000	A&D
PTVA104501EH	Infineon	BLA6H0912-500	A&D
PTVA123501EC	Infineon	BLF6G13L-250P	Bcast/ISM
PTVA123501FC	Infineon	BLF6G13LS-250P	Bcast/ISM
PTVA127002EV	Infineon	BLL6H1214-500	A&D
RF3932	RF Micro	CLF1G0035-50	Broadband
RF3933	RF Micro	CLF1G0035-100	Broadband
RFHA3942	RF Micro	CLF1G0035-50	Broadband
RFHA3942	RF Micro	CLF1G0060-30	Broadband
T1G4004532-FL	TriQuint	CLF1G0035-50	Broadband
T1G4012036-FL	TriQuint	CLF1G0035-100	Broadband
T2G4003532-FL	TriQuint	CLF1G0060-30	Broadband

## 5.2 Replacements

### Ampleon Discontinued Types versus Ampleon Replacement Types in Alphabetical Order by Discontinued Type

Ampleon discontinued type	Package	Ampleon replacement type	Ampleon discontinued type	Package	Ampleon replacement type
BLA0912-250	SOT502A	BLA6H0912-500/BLA6H0912L-1000	BLF6G20-75	SOT502A	BLP8G20S-80
BLA0912-250R	SOT502A	BLA6H0912-500/BLA6H0912L-1000	BLF6G20LS-180RN	SOT502B	BLF8G20LS-200V
BLA1011-10	SOT467C	BLL8H0514-25	BLF6G20LS-75	SOT502B	BLP8G20S-80
BLA1011-2	SOT538A	BLL8H0514-25	BLF6G20S-45	SOT608B	BLM7G1822S-40PB(G)
BLA1011-200	SOT502A	BLA6G1011LS-200R	BLF6G22-180PN	SOT539A	BLF8G22LS-200V
BLA1011-200R	SOT502A	BLA6G1011LS-200R	BLF6G22L-40P	SOT1121A	BLM7G1822S-40PB(G)
BLA1011-300	SOT957A	BLA8G1011L-200	BLF6G22LS-180PN	SOT539B	BLF8G22LS-220
BLA1011S-200	SOT502B	BLA6G1011LS-200R	BLF6G22LS-180RN	SOT502B	BLF8G22LS-205V
BLA1011S-200R	SOT502B	BLA6G1011LS-200R	BLF6G22LS-40BN	SOT1112B	BLM7G1822S-40PB(G)
BLD6G21L-50	SOT1130A	BLD8G1822S-50PB	BLF6G22LS-75	SOT502B	BLP8G20S-80
BLD6G21LS-50	SOT1130B	BLD8G1822S-50PB	BLF6G22S-45	SOT608B	BLM7G1822S-40PB(G)
BLD6G22L-50	SOT1130A	BLD8G1822S-50PB	BLF6G27-10	SOT975B	BLP8G27-10
BLD6G22LS-50	SOT1130B	BLD8G1822S-50PB	BLF6G27-100	SOT502A	BLF8G27LS-100
BLF1043	SOT538A	BLP27M810	BLF6G27-45	SOT608A	BLP8G2327-20 / BLM8G2327S-40PB(G)
BLF1046	SOT467C	BLF642	BLF6G27L-40P	SOT1121A	BLP8G2327-20 / BLM8G2327S-40PB(G)
BLF145	SOT123A	BLF642/BLP05H635XR	BLF6G27LS-135	SOT502B	BLF8G27LS-140
BLF147	SOT121B	BLP647P/BLP05H6150XR	BLF6G27S-45	SOT608B	BLP8G2327-20 / BLM8G2327S-40PB(G)
BLF175	SOT123A	BLF182XR/BLP05H6150XR	BLF7G20L-200	SOT502A	BLF8G20LS-200V
BLF177	SOT121B	BLF182XR/BLP05H6150XR	BLF7G20L-250P	SOT539A	BLC8G20LS-240PV
BLF202	SOT409A	BLP10H603/BLP35M805	BLF7G21L-160P	SOT1121A	BLC8G21LS-160AV
BLF2043F	SOT467C	BLP27M810	BLF7G22L-100P	SOT1121A	BLM7G1822S-80AB(G)
BLF242	SOT123A	BLP35M805	BLF7G22L-130	SOT502A	BLF8G22LS-140
BLF244	SOT123A	BLF640/BLF642	BLF7G22L-160	SOT502A	BLF8G22LS-160BV
BLF245	SOT123A	BLF642/BLP05H635XR	BLF7G22L-200	SOT502A	BLF8G22LS-205V
BLF245B	SOT279A	BLF642/BLP05H635XR	BLF7G22L-250P	SOT539A	BLF8G22LS-270(V)
