

# BLM7G1822S-40PB; BLM7G1822S-40PBG

LDMOS 2-stage power MMIC

Rev. 7 — 28 September 2018

AMPLEON

Product data sheet

## 1. Product profile

### 1.1 General description

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

**Table 1. Application performance**

Typical RF performance at  $T_{case} = 25\text{ }^{\circ}\text{C}$ ;  $I_{Dq1} = 40\text{ mA}$ ;  $I_{Dq2} = 120\text{ mA}$ .

Test signal: 3GPP test model 1; 64 DPCH; PAR = 10 dB at 0.01% probability on CCDF; per section unless otherwise specified in a class-AB production circuit.

Test signal	f	V <sub>DS</sub>	P <sub>L(AV)</sub>	G <sub>p</sub>	$\eta_D$	ACPR <sub>5M</sub>
	(MHz)	(V)	(W)	(dB)	(%)	(dBc)
single carrier W-CDMA	2167.5	28	4	31.5	25	-38.5

### 1.2 Features and benefits

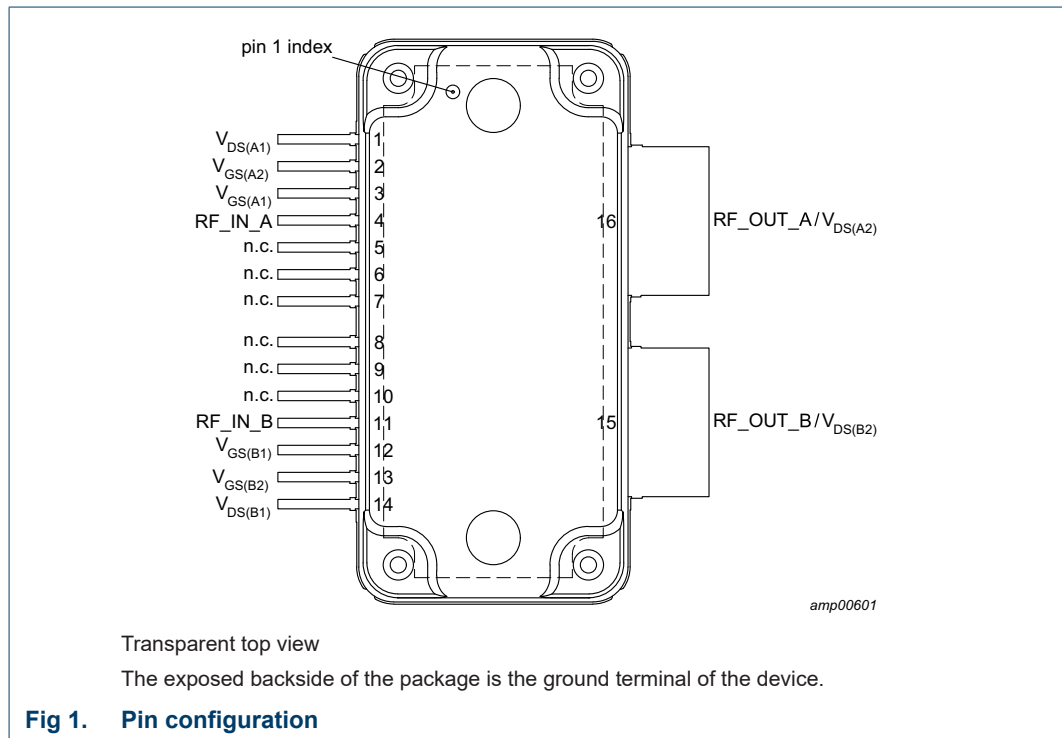
- Designed for broadband operation (frequency 1805 MHz to 2170 MHz)
- High section-to-section isolation enabling multiple combinations
- Integrated temperature compensated bias
- Biasing of individual stages is externally accessible
- Integrated ESD protection
- Excellent thermal stability
- High power gain
- On-chip matching for ease of use
- For RoHS compliance see the product details on the Ampleon website

### 1.3 Applications

- RF power MMIC for W-CDMA base stations in the 1805 MHz to 2170 MHz frequency range. Possible circuit topologies are the following as also depicted in [Section 8.1](#):
  - ◆ Dual section or single ended
  - ◆ Doherty
  - ◆ Quadrature combined
  - ◆ Push-pull

## 2. Pinning information

### 2.1 Pinning



### 2.2 Pin description

Table 2. Pin description

Symbol	Pin	Description
$V_{DS(A1)}$	1	drain-source voltage of stage A1
$V_{GS(A2)}$	2	gate-source voltage of stage A2
$V_{GS(A1)}$	3	gate-source voltage of stage A1
RF_IN_A	4	RF input section A
n.c.	5	not connected
n.c.	6	not connected
n.c.	7	not connected
n.c.	8	not connected
n.c.	9	not connected
n.c.	10	not connected
RF_IN_B	11	RF input section B
$V_{GS(B1)}$	12	gate-source voltage of stage B1
$V_{GS(B2)}$	13	gate-source voltage of stage B2
$V_{DS(B1)}$	14	drain-source voltage of stage B1

Table 2. Pin description ...continued

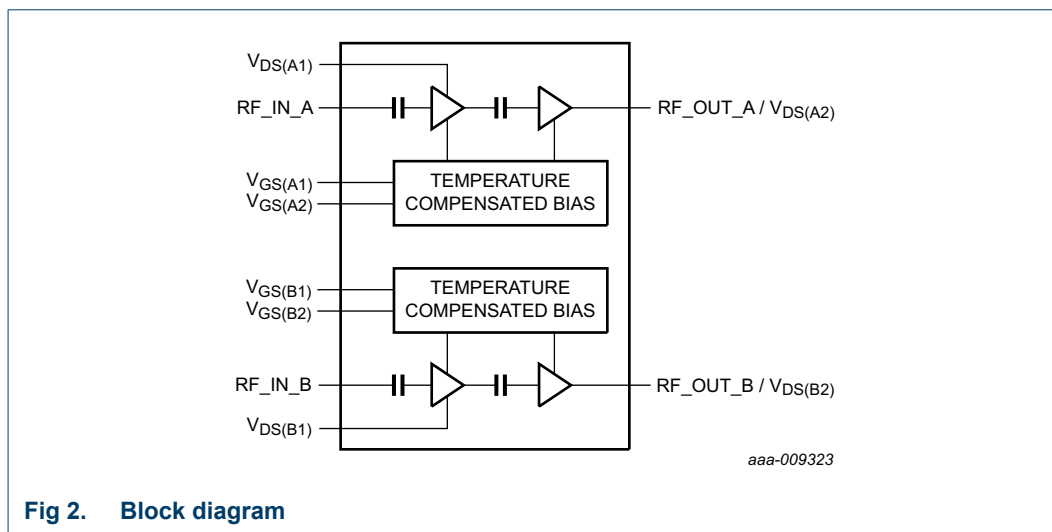
Symbol	Pin	Description
RF_OUT_B/V <sub>DS(B2)</sub>	15	RF output section B / drain-source voltage of stage B2
RF_OUT_A/V <sub>DS(A2)</sub>	16	RF output section A / drain-source voltage of stage A2
GND	flange	RF ground

### 3. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BLM7G1822S-40PB	-	plastic, heatsink small outline package; 16 leads (flat)	SOT1211-3
BLM7G1822S-40PBG	-	plastic, heatsink small outline package; 16 leads	SOT1212-3

### 4. Block diagram



### 5. Limiting values

Table 4. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Min	Max	Unit
V <sub>DS</sub>	drain-source voltage		-	65	V
V <sub>GS</sub>	gate-source voltage		-0.5	+13	V
T <sub>stg</sub>	storage temperature		-65	+150	°C
T <sub>j</sub>	junction temperature	[1]	-	225	°C
T <sub>case</sub>	case temperature		-	150	°C

[1] Continuous use at maximum temperature will affect the reliability. For details refer to the online MTF calculator.

## 6. Thermal characteristics

**Table 5. Thermal characteristics**

Measured for total device.

Symbol	Parameter	Conditions	Value	Unit
R <sub>th(j-c)</sub>	thermal resistance from junction to case	final stage; T <sub>case</sub> = 90 °C; P <sub>L</sub> = 2.52 W [1]	1.2	K/W
		driver stage; T <sub>case</sub> = 90 °C; P <sub>L</sub> = 2.52 W [1]	3.8	K/W

[1] When operated with a CW signal.

