

Preliminary
GaN Power Transistors
D001CCNH



Product Features

- 9200~10000MHz
- 70 W Saturated Power @ 50V
- 40% Drain Efficiency @ Psat
- 50 Ohm Internally Matched

Applications

- Weather Radar System
- Marine Radar System



Description

The D001CCNH is a integrated GaN power amplifier designed for applications in X-Band military and commercial Radar Systems covered 9200~10000 MHz. The D001CCNH uses GaN HEMT technology which provides high breakdown voltage, wide bandwidth, and high efficiency.

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

Frequency [MHz]	Pulsed Power ^{*1}				
	Signal Type	Input Power [dBm]	Output Power [dBm]	Large Signal Gain [dB]	Drain Efficiency [%]
9200	Pulse	41	48.75	7.8	39.9
9400		41	48.57	7.6	40.9
9600		41	49.13	8.1	42.2
9800		41	49.01	8	41.5
10000		41	48.82	7.8	43.8

Note

^{*1} Measured on the D001CCNH test board, under Pulse Width 100usec and Duty Cycle 10%.

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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}	52	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, +65	$^{\circ}\text{C}$	
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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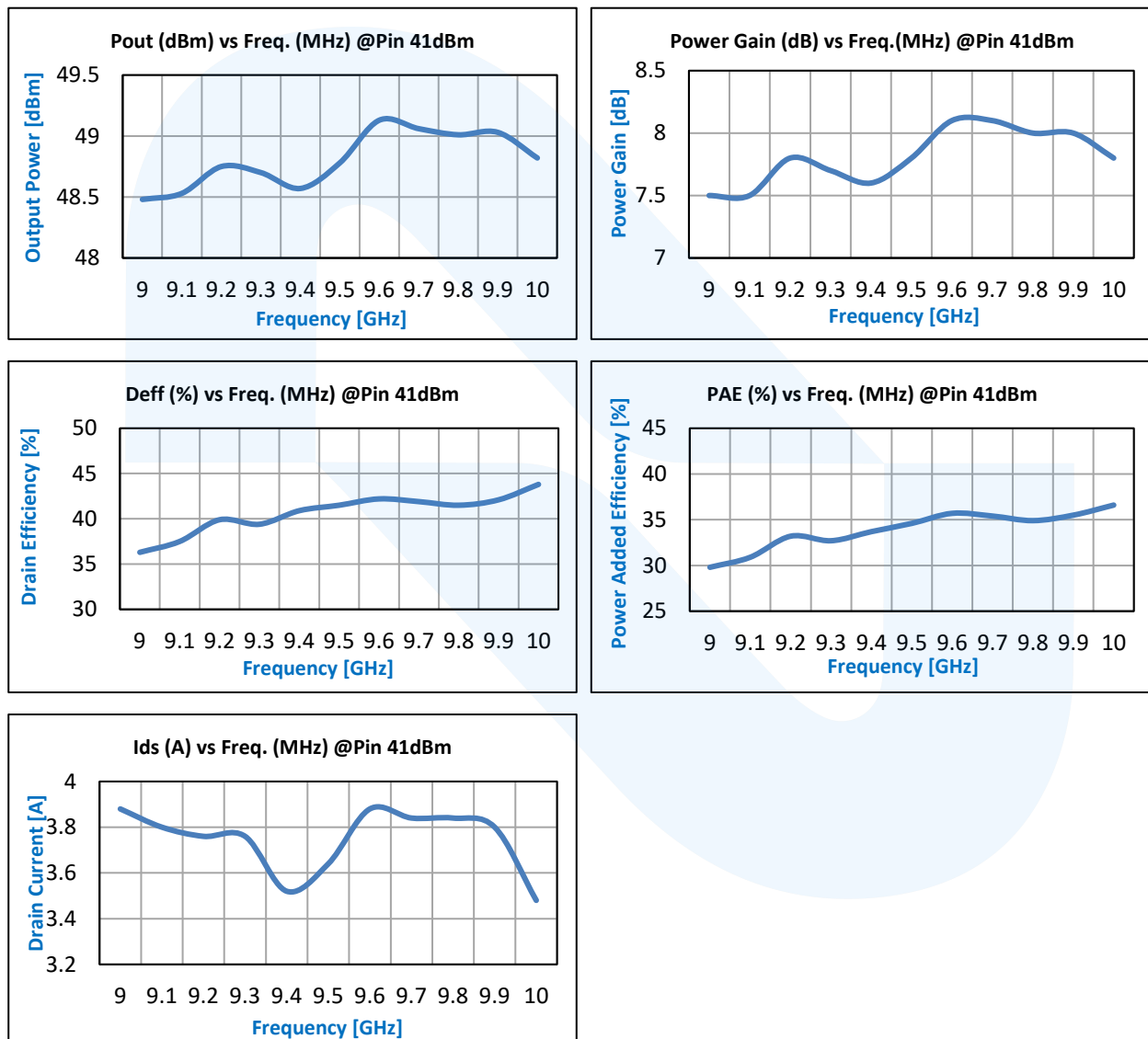
Typical Pulsed Signal Performance