BLF246	SOT121B	BLF645/BLF642	BLF7G22LS-100P	SOT1121B	BLM7G1822S-80AB(G)
BLF246B	SOT161A	BLF645/BLF642	BLF7G24L-100	SOT502A	BLF8G24LS-100V
BLF248	SOT262A1	BLF183XR/BLP05H6350XR	BLF7G24L-140	SOT502A	BLF8G24LS-150V
BLF278	SOT262A1	BLF183XR/BLP05H6350XR	BLF7G24L-160P	SOT539A	BLC9G27LS-151AV
BLF278/01	SOT262A1	BLF183XR/BLP05H6350XR	BLF7G27L-100	SOT502A	BLF8G27LS-100
BLF346	SOT119A	BLF642/BLP05H635XR	BLF7G27L-150P	SOT539A	BLC9G27LS-151AV
BLF368	SOT262A1	BLF183XR/BLP05H6350XR	BLF7G27L-75P	SOT1121A	BLC8G27LS-60AV
BLF369	SOT800-2	BLF184XR/BLP05H6700XR	BLF861A	SOT540A	BLF888A/BLF888B
BLF3G21-30	SOT467C	BLF642/BLP27M810	BLF872	SOT800-1	BLF888A/BLF888B
BLF3G21-6	SOT538A	BLP35M805	BLF878	SOT979A	BLF888A/BLF888B
BLF404	SOT409A	BLP10H603BLP10H605//BLP35M805	BLF888	SOT979A	BLF888A/BLF888B
BLF521	SOT172D	BLP10H603/BLP35M805	BLL1214-250	SOT502A	BLL6G1214L-250
BLF542	SOT171A	BLP35M805	BLL1214-250R	SOT502A	BLL6G1214L-250
BLF544	SOT171A	BLF642/BLP05H635XR	BLL1214-35	SOT467C	BLL8H0514-25
BLF546	SOT268A	BLF645	BLL6G1214LS-250	SOT502B	BLL6G1214L-250
BLF548	SOT262A2	BLF647P/BLP05H6150XR	BLM6G10-30	SOT834-1	BLM7G1822S-20/40PB(G)
BLF647	SOT540A	BLF647P/BLP05H6150XR/BLP10H6120P	BLM6G10-30G	SOT822-1	BLM8G0710S-30PB(G)
BLF6G10-160RN	SOT502A	BLF8G10LS-160V	BLM6G22-30	SOT834-1	BLM7G1822S-40PB(G)
BLF6G10-200RN	SOT502A	BLP8G10S-200	BLS2731-20	SOT445C	BLS6G2735L-30
BLF6G10LS-160	SOT502B	BLF8G10LS-160V	BLS2731-50	SOT422A	BLS6G2735L-30
BLF6G10LS-160RN	SOT502B	BLF8G10LS-160(V)	BLS2933-100	SOT502A	BLS6G2933S-130
BLF6G10LS-200R	SOT502B	BLP8G10S-200	BLW96/01	SOT121B	BLF182XR/BLP05H6250XR
BLF6G10S-45	SOT608B	BLP8G10S-45P	MX0912B251Y	SOT439A	BLL6G1214L-250
BLF6G20-110	SOT502A	BLC9G20LS-120V	MX0912B351Y	SOT439A	BLL6G1214L-250
BLF6G20-180PN	SOT539A	BLF8G20LS-200V	MZ0912B100Y	SOT443A	BLL8H0514L-130
BLF6G20-230PRN	SOT539A	BLC9G20LS-240PV	MZ0912B50Y	SOT443A	BLL8H0514-25

# 6. Packaging and Packing

## 6.1 Packaging

Ampleon package overview: [www.ampleon.com/packages](http://www.ampleon.com/packages)

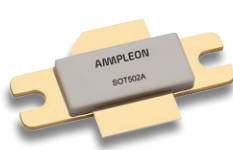
### Air-Cavity Ceramic (ACC) Packages\*



SOT467B



SOT467C



SOT502A



SOT502B



SOT502C



SOT502D



SOT502E



SOT502F



SOT538A



SOT539A



SOT539B



SOT540A



SOT608A



SOT608B



SOT634A



SOT922-1



SOT975B



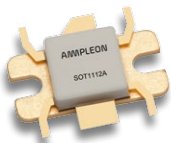
SOT975C



SOT1110A



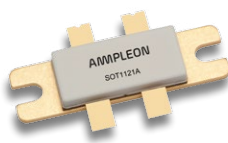
SOT1110B



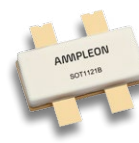
SOT1112A



SOT1120B



SOT1121A



SOT1121B

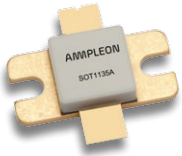


SOT1121E

\* Not drawn to scale



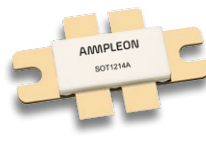
## Air-Cavity Ceramic (ACC) Packages\* (continued)