## 7. Characteristics

**Table 6. DC characteristics**

T<sub>case</sub> = 25 °C; per section unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>Final stage</b>						
V <sub>(BR)DSS</sub>	drain-source breakdown voltage	V <sub>GS</sub> = 0 V; I <sub>D</sub> = 0.302 mA	65	-	-	V
V <sub>GS(th)</sub>	gate-source threshold voltage	V <sub>DS</sub> = 10 V; I <sub>D</sub> = 30.2 mA	1.4	1.8	2.4	V
V <sub>GSq</sub>	gate-source quiescent voltage	V <sub>DS</sub> = 28 V; I <sub>D</sub> = 120 mA	1.55	1.9	2.45	V
		V <sub>DS</sub> = 28 V; I <sub>D</sub> = 120 mA [1]	1.9	2.3	3.3	V
I <sub>DSS</sub>	drain leakage current	V <sub>GS</sub> = 0 V; V <sub>DS</sub> = 28 V	-	-	1.4	μA
I <sub>DSX</sub>	drain cut-off current	V <sub>GS</sub> = V <sub>GS(th)</sub> + 3.75 V; V <sub>DS</sub> = 10 V	-	5.4	-	A
I <sub>GSS</sub>	gate leakage current	V <sub>GS</sub> = 1.0 V; V <sub>DS</sub> = 0 V	-	-	140	nA
<b>Driver stage</b>						
V <sub>(BR)DSS</sub>	drain-source breakdown voltage	V <sub>GS</sub> = 0 V; I <sub>D</sub> = 0.058 mA	65	-	-	V
V <sub>GS(th)</sub>	gate-source threshold voltage	V <sub>DS</sub> = 10 V; I <sub>D</sub> = 5.8 mA	1.4	1.8	2.4	V
V <sub>GSq</sub>	gate-source quiescent voltage	V <sub>DS</sub> = 28 V; I <sub>D</sub> = 40 mA	1.65	2	2.55	V
		V <sub>DS</sub> = 28 V; I <sub>D</sub> = 40 mA [2]	1.9	2.4	3.2	V
I <sub>DSS</sub>	drain leakage current	V <sub>GS</sub> = 0 V; V <sub>DS</sub> = 28 V	-	-	1.4	μA
I <sub>DSX</sub>	drain cut-off current	V <sub>GS</sub> = V <sub>GS(th)</sub> + 3.75 V; V <sub>DS</sub> = 10 V	-	1.04	-	A
I <sub>GSS</sub>	gate leakage current	V <sub>GS</sub> = 1.0 V; V <sub>DS</sub> = 0 V	-	-	140	nA

[1] In production circuit with 825 Ω gate feed resistor.

[2] In production circuit with 850 Ω gate feed resistor.

**Table 7. RF Characteristics**

Typical RF performance at  $T_{case} = 25\text{ }^{\circ}\text{C}$ ;  $V_{DS} = 28\text{ V}$ ;  $I_{Dq1} = 40\text{ mA}$ ;  $I_{Dq2} = 120\text{ mA}$ ;  $P_{L(AV)} = 4\text{ W}$ . Per section unless otherwise specified, measured in an Ampleon wideband  $f = 1807.5\text{ MHz}$  to  $2167.5\text{ MHz}$  production circuit.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>Test signal: single carrier W-CDMA [1]</b>						
$G_p$	power gain	$f = 1807.5\text{ MHz}$	-	31	-	dB
		$f = 2167.5\text{ MHz}$	30	31.5	33	dB
$\eta_D$	drain efficiency	$f = 1807.5\text{ MHz}$	-	24.5	-	%
		$f = 2167.5\text{ MHz}$	22	25	-	%
$RL_{in}$	input return loss	$f = 2167.5\text{ MHz}$	-	-15	-10	dB
$ACPR_{5M}$	adjacent channel power ratio (5 MHz)	$f = 1807.5\text{ MHz}$	-	-40.5	-	dBc
		$f = 2167.5\text{ MHz}$	-	-38.5	-36.5	dBc
$PAR_O$	output peak-to-average ratio	$f = 1807.5\text{ MHz}$	-	8	-	dB
		$f = 2167.5\text{ MHz}$	7.2	7.7	-	dB
$\Delta I_{Dq}/\Delta T$	quiescent drain current variation with temperature	$T = -40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$				
		final stage $I_{Dq}$ ; gate feed resistor = $825\text{ }\Omega$	-	$\pm 1$	-	%
		driver stage $I_{Dq}$ ; gate feed resistor = $850\text{ }\Omega$	-	$\pm 1$	-	%
<b>Test signal: CW [2]</b>						
$\Delta\phi_{s21}$	phase response difference	between sections	-10	-	+10	deg
$\Delta s_{21} ^2$	insertion power gain difference	between sections	-0.5	-	+0.5	dB

[1] 3GPP test model 1; 64 DPCH; PAR = 10 dB at 0.01% probability on CCDF.

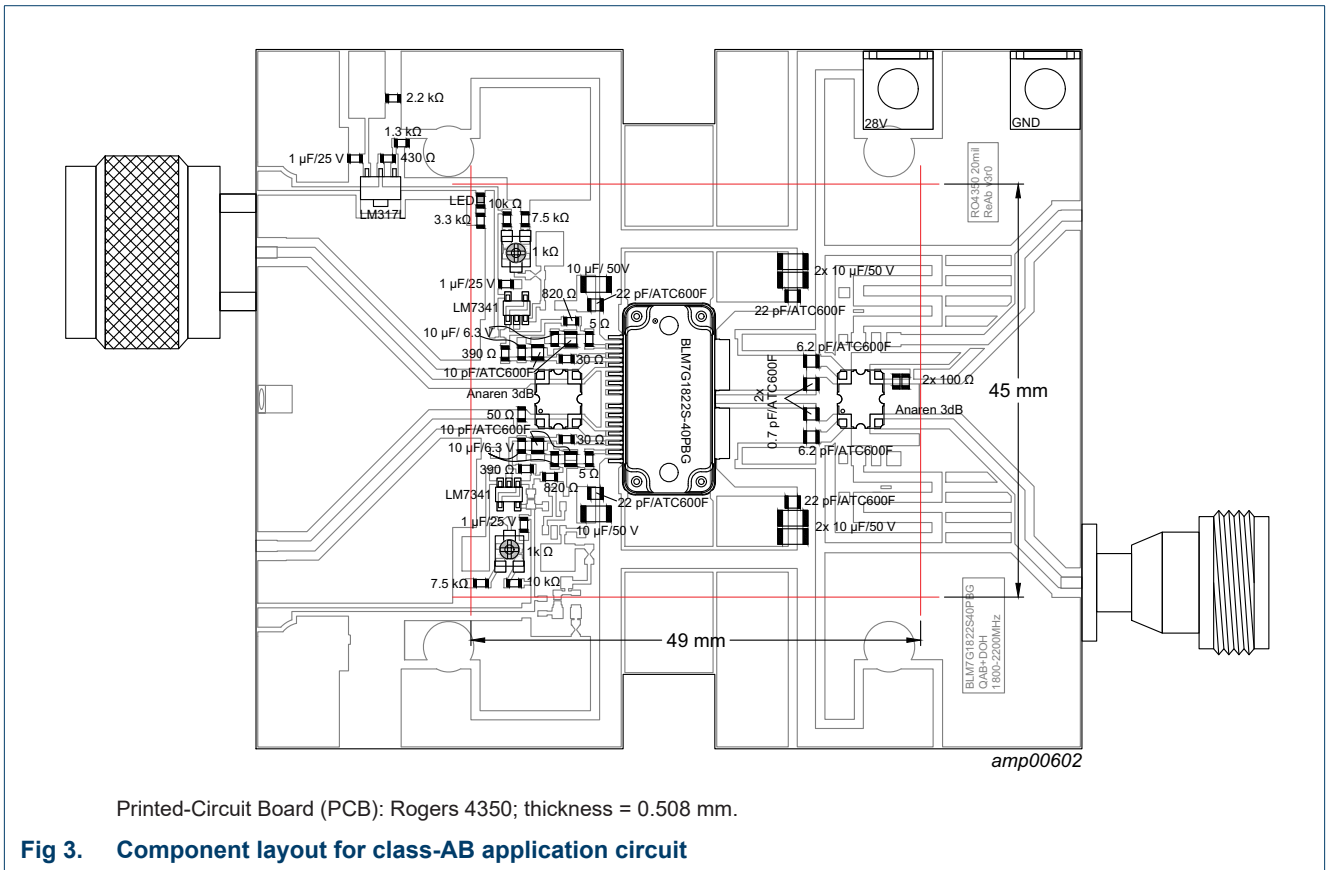
[2]  $f = 2170\text{ MHz}$ .