* Test Conditions

V_{ds}: 50 V, I_{dq}: 400 mA, V_{gs}(Typ.): -2.43 V, Pulse Width: 100 usec, Duty Cycle: 10 %,

Forced Air Cooling, Ambient Temperature: 25°C. Measured in the D001CCNH_EVB test board.

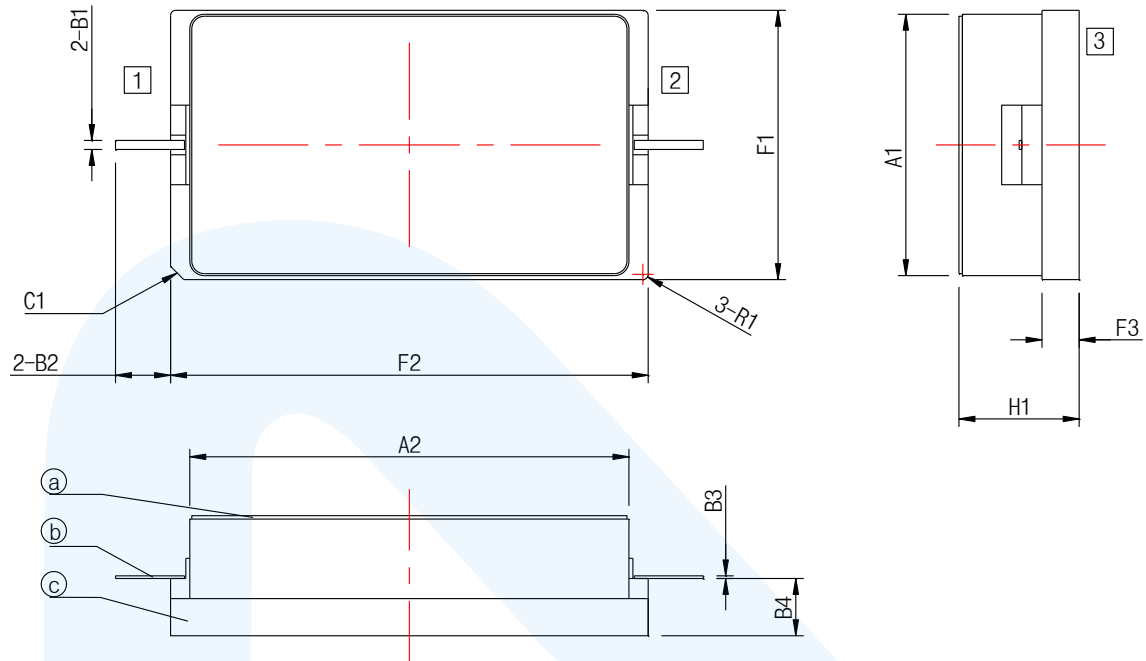
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Package Dimensions (Type: FFX_1810BBA-2L)



Pin Description	
Pin No	Function
1	Gate
2	Drain
3	Source

- Ⓐ- Lid
- Ⓑ- Lead Frame
- Ⓒ- 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
D001CCNH	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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