SOT1135A



SOT1135B



SOT1214A



SOT1214B



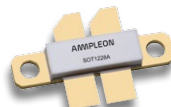
SOT1214C



SOT1227A



SOT1227B



SOT1228A



SOT1228B



SOT1239B



SOT1242B



SOT1242C



SOT1244B



SOT1244C



SOT1248C

## Air-Cavity Plastic (ACP) Packages\*



SOT1250-1



SOT1251-2



SOT1251-3



SOT1252-1



SOT1258-1



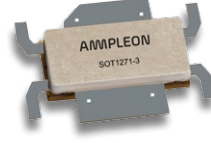
SOT1258-3



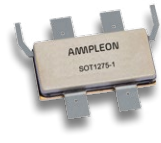
SOT1258-7



SOT1270-1



SOT1271-3



SOT1275-1

\* Not drawn to scale

## Overmolded Plastic (OMP) Packages\*



SOT822-1



SOT1138-2



SOT1179-2



SOT1204-2



SOT1211-2



SOT1212-2



SOT1221-2



SOT1223-2



SOT1224-2



SOT1352-1



SOT1371-1



SOT1462

## 6.2 Packing

### Packing Quantities per Package with Relevant Ordering Codes

Package	Package dimensions (mm)	Packing quantity	Product 12NC ending	Packing method	Package family
SOT467B	9.7 x 5.8 x 4.7	60	112	Blister, tray	Air-Cavity Ceramic (ACC)
		400	118	Tape and reel	
SOT467C	20.3 x 5.8 x 4.7	60	112	Blister, tray	
SOT502A	34.0 x 9.8 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
		300	135	Reel	
SOT502B	20.6 x 9.8 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT502C	20.6 x 9.8 x 4.7	60	112	Blister, tray	
SOT502D	34.0 x 9.8 x 4.7	60	112	Blister, tray	
SOT502E	20.6 x 9.8 x 4.7	60	112	Blister, tray	

\* Not drawn to scale

## Packing Quantities per Package with Relevant Ordering Codes (continued)

Package	Package dimensions (mm)	Packing quantity	Product 12NC ending	Packing method	Package family
SOT502F	34.0 x 9.8 x 4.7	60	112	Blister, tray	Air-Cavity Ceramic (ACC)
SOT538A	5.5 x 4.1 x 2.4	160	112	Blister, tray	
		500	135	Reel	
SOT539A	41.2 x 10.2 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT539B	32.3 x 10.2 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT540A	34.0 x 9.8 x 5.4	60	112	Blister, tray	
SOT608A	20.3 x 10.2 x 4.2	60	112	Blister, tray	
		300	135	Reel	
SOT608B	10.2 x 10.16 x 4.2	60	112	Blister, tray	
		100	118	Tape and reel	
		300	135	Reel	
SOT634A	34.0 x 13.7 x 4.8	60	112	Blister, tray	
SOT922-1	17.6 x 9.4 x 3.9	60	112	Blister, tray	
SOT975B	7.1 x 6.9 x 3.6	100	118	Tape and reel	
		180	112	Blister, tray	
SOT975C	7.1 x 6.9 x 3.6	100	118	Tape and reel	
		180	112	Blister, tray	
SOT1110A	41.2 x 10.2 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1110B	32.3 x 10.2 x 5.5	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1112A	20.3 x 9.8 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1120B	20.6 x 9.8 x 4.8	60	112	Blister, tray	
		100	118	Tape and reel	
		180	134	Reel	
SOT1121A	34.0 x 9.8 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1121B	20.6 x 9.8 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1121E	20.6 x 9.8 x 4.7	100	118	Tape and reel	
SOT1135A	20.3 x 9.8 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1135B	9.8 x 9.8 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1214A	34.0 x 9.8 x 4.7	60	112	Blister, tray	
SOT1214B	20.6 x 9.8 x 4.7	60	112	Blister, tray	