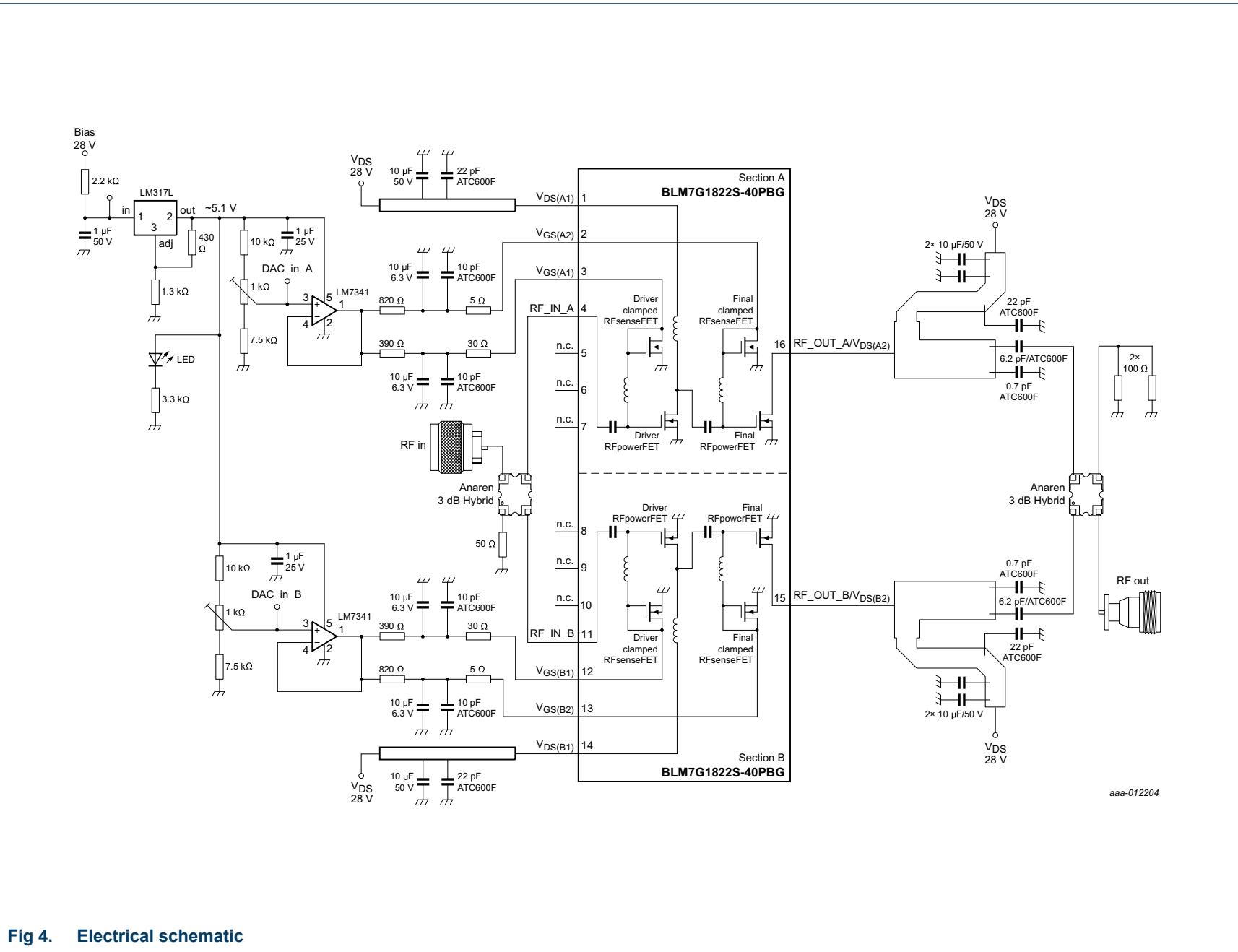
## 8. Application information

**Table 8. Typical performance**

Test signal: 1-tone CW; RF performance at  $T_{case} = 25\text{ }^{\circ}\text{C}$ ;  $V_{DS} = 28\text{ V}$ ;  $I_{Dq1} = 80\text{ mA}$  (both sections);  $I_{Dq2} = 240\text{ mA}$  (both sections) unless otherwise specified, measured in an Ampleon wideband  $f = 1805\text{ MHz}$  to  $2170\text{ MHz}$  class AB application circuit.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$P_{L(1dB)}$	output power at 1 dB gain compression	$f = 1960\text{ MHz}$	-	45.1	-	W
$\eta_D$	drain efficiency	at $P_{L(1dB)}$ ; $f = 1960\text{ MHz}$	-	53.3	-	%
$G_p$	power gain	$P_{L(AV)} = 4\text{ W}$ ; $f = 1960\text{ MHz}$	-	31.6	-	dB
$B_{video}$	video bandwidth	2-tone CW; $P_{L(AV)} = 4\text{ W}$ ; $f = 1960\text{ MHz}$	-	140	-	MHz
$G_{flat}$	gain flatness	$P_{L(AV)} = 4\text{ W}$	-	0.2	-	dB
$\Delta G/\Delta T$	gain variation with temperature	$f = 1960\text{ MHz}$	-	0.03	-	dB/ $^{\circ}\text{C}$
$ s_{12} ^2$	isolation	between sections A and B; $P_{L(AV)} = 4\text{ W}$ ; $f = 1960\text{ MHz}$	-	27.8	-	dB
K	Rollett stability factor	$T = -40\text{ }^{\circ}\text{C}$ ; $f = 0.1\text{ GHz}$ to $3\text{ GHz}$	-	>1	-	





