



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# 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)

# Contents

<b>1. RF Applications</b>	<b>7</b>
1.1 Mobile Broadband	7
1.1.1 Base Stations (all cellular standards and frequencies)	7
1.1.2 Repeater	10
1.1.3 Small Cells	11
1.2 Broadcast	13
1.2.1 FM/HDR/DAB Radio	14
1.2.2 UHF/D-TV	15
1.2.3 VHF/D-TV	16
1.3 Industrial, Scientific and Medical (ISM)	19
1.3.1 Instrumentation	20
1.3.2 Medical and Industrial Imaging	20
1.3.3 CO <sub>2</sub> Laser Exciters and Plasma Generators	20
1.3.4 Particle Accelerators	20
1.4 RF Energy	23
1.4.1 RF Cooking	25
1.4.2 RF Lighting	27
1.4.3 RF Heating and Drying	28
1.4.4 RF Ignition	29
1.5 Aerospace & Defense	31
1.5.1 Radar	31
1.5.2 Electronic Counter Measures (ECM)	32
1.5.3 Military Communication Systems (Milcom)	32
<b>2. Technologies</b>	<b>35</b>
2.1 Best-in-Class LDMOS to drive any RF Power Application	35
2.2 Best-in-Class GaN for High Frequency Performance	37
2.3 RF Power Transistor Packages	38
<b>3. RF Product Portfolio</b>	<b>41</b>
3.1 New Products	41
3.2 RF Power Transistors for Mobile Broadband	43
3.2.1 0.4 - 1.0 GHz LDMOS Transistors	43
3.2.2 1.3 - 1.7 GHz LDMOS Transistors	44
3.2.3 1.8 - 2.0 GHz LDMOS Transistors	44
3.2.4 2.0 - 2.2 GHz LDMOS Transistors	45
3.2.5 2.3 - 2.4 GHz LDMOS Transistors	46
3.2.6 2.5 - 2.7 GHz LDMOS Transistors	46
3.2.7 3.4 - 3.8 GHz LDMOS Transistors	46
3.2.8 LDMOS Doherty Designs	47
3.2.9 GaN Doherty Designs	48
3.2.10 Single Package Asymmetric Doherty (PAD) LDMOS Transistors	49

3.2.11	Overmolded Plastic (OMP) LDMOS Transistors.....	49
3.2.12	MMIC LDMOS Transistors.....	50
3.2.13	Small Cell LDMOS Transistors.....	50
3.2.14	High Voltage LDMOS Transistors.....	51
3.2.15	GaN Transistors for Base Station Applications.....	51
<b>3.3</b>	<b>RF Power Transistors for Broadcast.....</b>	<b>52</b>
3.3.1	UHF Broadcast LDMOS Transistors (470 - 860 MHz).....	52
3.3.2	HF / VHF Broadcast LDMOS Transistors (0 - 500 MHz).....	53
3.3.3	HF / VHF Broadcast LDMOS Transistors (0 - 1600 MHz).....	53
<b>3.4</b>	<b>RF Power Transistors for Solid State RF Energy and ISM.....</b>	<b>54</b>
3.4.1	ISM LDMOS Transistors (0 - 500 MHz / XR).....	54
3.4.2	ISM LDMOS Transistors (0 - 1600 MHz).....	55
3.4.3	RF Energy LDMOS Transistors (0 - 500 MHz).....	55
3.4.4	RF Energy LDMOS Transistors (915 MHz).....	56
3.4.5	RF Energy LDMOS Transistors (2.45 GHz).....	56
<b>3.5</b>	<b>RF Power Transistors for Aerospace &amp; Defense.....</b>	<b>57</b>
3.5.1	Avionics LDMOS Transistors.....	57
3.5.2	L-Band LDMOS Transistors.....	57
3.5.3	S-Band LDMOS Transistors.....	58
<b>3.6</b>	<b>Gallium Nitride (GaN) RF Power Devices.....</b>	<b>58</b>
<b>4.</b>	<b>Design Support.....</b>	<b>61</b>
4.1	Application Notes.....	62
4.2	Simulation Models.....	62
<b>5.</b>	<b>Cross References and Replacements.....</b>	<b>66</b>
5.1	Cross References.....	66
5.2	Replacements.....	68
<b>6.</b>	<b>Packaging and Packing.....</b>	<b>69</b>
6.1	Packaging.....	69
6.2	Packing.....	71
6.3	Marking Codes.....	74
<b>7.</b>	<b>Abbreviations.....</b>	<b>75</b>
<b>8.</b>	<b>Contact.....</b>	<b>76</b>
<b>9.</b>	<b>Product Index.....</b>	<b>77</b>