## Packing Quantities per Package with Relevant Ordering Codes (continued)

Package	Package dimensions (mm)	Packing quantity	Product 12NC ending	Packing method	Package family	
SOT1214C	20.6 x 9.8 x 4.7	96	127	Tube	Air-Cavity Ceramic (ACC)	
		100	118	Tape and reel		
SOT1227A	14.0 x 4.1 x 3.7	60	112	Blister, tray		
SOT1227B	5.1 x 4.1 x 3.7	60	112	Blister, tray		
SOT1228A	29.0 x 5.8 x 5.2	60	112	Blister, tray		
SOT1228B	17.3 x 5.8 x 5.2	60	112	Blister, tray		
SOT1239B	20.6 x 9.8 x 4.8	60	112	Blister, tray		
		60	115	Tape and reel		
		100	118	Tape and reel		
SOT1242B	32.3 x 10.2 x 5.5	60	112	Blister, tray		
		100	118	Tape and reel		
SOT1242C	32.2 x 10.2 x 4.9	60	127	Tube		
		100	115	Tape and reel		
SOT1244B	20.6 x 9.8 x 4.8	60	112	Blister, tray		
		100	118	Tape and reel		
SOT1244C	20.6 x 9.8 x 4.8	96	127	Tube		
		100	118	Tape and reel		
SOT1248C	32.3 x 10.2 x 5.5	100	118	Tape and reel		
SOT1250-1	32.3 x 10.1 x 4.5	60	112	Blister, tray		Air-Cavity Plastic (ACP)
		100	118	Tape and reel		
SOT1251-2	32.3 x 10.1 x 4.5	60	517	Blister, tray		
		100	518	Tape and reel		
SOT1251-3	32.3 x 10.1 x 4.5	60	517	Blister, tray		
		100	518	Tape and reel		
SOT1252-1	32.3 x 10.1 x 4.5	60	112	Blister, tray		
		60	517	Blister, tray		
		100	118	Tape and reel		
		100	518	Tape and reel		
SOT1258-3	32.2 x 10.1 x 4.5	60	517	Blister, tray		
		100	518	Tape and reel		
SOT1258-7	32.2 x 10.1 x 4.5	60	517	Blister, tray		
		100	518	Tape and reel		
SOT1270-1	20.6 x 9.8 x 3.7	60	517	Blister, tray		
SOT1275-1	20.6 x 9.8 x 3.7	60	517	Blister, tray		
		100	518	Tape and reel		
SOT822-1	15.9 x 11.0 x 3.5	100	118	Tape and reel	Overmolded Plastic (OMP)	
		180	127	Tube		
		500	135	Reel		
SOT1138-2	20.6 x 10.0 x 3.9	100	118	Tape and reel		
SOT1179-2	6.0 x 4.0 x 1.0	500	515	Reel		

## Packing Quantities per Package with Relevant Ordering Codes (continued)

Package	Package dimensions (mm)	Packing quantity	Product 12NC ending	Packing method	Package family
SOT1204-2	20.6 x 10.0 x 3.9	100	518	Tape and reel	Overmolded Plastic (OMP)
SOT1211-2	20.6 x 10.0 x 3.9	100	118	Tape and reel	
SOT1212-2	20.6 x 10.0 x 3.9	100	518	Tape and reel	
SOT1221-2	20.6 x 10.0 x 3.9	100	518	Tape and reel	
SOT1223-2	20.6 x 10.0 x 3.9	100	118	Tape and reel	
SOT1224-2	20.6 x 10.0 x 3.9	100	518	Tape and reel	
SOT1352-1	6.0 x 5.0 x 1.0	60	531	Tape and reel	
		500	515	Reel	

## 6.3 Marking Codes

In general, device marking includes the part number, some manufacturing information and the Ampleon's logo. If packages are too small for the full-length part number, a shorter, coded part number (called the "marking code") is used instead. To save space, the marking code is used in place of the manufacturing-site code. The full-length part number is always printed on the packing label on the box or bulk-pack in which the devices are supplied.