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Fig 4. Electrical schematic

8.1 Possible circuit topologies

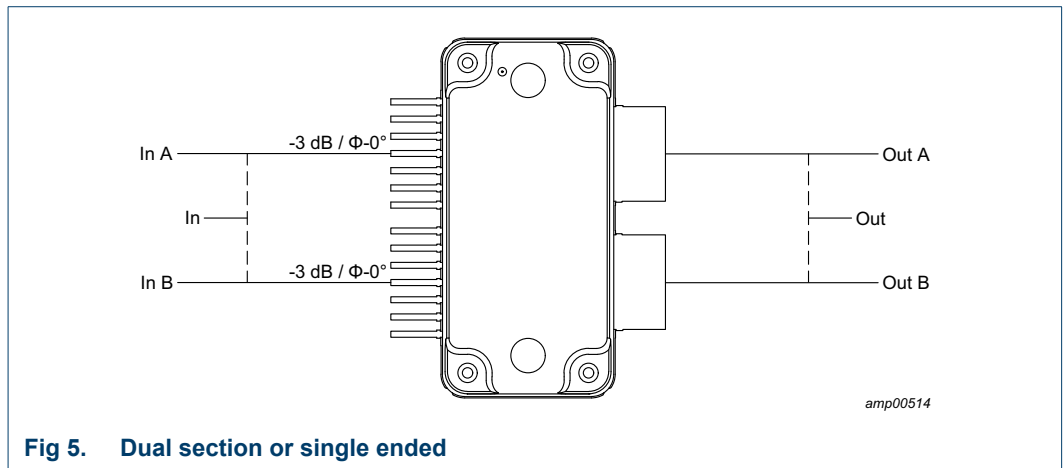


Fig 5. Dual section or single ended

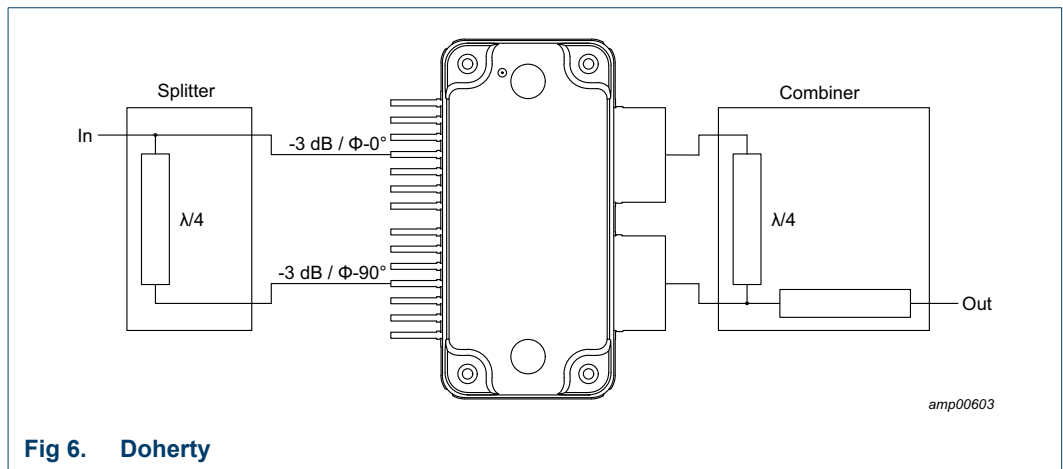


Fig 6. Doherty

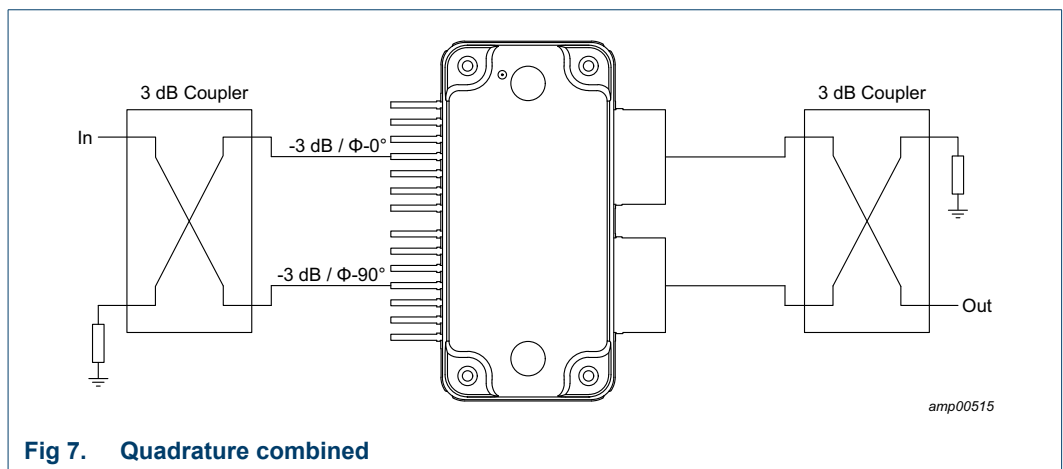
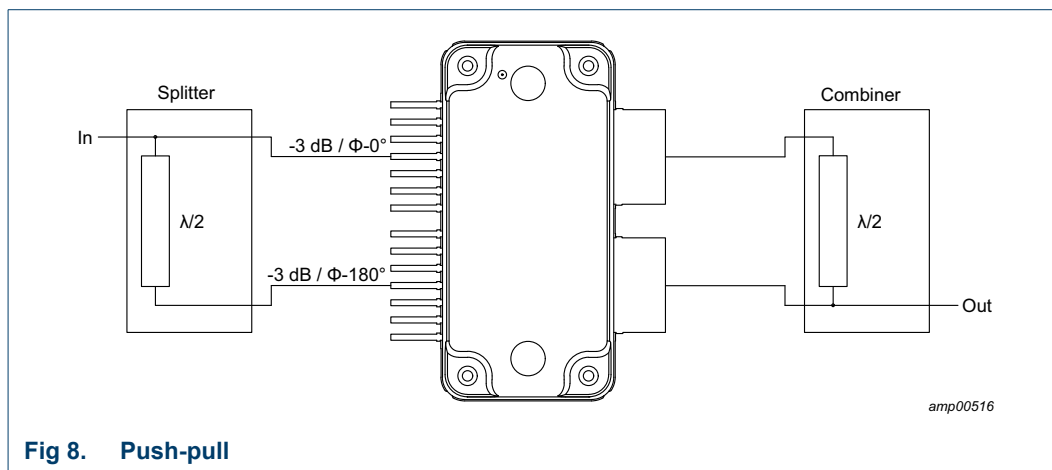


Fig 7. Quadrature combined





### 8.2 Ruggedness in class-AB operation

The BLM7G1822S-40PB and BLM7G1822S-40PBG are capable of withstanding a load mismatch corresponding to VSWR = 10 : 1 through all phases under the following conditions:  $V_{DS} = 28\text{ V}$ ;  $I_{Dq1} = 80\text{ mA}$ ;  $I_{Dq2} = 240\text{ mA}$ ;  $P_1 = 16\text{ dBm (CW)}$ ;  $f = 2140\text{ MHz}$ .

### 8.3 Impedance information

**Table 9. Typical impedance tuned for maximum output power**

Measured load-pull data per section; test signal: pulsed CW;  $T_{case} = 25\text{ °C}$ ;  $V_{DS} = 28\text{ V}$ ;  $I_{Dq1} = 40\text{ mA}$ ;  $I_{Dq2} = 110\text{ mA}$ ;  $t_p = 100\text{ }\mu\text{s}$ ;  $\delta = 10\text{ %}$ ;  $Z_S = 50\text{ }\Omega$ . Typical values unless otherwise specified.

f (MHz)	at 1dB gain compression point					at 3dB gain compression point				
	Z <sub>L</sub> (Ω)	G <sub>p(max)</sub> (dB)	P <sub>L</sub> (dBm)	η <sub>add</sub> (%)	AM-PM conversion (deg)	Z <sub>L</sub> (Ω)	G <sub>p(max)</sub> (dB)	P <sub>L</sub> (dBm)	η <sub>add</sub> (%)	AM-PM conversion (deg)
<b>BLM7G1822S-40PB</b>										
1805	7.2 - j9.2	32.2	45	48.3	1.7	7.7 - j10.6	32.2	45.8	51	0.3
1842.5	7.2 - j9.2	32.3	45	49	2.3	7.8 - j10.6	32.3	45.8	51.8	0.9
1880	7.2 - j9.2	32.4	44.9	49.9	2.7	7.7 - j10.6	32.3	45.8	52.1	1.4
1930	7.3 - j9.2	32.5	44.9	50.5	1.8	6.7 - j10.8	32	45.7	48.8	0.3
1960	7.2 - j9.2	32.7	45	50.8	3.3	7.8 - j10.6	32.6	45.7	51.4	1.6
1990	7.2 - j9.2	32.8	45	51	3.3	6.3 - j9.5	32.5	45.7	49.1	0.5
2110	6.3 - j9.5	33	45.2	50.7	2.2	6.3 - j9.5	33	45.8	51.4	-4
2140	6.3 - j9.5	33	45.1	50.7	1.2	6.3 - j9.5	33	45.7	51.8	-5.9
2170	6.3 - j9.5	33	45.1	51.3	0.3	6.8 - j10.8	32.8	45.6	50.1	-7.5
<b>BLM7G1822S-40PBG</b>										
1805	8.7 - j11.9	32.1	45	50.8	-0.2	8.0 - j13.4	31.8	45.8	50.3	-1.7
1842.5	8.7 - j11.8	32.3	45	50.6	0.4	8.0 - j13.4	31.9	45.8	49.2	-1
1880	7.5 - j12.0	32.1	45	48.6	1.4	8.0 - j13.4	32.1	45.8	50	-0.3
1930	8.0 - j13.4	32.1	45	48.7	1.6	8.0 - j13.4	32.1	45.8	50.3	-0.6
1960	7.5 - j12.1	32.5	45	49.5	1.7	8.0 - j13.4	32.4	45.7	49.9	-0.4
1990	8.0 - j13.3	32.6	45	49	2.4	7.7 - j15.2	32.2	45.7	47	-0.7

**Table 9. Typical impedance tuned for maximum output power ...continued**

Measured load-pull data per section; test signal: pulsed CW;  $T_{case} = 25\text{ }^\circ\text{C}$ ;  $V_{DS} = 28\text{ V}$ ;  $I_{Dq1} = 40\text{ mA}$ ;  $I_{Dq2} = 110\text{ mA}$ ;  $t_p = 100\text{ }\mu\text{s}$ ;  $\delta = 10\text{ }\%$ ;  $Z_S = 50\text{ }\Omega$ . Typical values unless otherwise specified.

