

Preliminary
GaN Power Transistors
D080CCNH



Product Features

- 9800~10300MHz
- 50 W CW Saturated Power @ 40V
- 37% Drain Efficiency @ Psat
- 50 Ohm Internally Matched

Applications

- Weather Radar System
- Marine Radar System

GaN



Description

The D080CCNH is an integrated GaN power amplifier designed for applications in X-Band military and commercial radar systems covering 9800~10300 MHz. The D080CCNH uses GaN HEMT technology, which provides high breakdown voltage, wide bandwidth, and high efficiency.

Typical Performance @ $V_{DS} = +40V$, $T_c = 25^\circ C$, 50Ω

Frequency [MHz]	CW Power*1				
	Signal Type	Input Power [dBm]	Output Power [dBm]	Large Signal Gain [dB]	Drain Efficiency [%]
9800	CW (continuous wave)	40	47.2	7.2	37.3
9900		40	47.2	7.2	38.3
10000		40	47.0	7.0	37.5
10100		40	47.0	7.0	37.5
10200		40	47.2	7.2	37.8
10300		40	47.0	7.0	37.2

Note

*1 Measured on the D080CCNH test board, under CW (continuous wave) conditions.

Custom design available upon request

Absolute Maximum Ratings (not simultaneous)

Rating	Symbol	Value	Unit	Condition
Drain to Source Voltage	V_{DSS}	110	V	$T_c=25^{\circ}\text{C}$
Gate to Source Voltage	V_{GS}	-10, +0	V	$T_c=25^{\circ}\text{C}$
Operating Voltage	V_{DD}	42	V_{DC}	
Maximum Forward Gate Current	I_{GMAX}	14.4	mA	$T_c=25^{\circ}\text{C}$
Storage Temperature	T_{STG}	-50, +125	$^{\circ}\text{C}$	
Case Operating Temperature	T_C	-20, +45	$^{\circ}\text{C}$	
Operating Junction Temperature ^{*1}	T_J	225	$^{\circ}\text{C}$	
Soldering Temperature ^{*2}	T_S	245	$^{\circ}\text{C}$	

Note

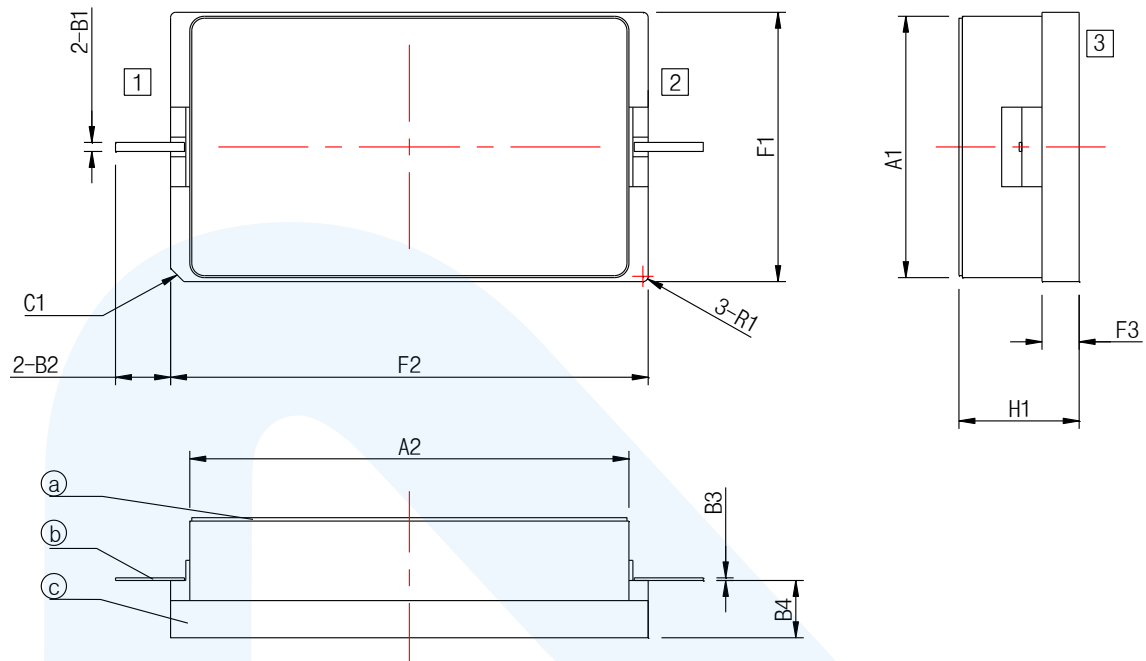
*1 Continuous use at maximum temperature will affect MTTF.

*2 Refer to the Application Note (AN-002) on soldering - "Solder Condition for RFHIC's GaN Device"

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Package Dimensions (Type: FFX_1810BBA-2L)



Pin Description	
Pin No	Function
1	Gate
2	Drain
3	Source

- (a)- Lid
- (b)- Lead Frame
- (c)- Flange

Dim.	INCH			MILLIMETER		
	MIN	TYP	MAX	MIN	TYP	MAX
A1	.380	.388	.396	9.66	9.86	10.06
A2	.644	.652	.659	16.35	16.55	16.75
B1	.008	.013	.019	0.21	0.34	0.47
B2	.079	.082	.084	2.02	2.07	2.12
B3		.004			0.10	
B4	.079	.085	.091	2.01	2.16	2.31
C1 (Chamfer)	.013	.020	.026	0.35	0.5	0.65
F1	.392	.400	.408	9.96	10.16	10.36
F2	.701	.709	.717	17.8	18.0	18.2
F3	.047	.055	.063	1.20	1.4	1.60
H1		.178	.205		4.53	5.2
R1 (Radius)	.002	.008	.014	0.05	0.2	0.35

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Revision History

Part Number	Release Date	Version	Description	Data Sheet Status
D080CCNH	Aug, 2026	0.1	Initial release of datasheet	Preliminary



Certification

This product is manufactured by a company that is certified for the AS9100D quality management system.

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