Marking code	Type	Package
B1025	BLP10H603	SOT1352-1
B1025	BLP10H603	SOT1352-1
B1050	BLP10H605	SOT1352-1
B1050	BLP10H605	SOT1352-1
B1000	BLP10H610	SOT1352-1
B1000	BLP10H610	SOT1352-1
B2550	BLP25M705	SOT1179-2
B2500	BLP25M710	SOT1179-2
B27810	BLP27M810	SOT1371-1
B35805	BLP35M805	SOT1371-1
B2250	BLP7G22-05	SOT1179-2
B2200	BLP7G22-10	SOT1179-2
B2700	BLP8G27-10	SOT1371-1
B2750	BLP8G27-5	SOT1371-1



# 7. Abbreviations

<b>A&amp;D</b>	Aerospace and Defense
<b>AC</b>	Alternating Current
<b>ACC</b>	Air-Cavity Ceramic package
<b>ACP</b>	Air-Cavity Plastic package
<b>ASYM</b>	ASYMmetrical design of Doherty (main and peak devices are different)
<b>Bcst/ISM</b>	Broadcast/Industrial, Scientific, Medical
<b>Broadband</b>	Broadband RF power GaN HEMT
<b>CDMA</b>	Code Division Multiple Access
<b>CW</b>	Continuous Wave
<b>dB</b>	decibel
<b>DC</b>	Direct Current
<b>DEV</b>	Development
<b>EDGE</b>	Enhanced Data Rates for GSM Evolution
<b>FM</b>	Frequency Modulation
<b>Freq</b>	Frequency
<b>GaAs</b>	Gallium Arsenide
<b>GaN</b>	Gallium Nitride
<b>Gen</b>	Generation
<b>GHz</b>	GigaHertz
<b>GNSS</b>	Global Navigation Satellite System
<b>HD</b>	High-Definition
<b>HDTV</b>	High-Definition Television
<b>HEMT</b>	High-Electron Mobility Transistor
<b>HF</b>	High Frequency (3 - 30 MHz)
<b>HPA</b>	High Power Amplifier
<b>HVQFN</b>	Plastic Thermally Enhanced Very thin Quad Flat package with no leads
<b>IC</b>	Integrated Circuit
<b>ISM</b>	Industrial, Scientific, and Medical (reserved frequency bands)
<b>kW</b>	kiloWatt
<b>LDMOS</b>	Laterally Diffused Metal-Oxide-Semiconductor
<b>LTE</b>	Long-Term Evolution
<b>mA</b>	milliamp
<b>MHz</b>	MegaHertz
<b>MMIC</b>	Monolithic Microwave Integrated Circuit
<b>MRI</b>	Magnetic Resonance Imaging
<b>OMP</b>	Overmolded Plastic
<b>PA</b>	Power Amplifier
<b>PAD</b>	Single-Package Asymmetric Doherty
<b>RF</b>	Radio Frequency
<b>RFS</b>	Released For Supply
<b>RoHS</b>	Restriction of Hazardous Substances
<b>SOT</b>	Small-Outline Transistor
<b>SYM</b>	Symmetrical design of Doherty (main and peak devices are the same type of transistor)
<b>TDMA</b>	Time Division Multiple Access
<b>TD-SCDMA</b>	Time Division-Synchronous Code Division Multiple Access
<b>UHF</b>	Ultra High Frequency (470 - 860 MHz)
<b>UWB</b>	Ultra-Wideband
<b>V</b>	Volt
<b>VDMOS</b>	Vertical Double-diffused Metal Oxide Semiconductor
<b>VHF</b>	Very High Frequency (30 - 300 MHz)
<b>WCDMA</b>	Wideband Code Division Multiple Access
<b>WiFi</b>	Wireless Fidelity
<b>WiMAX</b>	Worldwide interoperability for Microwave Access
<b>XR</b>	eXtremely Rugged

# 8. Contact

We share the passion for RF technology which is what we radiate to our customers, suppliers and partners. Whether we are initiating, discovering, developing, designing, marketing or supporting, our work is ultimately aimed at delivering our best and achieving outstanding results.

While we strive for sharing information about our portfolio and our competence, you might still have questions or do need our support for your specific challenge.

Please feel free to contact our experts across the globe in a location closest to you ([www.ampleon.com/locations](http://www.ampleon.com/locations)) by accessing our contact window ([www.ampleon.com/contact](http://www.ampleon.com/contact)) for topics related to sales inquiries, quality, application/simulation/modelling or other.