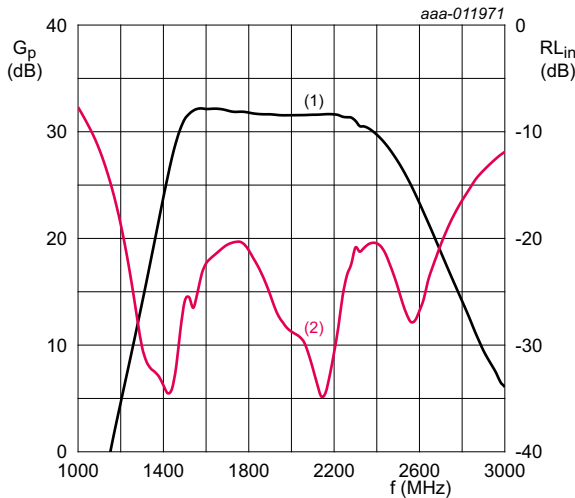
f	at 1dB gain compression point					at 3dB gain compression point				
	Z <sub>L</sub>	G <sub>p(max)</sub>	P <sub>L</sub>	$\eta_{add}$	AM-PM conversion	Z <sub>L</sub>	G <sub>p(max)</sub>	P <sub>L</sub>	$\eta_{add}$	AM-PM conversion
(MHz)	( $\Omega$ )	(dB)	(dBm)	(%)	(deg)	( $\Omega$ )	(dB)	(dBm)	(%)	(deg)
2110	8.1 – j13.4	33	45.2	51	0.8	8.1 – j13.4	33	45.8	52.1	–6.1
2140	6.5 – j12.8	32.7	45.1	49.9	–0.8	6.5 – j12.8	32.7	45.7	50.8	–8.9
2170	7.0 – j14.1	32.4	45.1	48.3	–1.5	7.0 – j14.1	32.4	45.6	49.1	–10

**Table 10. Typical impedance tuned for maximum power added efficiency**

Measured load-pull data per section; test signal: pulsed CW;  $T_{case} = 25\text{ }^\circ\text{C}$ ;  $V_{DS} = 28\text{ V}$ ;  $I_{Dq1} = 40\text{ mA}$ ;  $I_{Dq2} = 110\text{ mA}$ ;  $t_p = 100\text{ }\mu\text{s}$ ;  $\delta = 10\text{ }\%$ ;  $Z_S = 50\text{ }\Omega$ . Typical values unless otherwise specified.

f	at 1dB gain compression point					at 3dB gain compression point				
	Z <sub>L</sub>	G <sub>p(max)</sub>	P <sub>L</sub>	$\eta_{add}$	AM-PM conversion	Z <sub>L</sub>	G <sub>p(max)</sub>	P <sub>L</sub>	$\eta_{add}$	AM-PM conversion
(MHz)	( $\Omega$ )	(dB)	(dBm)	(%)	(deg)	( $\Omega$ )	(dB)	(dBm)	(%)	(deg)
<b>BLM7G1822S-40PB</b>										
1805	18.0 – j7.9	33.4	43.1	57.8	–0.6	16.7 – j4.2	33.5	43.9	58.8	–4.9
1842.5	16.6 – j4.0	33.5	43	58	–1.1	16.2 – j5.6	33.4	44	58.5	–3
1880	14.2 – j5.6	33.4	43.6	57.9	0.4	12.2 – j4.6	33.4	44.5	58.4	–2.8
1930	11.6 – j3.4	33.5	43.4	57.5	–1.6	11.6 – j3.4	33.5	44.1	57.7	–4.3
1960	9.9 – j4.4	33.6	43.9	57.5	0.3	9.9 – j4.4	33.6	44.6	57.6	–2.3
1990	10.8 – j3.1	33.7	43.4	57.4	0.2	8.6 – j4.3	33.6	44.6	57	–3.1
2110	7.3 – j4.8	33.8	43.9	57.5	–0.2	7.3 – j4.8	33.8	44.6	56.4	–4.4
2140	7.3 – j4.8	33.8	43.9	57.5	–0.5	7.3 – j4.8	33.8	44.5	56.2	–5.4
2170	7.0 – j6.3	33.6	44.3	57.2	–0.3	7.0 – j6.3	33.6	44.9	56.5	–7
<b>BLM7G1822S-40PBG</b>										
1805	18.8 – j9.7	33	43.2	57.4	–2.4	14.8 – j8.7	33	44.6	58.1	–5.5
1842.5	16.9 – j6.3	33.2	43.2	57.4	–2.7	16.3 – j4.3	33.3	44.7	57.5	–7.4
1880	15.3 – j5.5	33.3	43.2	57.2	–1.9	12.7 – j7.1	33.2	44.5	57.3	–4.3
1930	12.8 – j7.3	33.2	43.7	56.7	–0.9	12.8 – j7.3	33.2	44.4	56.3	–3.4
1960	11.1 – j6.8	33.5	43.8	56.5	–1	11.1 – j6.8	33.5	44.5	56.1	–3.6
1990	9.6 – j6.5	33.5	43.7	56.3	–0.9	9.0 – j7.7	33.4	44.8	55.9	–3.4
2110	9.0 – j7.7	33.7	44	57.1	–0.4	7.6 – j8.0	33.6	44.7	56.1	–6.7
2140	8.1 – j6.7	33.6	43.5	56.9	–1.6	7.6 – j8.0	33.5	44.5	55.7	–7.7
2170	6.4 – j7.7	33.3	43.6	57.2	–3	8.6 – j9.0	33.3	44.8	55.8	–7.8

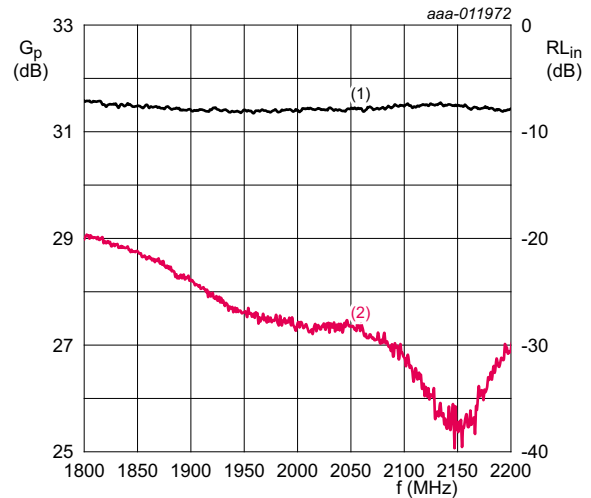
8.4 Graphs



$T_{case} = 25\text{ }^\circ\text{C}$ ;  $V_{DS} = 28\text{ V}$ ;  $I_{Dq1} = 40\text{ mA}$ ;  $I_{Dq2} = 120\text{ mA}$ ;  $P_L = 4\text{ W}$ . Per section.

- (1) magnitude of  $G_p$
- (2) magnitude of  $RL_{in}$

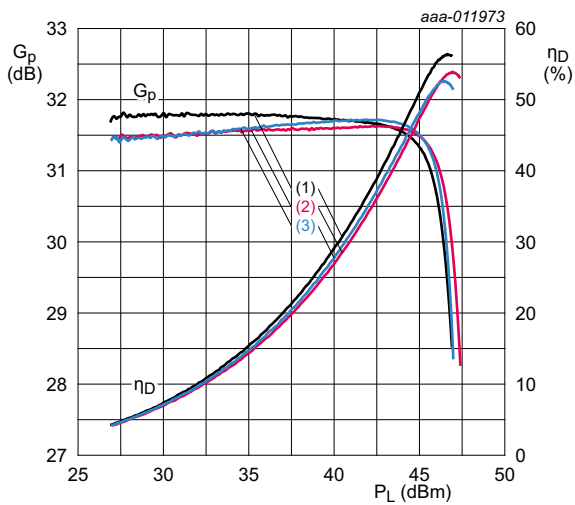
Fig 9. Wideband power gain and input return loss as function of frequency; typical values



$T_{case} = 25\text{ }^\circ\text{C}$ ;  $V_{DS} = 28\text{ V}$ ;  $I_{Dq1} = 40\text{ mA}$ ;  $I_{Dq2} = 120\text{ mA}$ ;  $P_L = 4\text{ W}$ . Per section.