# 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

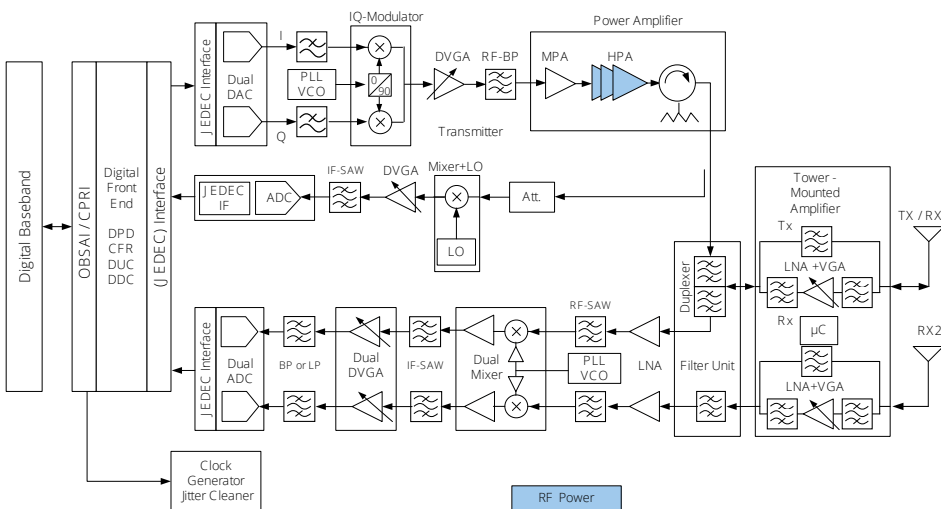
Ampleon is the fastest growing supplier of LDMOS transistors for cellular infrastructure, leading the WCDMA and LTE markets. Our promise is unprecedented performance combined with best-in-class application support and constant innovation. Our design and manufacturing technologies ensure the best PA manufacturing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

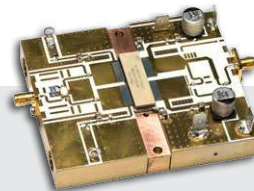
### Recommended Products

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)
Doherty	2500	2700	100	BLF8G27LS-100P
	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
Doherty	2300	2400	170	BLC9G24XS-170AV*
	2496	2690	180	BLC8G27LS-180AV
Final	2500	2700	200	BLC8G27LS-210PV
	1800	2000	200	BLF8G20LS-200V
	2110	2170	200	BLF8G22LS-200(G)V
	2300	2400	200	BLF8G24L(S)-200P(N)
Doherty	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

Product	F <sub>min</sub> (MHz)	F <sub>max</sub> (MHz)	P <sub>L(1dB)</sub> (W)	Type
Final	700	1000	300	BLF8G10LS-300P
Doherty	1900	2000	310	BLC8G20LS-310AV <sup>(1)</sup>
	1805	1990	360	BLC9G20LS-361AVT <sup>(1)</sup>
	1800	2000	400	BLC8G20LS-400AV <sup>(1)</sup>
Final	716	960	400	BLF8G09LS-400P(G)W
	1805	1995	400	BLF8G20LS-400P(G)V
	1800	2000	400	BLC9G20XS-400AVT <sup>(1)</sup>
	2100	2200	400	BLC9G22XS-400AVT <sup>(1)</sup>
	800	1000	400	BLC8G09XS-400AWT* <sup>(1)</sup>
	800	1000	400	BLC9H10XS-400A* <sup>(1)</sup>
	700	1000	400	BLC9H10XS-400P*
Doherty	1452	1511	400	BLC9G15XS-400AVT* <sup>(1)</sup>
	2110	2170	450	BLC8G22LS-450AV <sup>(1)</sup>
Final	1805	1990	470	BLC9G20LS-470AVT <sup>(1)</sup>
	1800	1900	550	BLC9G20XS-550AVT <sup>(1)</sup>