# 9. Product Index

Type	Portfolio section	Type	Portfolio section	Type	Portfolio section	Type	Portfolio section
BLA6G1011(L)-200R(G)	3.5.1	BLF174XR(S)	3.3.2	BLF6G27S-45	3.2.6	BLF8G20LS-400PGV	3.2.3
BLA6G1011LS-200RG	3.5.1	BLF178P	3.3.2	BLF6G38-10G	3.2.7	BLF8G20LS-400PV	3.2.3
BLA6H0912-500	3.5.1	BLF178XR(S)	3.3.2	BLF6G38-50	3.2.7	BLF8G22LS-140	3.2.4
BLA6H0912L(S)-1000	3.5.1	BLF182XR(S)	3.3.2	BLF6G38(LS)-100	3.2.7	BLF8G22LS-160BV	3.2.4
BLA6H1011-600	3.5.1	BLF183XR(S)	3.3.2	BLF6G38LS-50	3.2.7	BLF8G22LS-200(G)V	3.2.4
BLA8G1011L(S)-300	3.5.1	BLF184XR(G)	3.3.2	BLF6G38S-25	3.2.7	BLF8G22LS-205V	3.2.4
BLA8G1011L(S)-300G	3.5.1	BLF184XRS	3.3.2	BLF6H10LS-160	3.2.1	BLF8G22LS-220	3.2.4
BLC05M6XS200	3.3.2	BLF188XR(S)	3.3.2	BLF7G10L(S)-250	3.2.1	BLF8G22LS-240	3.2.4
BLC10G19XS-250WT	3.2.3	BLF188XRG	3.3.2	BLF7G15LS-200	3.2.2	BLF8G22LS-270	3.2.4
BLC10G22XS-120VT	3.2.4	BLF2324M8LS200P	3.3.3	BLF7G15LS-300P	3.2.2	BLF8G22LS-270GV	3.2.4
BLC10G22XS-240PWT	3.2.4	BLF2425M6L180P	3.4.4	BLF7G20L-90P	3.2.3	BLF8G22LS-270V	3.2.4
BLC2425M8LS300P	3.4.5	BLF2425M6LS180P	3.4.5	BLF7G20LS-140P	3.2.3	BLF8G24L-200P	3.2.5
BLC2425M9LS700PV	3.4.5	BLF2425M7L100	3.4.5	BLF7G20LS-200	3.2.3	BLF8G24LS-100(G)V	3.2.5
BLC2425M9XS250	3.4.5	BLF2425M7L140	3.4.5	BLF7G20LS-250P	3.2.3	BLF8G24LS-150(G)V	3.2.5
BLC2425M9XS500P	3.4.5	BLF2425M7L250P	3.4.5	BLF7G20LS-90P	3.2.3	BLF8G24LS-200P(N)	3.2.5
BLC8G09XS-400AWT	3.2.1	BLF2425M7LS100	3.4.5	BLF7G21LS-160	3.2.4	BLF8G27LS-100	3.2.6
BLC8G20LS-310AV	3.2.3	BLF2425M7LS140	3.4.5	BLF7G21LS-160P	3.2.4	BLF8G27LS-100GV	3.2.6
BLC8G20LS-400AV	3.2.3	BLF2425M7LS250P	3.4.5	BLF7G22L-130	3.2.4	BLF8G27LS-100P	3.2.6
BLC8G21LS-160AV	3.2.3	BLF2425M8L140	3.4.5	BLF7G22L-200	3.2.4	BLF8G27LS-100V	3.2.6
BLC8G22LS-450AV	3.2.4	BLF2425M8LS140	3.4.5	BLF7G22LS-130	3.2.4	BLF8G27LS-140	3.2.6
BLC8G24LS-240AV	3.2.5	BLF2425M9L30	3.4.5	BLF7G22LS-160	3.2.4	BLF8G27LS-140V	3.2.6
BLC8G24LS-241AV	3.2.5	BLF2425M9LS140	3.4.5	BLF7G22LS-200	3.2.4	BLF8G27LS-150(G)V	3.2.6
BLC8G27LS-100AV	3.2.6	BLF2425M9LS30	3.4.5	BLF7G22LS-250P	3.2.4	BLF8G38LS-75V	3.2.7
BLC8G27LS-140AV	3.2.6	BLF25M612	3.4.5	BLF7G24LS-100	3.2.5	BLF988(S)	3.5.1
BLC8G27LS-160AV	3.2.6	BLF25M612G	3.4.5	BLF7G24LS-140	3.2.5	BLF9G20LS-160V	3.2.3
BLC8G27LS-180AV	3.2.6	BLF571	3.3.1	BLF7G24LS-160P	3.2.5	BLF9G38-10(G)	3.2.7
BLC8G27LS-210PV	3.2.6	BLF573(S)	3.3.2	BLF7G27L-140	3.2.6	BLF9G38LS-90P	3.2.7
BLC8G27LS-240AV	3.2.6	BLF574	3.3.2	BLF7G27L-200PB	3.2.6	BLL6H1214L-250	3.5.2
BLC8G27LS-245AV	3.2.6	BLF574XR(S)	3.3.2	BLF7G27L(S)-150P	3.2.6	BLL6H0514-25	3.5.1