- (1) magnitude of  $G_p$
- (2) magnitude of  $RL_{in}$

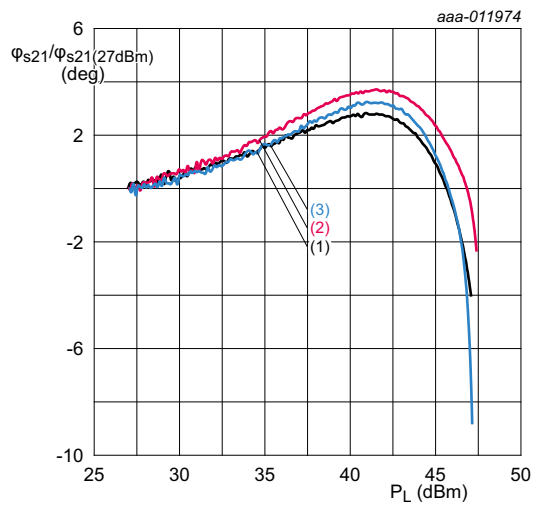
Fig 10. In-band power gain and input return loss as function of frequency; typical values



$T_{case} = 25\text{ }^\circ\text{C}$ ;  $V_{DS} = 28\text{ V}$ ;  $I_{Dq1} = 40\text{ mA}$ ;  $I_{Dq2} = 120\text{ mA}$ . Per section.

- (1)  $f = 1805\text{ MHz}$
- (2)  $f = 1960\text{ MHz}$
- (3)  $f = 2170\text{ MHz}$

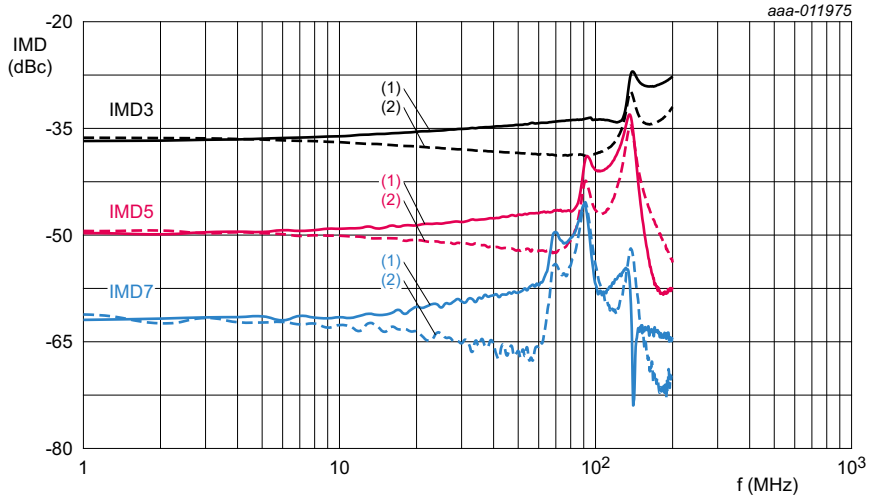
Fig 11. Power gain and drain efficiency as function of output power; typical values



$T_{case} = 25\text{ }^\circ\text{C}$ ;  $V_{DS} = 28\text{ V}$ ;  $I_{Dq1} = 40\text{ mA}$ ;  $I_{Dq2} = 120\text{ mA}$ . Per section.

- (1)  $f = 1805\text{ MHz}$
- (2)  $f = 1960\text{ MHz}$
- (3)  $f = 2170\text{ MHz}$

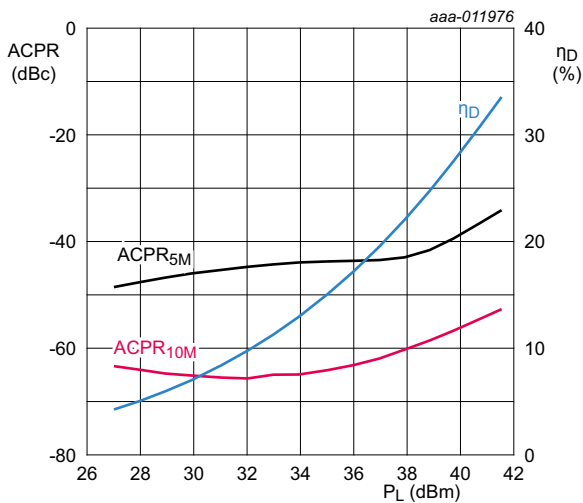
Fig 12. 27 dBm normalized phase response as a function of output power; typical values



$T_{case} = 25\text{ }^{\circ}\text{C}$ ;  $V_{DS} = 28\text{ V}$ ;  $I_{Dq1} = 40\text{ mA}$ ;  $I_{Dq2} = 120\text{ mA}$ ;  $f = 1960\text{ MHz}$ ; 2-tone CW;  $P_{L(AV)} = 4\text{ W}$ . Per section.

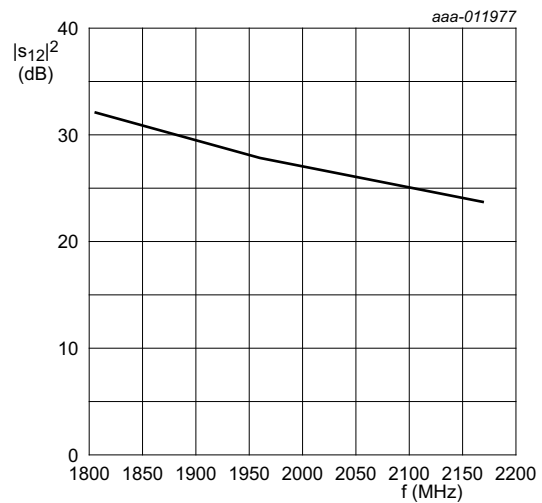
- (1) IMD low
- (2) IMD high

**Fig 13. Intermodulation distortion as a function of tone spacing; typical values**



$T_{case} = 25\text{ }^{\circ}\text{C}$ ;  $V_{DS} = 28\text{ V}$ ;  $I_{Dq1} = 40\text{ mA}$ ;  $I_{Dq2} = 120\text{ mA}$ ;  $f = 1960\text{ MHz}$ ; 1-carrier W-CDMA; test model 1; PAR = 7.2 dB at 0.01 % probability on CCDF. Per section.

**Fig 14. Adjacent channel power ratio and drain efficiency as function of output power; typical values**



$T_{case} = 25\text{ }^{\circ}\text{C}$ ;  $V_{DS} = 28\text{ V}$ ;  $I_{Dq1} = 40\text{ mA}$ ;  $I_{Dq2} = 120\text{ mA}$ . Per section.