## 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

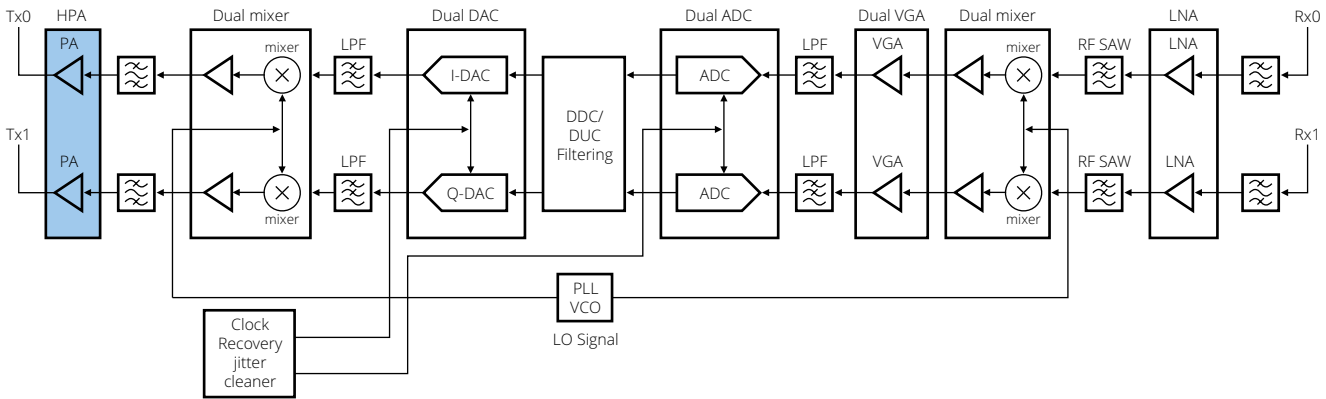
The BLM8G0710S-60PB(G) is a dual section, 2-stage power MMIC using Ampleon's state of the art GEN8 LDMOS technology. This multiband device is perfectly suited as a general purpose driver or small cell final in the frequency range from 700 MHz to 1000 MHz. Available in gull wing or straight lead outline.

### 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(dB)</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)
MMIC	2300	2700	40	BLM8G2327S-40PB(G)*
MMIC	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)
MMIC	1805	2170	80	BLM7G1822S-80AB(G)
Final	1800	2200	80	BLP8G20S-80P
Final	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.

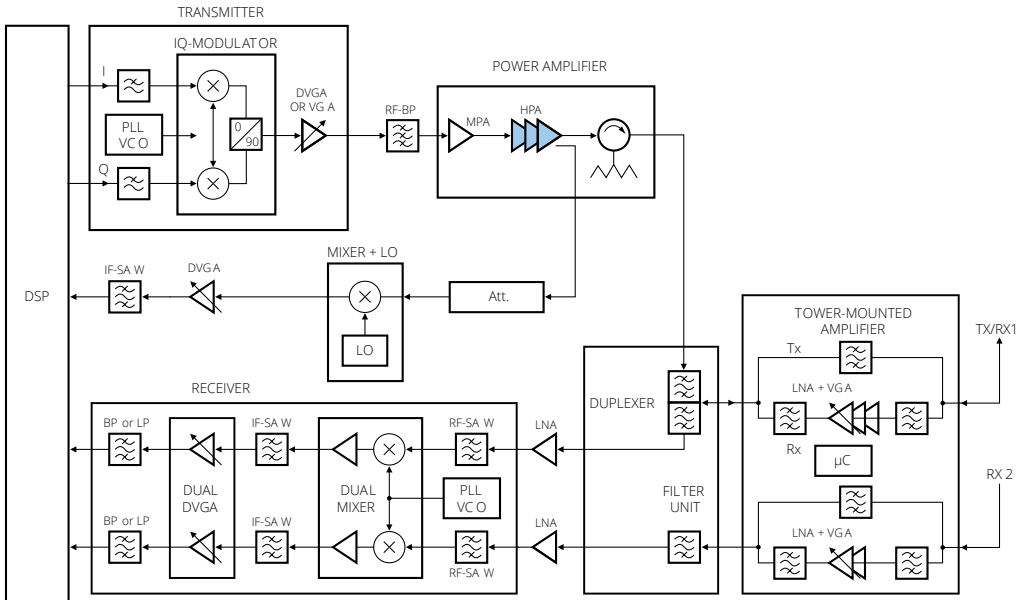
### Features

- 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	$F_{min}$ (MHz)	$F_{max}$ (MHz)	$P_{L(1dB)}$ (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	$F_{min}$ (MHz)	$F_{max}$ (MHz)	$P_{L(1dB)}$ (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.