BLC8G27LS-60AV	3.2.5	BLF578	3.3.2	BLF7G27L(S)-75P	3.2.6	BLL6H0514L(S)-130	3.5.2
BLC8G27LS-60AVH	3.2.5	BLF578XR(S)	3.3.2	BLF7G27L(S)-90P	3.2.6	BLL6H1214-500	3.5.2
BLC9G15LS-400AVT	3.2.2	BLF640	3.3.2	BLF7G27LS-100	3.2.6	BLL6H1214L(S)-250	3.5.2
BLC9G15XS-400AVT	3.2.2	BLF642	3.3.1	BLF7G27LS-100	3.2.6	BLL6H1214LS-500	3.5.2
BLC9G20LS-120V	3.2.3	BLF644P	3.3.2	BLF7G27LS-140	3.2.6	BLL6H1214P2S-250	3.5.2
BLC9G20LS-160PV	3.2.3	BLF645	3.3.2	BLF871(S)	3.3.1	BLL8H0514-25	3.5.2
BLC9G20LS-240PV	3.2.3	BLF647P(S)	3.3.2	BLF879P(S)	3.3.1	BLL8H0514L(S)-130	3.5.2
BLC9G20LS-361AVT	3.2.3	BLF6G10-45	3.2.1	BLF881(S)	3.3.1	BLL8H1214L(S)-250	3.5.2
BLC9G20LS-470AVT	3.2.3	BLF6G10L-40BRN	3.2.1	BLF882(S)	3.3.1	BLL8H1214L(S)-500	3.5.2
BLC9G20XS-160AV	3.2.3	BLF6G10L(S)-260PRN	3.2.1	BLF884P(S)	3.3.1	BLL9G1214L(S)-600	3.5.2
BLC9G20XS-400AVT	3.2.3	BLF6G10LS-135RN	3.2.1	BLF888A(S)	3.3.1	BLM2425M7560P	3.4.5
BLC9G20XS-550AVT	3.2.3	BLF6G10LS-200RN	3.2.1	BLF888B(S)	3.3.1	BLM6G22-30G	3.2.4
BLC9G22XS-400AVT	3.2.4	BLF6G13L(S)-250P	3.3.3	BLF888D(S)	3.3.1	BLM7G1822S-20PB	3.2.3
BLC9G24XS-170AV	3.2.5	BLF6G13LS-250PG	3.3.3	BLF888E(S)	3.3.1	BLM7G1822S-20PBG	3.2.3
BLC9G27LS-150AV	3.2.6	BLF6G15L-40BRN	3.2.2	BLF898(S)	3.3.1	BLM7G1822S-40AB	3.2.3
BLC9G27LS-151AV	3.2.6	BLF6G15L(S)-250PBRN	3.2.2	BLF8G09LS-270G(W)	3.2.1	BLM7G1822S-40ABG	3.2.3
BLC9H10XS-400A	3.2.1	BLF6G15L(S)-40RN	3.2.2	BLF8G09LS-400P(G)W	3.2.1	BLM7G1822S-40PB	3.2.3
BLC9H10XS-400P	3.2.1	BLF6G15L(S)-500H	3.3.3	BLF8G10L(S)-160	3.2.1	BLM7G1822S-40PBG	3.2.3
BLCU188XRS	3.3.2	BLF6G20LS-110	3.2.3	BLF8G10LS-160V	3.2.1	BLM7G1822S-40PBG	3.2.3
BLF0910H6LS1000P	3.4.4	BLF6G20LS-140	3.2.3	BLF8G10LS-270	3.2.1	BLM7G1822S-80AB	3.2.3
BLF0910H6LS500	3.4.4	BLF6G21-10G	3.2.1	BLF8G10LS-270(G)V	3.2.1	BLM7G1822S-80ABG	3.2.3
BLF10H6600P(S)	3.3.3	BLF6G22L-40BN	3.2.4	BLF8G10LS-300P	3.2.1	BLM7G1822S-80PB	3.2.3
BLF10M6135	3.3.3	BLF6G22L-40BN	3.2.4	BLF8G19LS-170BV	3.2.3	BLM7G1822S-80PBG	3.2.3
BLF10M6160	3.3.3	BLF6G22LS-100	3.2.4	BLF8G20LS-140GV	3.2.3	BLM7G22S-60PB	3.2.4
BLF10M6200	3.3.3	BLF6G22LS-100	3.2.4	BLF8G20LS-140V	3.2.3	BLM7G22S-60PBG	3.2.4
BLF10M6LS135	3.3.3	BLF6G22LS-130	3.2.4	BLF8G20LS-160V	3.2.3	BLM7G24S-30BG	3.2.4
BLF10M6LS160	3.3.3	BLF6G22LS-40P	3.2.3	BLF8G20LS-160V	3.2.3	BLM8D1822-25B	3.2.3
BLF10M6LS200	3.3.3	BLF6G27-10G	3.2.6	BLF8G20LS-200V	3.2.3	BLM8D1822S-50PB	3.2.3
BLF1721M8LS200	3.4.2	BLF6G27L-50BN	3.2.6	BLF8G20LS-200V	3.2.3	BLM8D1822S-50PBG	3.2.3
		BLF6G27LS-40P	3.2.5	BLF8G20LS-260A	3.2.3	BLM8G0710-15B	3.2.1
		BLF6G27LS-40P(G)	3.2.6				