**Fig 15. Isolation as a function of frequency; typical values**

9. Package outline

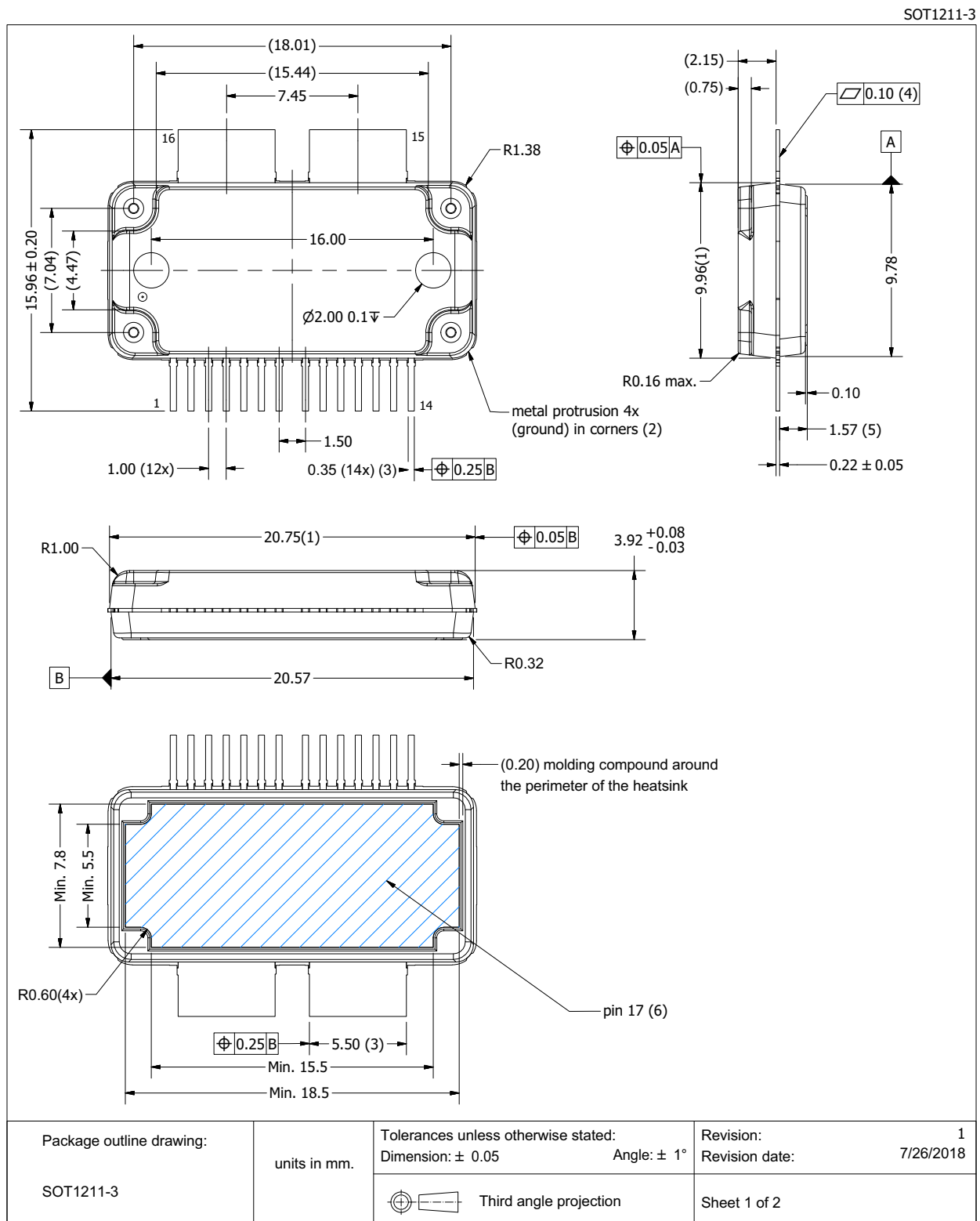
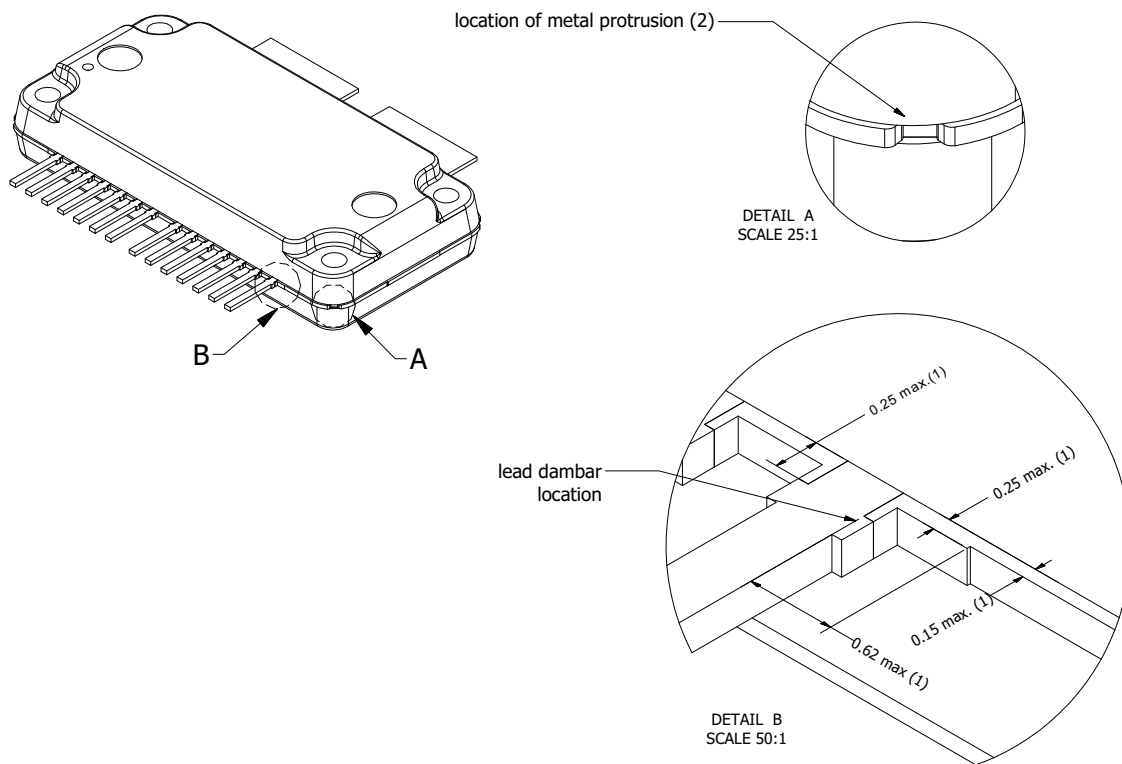


Fig 16. Package outline SOT1211-3 (sheet 1 of 2)

SOT1211-3

Drawing Notes	
Items	Description
(1)	Dimensions are excluding mold protrusion. Areas located adjacent to the leads have a maximum mold protrusion of 0.25 mm (per side) and 0.62 mm max. in length. In between the 14 leads the protrusion is 0.25 mm. max. At all other areas the mold protrusion is maximum 0.15 mm per side. See also detail B.
(2)	The metal protrusion (tie bars) in the corner will not stick out of the molding compound protrusions (detail A).
(3)	The lead dambar (metal) protrusions are not included. Add 0.14 mm max to the total lead dimension at the dambar location.
(4)	The lead coplanarity over all leads is 0.1 mm maximum.
(5)	Dimension is measured 0.5 mm from the edge of the top package body.
(6)	The hatched area indicates the exposed metal heatsink.
(7)	The leads and exposed heatsink are plated with matte Tin (Sn).



Package outline drawing:	units in mm.	Tolerances unless otherwise stated: Dimension: $\pm 0.05$ Angle: $\pm 1^\circ$	Revision: 1 Revision date: 7/26/2018
SOT1211-3		Third angle projection	Sheet 2 of 2

Fig 17. Package outline SOT1211-3 (sheet 2 of 2)