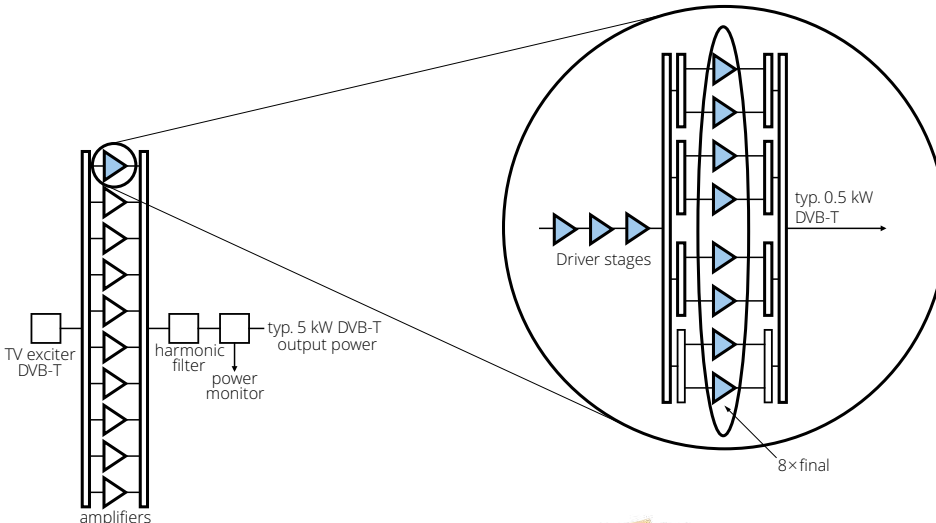
### VHF, FM, and Analog TV Markets

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 BLF182XR(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)
	BLF888B(S)	SOT539A(B)	470	860	650	120	50	33	21	DVB-T (8k OFDM)
Final/Doherty	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)
Final/class-AB	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.

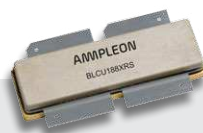
### Features

- 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 close-up photograph of industrial machinery, possibly a lathe or mill, with a large volume of bright orange and yellow sparks being ejected from the cutting area. The scene is dimly lit, with a blueish tint in the background. A semi-transparent blue rectangular box is overlaid on the left side of the image, containing white text. A grey square icon with a white starburst symbol is positioned in the lower right quadrant of the image.

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>BLP10H605</b>	SOT1352	10	1400	5	50	59.6	22.4	CW
RF ignition	Final	<b>BLF0910H6LS500*</b>	SOT502B	900	930	500	50	60	18	CW
	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
	Driver	<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.

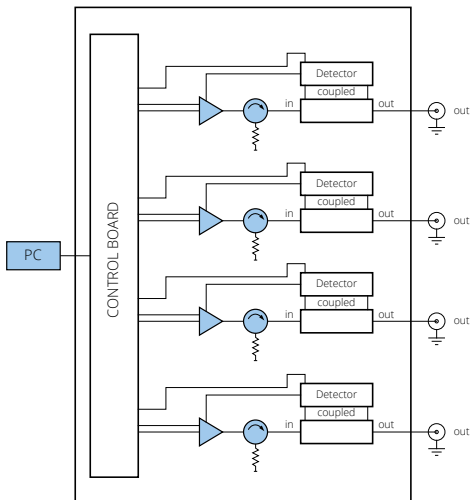
Replacing a single magnetron with multiple solid state RF sources brings additional possibilities for controlling the waveform inside the oven. The frequency can be changed to match the type of food being cooked and by adjusting the phase of the signals, the energy distribution can be altered to ensure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