Type	Portfolio section	Type	Portfolio section	Type	Portfolio section	Type	Portfolio section
BLM8G0710S-15PB	3.2.1	BLP10H605	3.4.4	BLP8G2327-20	3.2.5	CLF1G0035(S)-100P	3.6
BLM8G0710S-15PB(G)	3.2.1	BLP10H610	3.4.4	BLP8G27-10	3.2.1	CLF1G0035(S)-200P	3.6
BLM8G0710S-30PB	3.2.1	BLP10H6120P	3.3.1	BLP8G27-5	3.2.1	CLF1G0035(S)-50	3.6
BLM8G0710S-30PBG	3.2.1	BLP10H630P	3.3.1	BLS6G2731-6G	3.5.3	CLF1G0060(S)-10	3.6
BLM8G0710S-45AB	3.2.1	BLP10H660P	3.3.1	BLS6G2731(S)-120	3.5.3	CLF1G0060(S)-30	3.6
BLM8G0710S-45ABG	3.2.1	BLP10H690P	3.3.1	BLS6G2731S-130	3.5.3	CLF2H1822LS-140	3.2.15
BLM8G0710S-60PB	3.2.1	BLP15M7160P	3.3.1	BLS6G2735L(S)-30	3.5.3	CLF2H1822LS-220	3.2.15
BLM8G0710S-60PBG	3.2.1	BLP25M705	3.3.2	BLS6G2933S-130	3.5.3	CLF2H27LS-145	3.2.15
BLM8G1822-20B	3.2.3	BLP25M710	3.3.2	BLS6G3135(S)-120	3.5.3	CLF2H38LS-140	3.2.15
BLM8G1822-3B	3.2.3	BLP27M810	3.3.2	BLS6G3135(S)-20	3.5.3		
BLM8G1822-6B	3.2.3	BLP35M805	3.3.2	BLS7G2325L-105	3.5.3		
BLM8G2327S-25PB(G)	3.2.6	BLP6H10-10	3.2.1	BLS7G2729L(S)-350P	3.5.3		
BLM8G2327S-25PBG	3.2.5	BLP7G07S-140P	3.2.1	BLS7G2730L(S)-200P	3.5.3		
BLM8G2327S-40PBG	3.2.6	BLP7G22-05	3.2.1	BLS7G2933S-150	3.5.3		
BLP05H6110XR	3.3.2	BLP7G22-10	3.2.1	BLS7G3135L(S)-350P	3.5.3		
BLP05H6150XR	3.3.2	BLP8G05S-200	3.2.1	BLS7G3135LS-200	3.5.3		
BLP05H6250XR	3.3.2	BLP8G05S-200G	3.2.1	BLS8G2731L(S)-400P	3.5.3		
BLP05H6350XR	3.3.2	BLP8G10S-270PW	3.2.1	BLS9G2731L(S)-400	3.5.3		
BLP05H635XR	3.3.2	BLP8G10S-45P	3.2.1	BLS9G2731LS-400(G)	3.5.3		
BLP05H6700XR(G)	3.3.2	BLP8G10S-45PG	3.2.1	BLS9G2735L(S)-50	3.5.3		
BLP05H6700XRG	3.4.1	BLP8G1522-20	3.2.2	BLS9G2934L(S)-400	3.5.3		
BLP05H675XR	3.4.1	BLP8G20S-80P	3.2.3	BLS9G3135L(S)-400	3.5.3		
BLP05M7200	3.4.3	BLP8G21S-160PV	3.2.4	BLU6H0410L(S)-600P	3.5.1		
BLP10H603	3.4.4	BLP8G2327-10	3.2.5	CLF1G0035(S)-100	3.6		