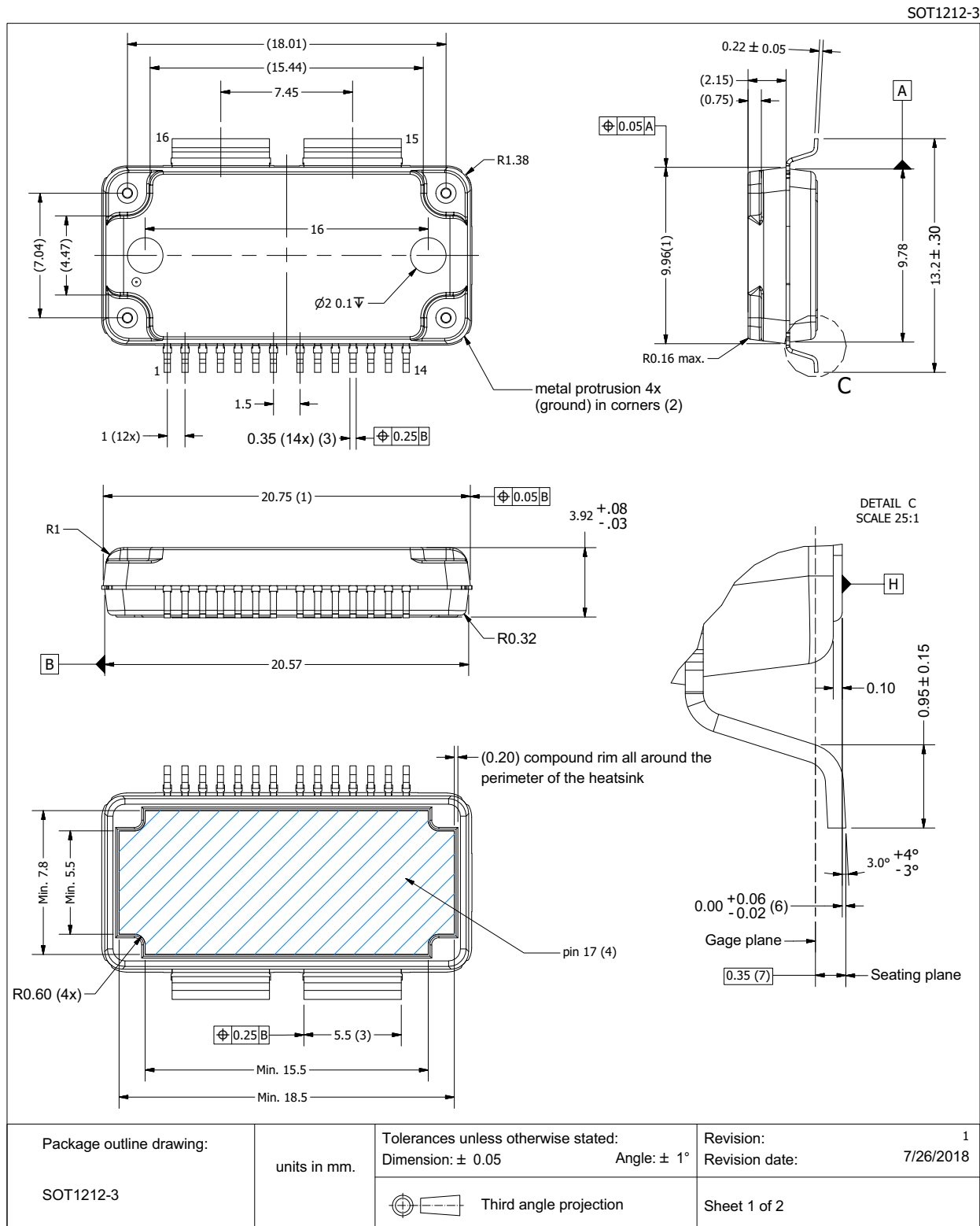
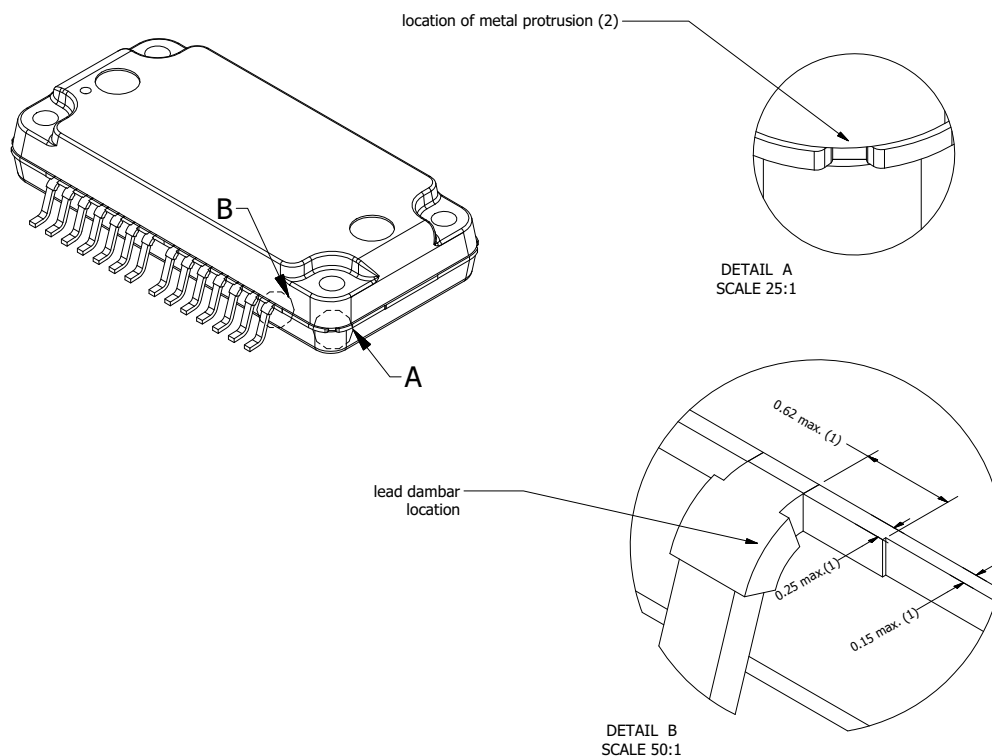


Fig 18. Package outline SOT1212-3 (sheet 1 of 2)

SOT1212-3

Drawing Notes	
Items	Description
(1)	Dimensions are excluding mold protrusion. Areas located adjacent to the leads have a maximum mold protrusion of 0.25 mm (per side) and 0.62 mm max. in length. In between the 14 leads the protrusion is 0.25 mm max. At all other areas the mold protrusion is maximum 0.15 mm per side. See also detail B.
(2)	The metal protrusion (tie bars) in the corner will not stick out of the molding compound protrusions (detail A).
(3)	The lead dambar (metal) protrusions are not included. Add 0.14 mm max to the total lead dimension at the dambar location.
(4)	The hatched area indicated the exposed heatsink.
(5)	The leads and exposed heatsink are plated with matte Tin (Sn).
(6)	Dimension is measured with respect to the bottom of the heatsink Datum H. Positive value means that the bottom of the heatsink is higher than the bottom of the lead.
(7)	Gage plane (foot length) to be measured from the seating plane.



Package outline drawing:	units in mm.	Tolerances unless otherwise stated: Dimension: $\pm 0.05$ Angle: $\pm 1^\circ$	Revision: 1 Revision date: 7/26/2018
SOT1212-3		Third angle projection	Sheet 2 of 2

Fig 19. Package outline SOT1212-3 (sheet 2 of 2)



## 10. Handling information

**CAUTION**



This device is sensitive to ElectroStatic Discharge (ESD). Observe precautions for handling electrostatic sensitive devices.

Such precautions are described in the *ANSI/ESD S20.20*, *IEC/ST 61340-5*, *JESD625-A* or equivalent standards.

**Table 11. ESD sensitivity**

ESD model	Class
Charged Device Model (CDM); According to ANSI/ESDA/JEDEC standard JS-002	C1 <a href="#">[1]</a>
Human Body Model (HBM); According to ANSI/ESDA/JEDEC standard JS-001	1A <a href="#">[2]</a>

[1] CDM classification C1 is granted to any part that passes after exposure to an ESD pulse of 250 V.

[2] HBM classification 1A is granted to any part that passes after exposure to an ESD pulse of 250 V.

## 11. Abbreviations

**Table 12. Abbreviations**

Acronym	Description
AM	Amplitude Modulation
3GPP	3rd Generation Partnership Project
CCDF	Complementary Cumulative Distribution Function
CW	Continuous Wave
DPCH	Dedicated Physical CHannel
ESD	ElectroStatic Discharge
GEN7	Seventh Generation
LDMOS	Laterally Diffused Metal Oxide Semiconductor
MMIC	Monolithic Microwave Integrated Circuit
MTF	Median Time to Failure
PAR	Peak-to-Average Ratio
PM	Phase Modulation
RoHS	Restriction of Hazardous Substances
VSWR	Voltage Standing-Wave Ratio
W-CDMA	Wideband Code Division Multiple Access

## 12. Revision history

Table 13. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BLM7G1822S-40PB_S-40PBG v.7	20180928	Product data sheet		BLM7G1822S-40PB_S-40PBG v.6
Modifications	<ul style="list-style-type: none"> <li><a href="#">Section 9 on page 13</a>: package outline versions updated</li> </ul>			
BLM7G1822S-40PB_S-40PBG v.6	20180209	Product data sheet		BLM7G1822S-40PB_S-40PBG v.5
BLM7G1822S-40PB_S-40PBG v.5	20160224	Product data sheet		BLM7G1822S-40PB_S-40PBG v.4
BLM7G1822S-40PB_S-40PBG v.4	20150901	Product data sheet		BLM7G1822S-40PB_S-40PBG v.3
BLM7G1822S-40PB_S-40PBG v.3	20150701	Product data sheet	-	BLM7G1822S-40PB_S-40PBG v.2
BLM7G1822S-40PB_S-40PBG v.2	20140324	Product data sheet	-	BLM7G1822S-40PB_S-40PBG v.1
BLM7G1822S-40PB_S-40PBG v.1	20131009	Objective data sheet	-	-

## 13. Legal information

### 13.1 Data sheet status

Document status <sup>[1][2]</sup>	Product status <sup>[3]</sup>	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.ampleon.com>.

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