

Preliminary
GaN Power Transistors
D001CCNH



Product Features

- 9200~10000MHz
- 70 W Saturated Power @ 40V
- 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 @ $V_{DS} = +40V$, $T_c = 25^\circ C$, 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%.

Preliminary
GaN Power Transistors
D001CCNH



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, +75	$^{\circ}\text{C}$	30 seconds
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"

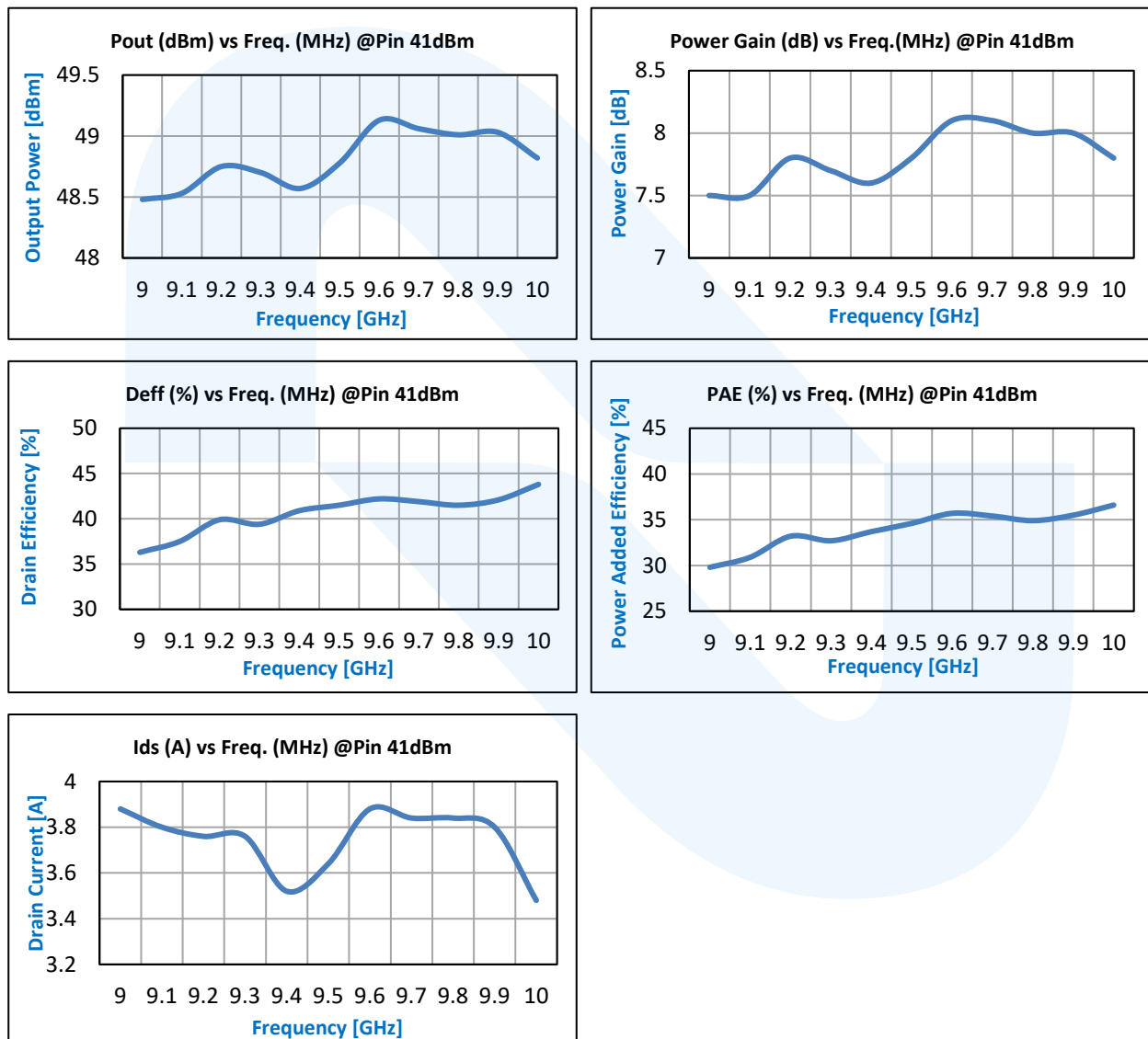
Typical Pulsed Signal Performance

* Test Conditions

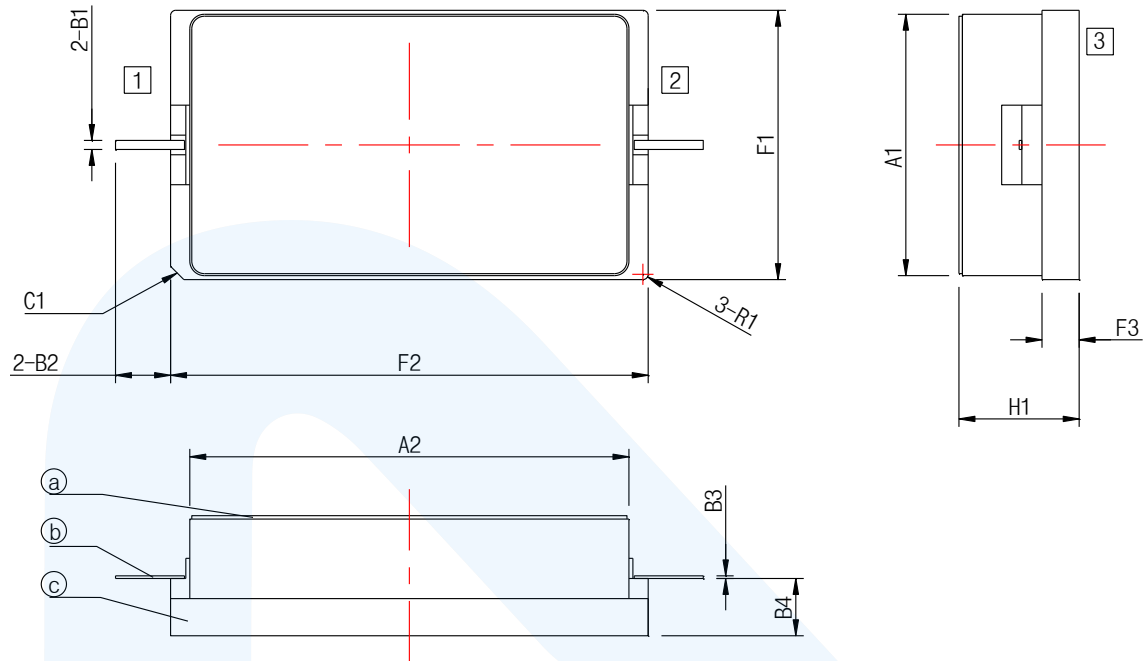
V_{ds}: 40 V, I_{dq}: 400 mA, V_{gs}(Typ.): -2.43 V, Pulse Width: 100 usec, Duty Cycle: 10 %,

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

Provided solely for engineering evaluation – Does not constitute a revision of RFHIC's published datasheet limits.



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

Preliminary
GaN Power Transistors
D001CCNH



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.

RFHIC Corporation reserves the right to make changes to any products herein or to discontinue any product at any time without notice. While product specifications have been thoroughly examined for reliability, RFHIC Corporation strongly recommends buyers to verify that the information they are using is accurate before ordering. RFHIC Corporation does not assume any liability for the suitability of its products for any particular purpose, and disclaims any and all liability, including without limitation consequential or incidental damages. RFHIC products are not intended for use in life support equipment or application where malfunction of the product can be expected to result in personal injury or death. Buyer uses or sells such products for any such unintended or unauthorized application, buyer shall indemnify, protect, and hold RFHIC Corporation and its directors, officers, stockholders, employees, representatives and distributors harmless against any and all claims arising out of such unauthorized use. All sales inquiries and support should be directed to the local authorized geographic distributor for RFHIC Corporation. For customers in the US, please contact the US sales team through our website at <https://rfhic.com/rfhic-us/>. For all other inquiries, please contact our international sales team through our website portal at <https://rfhic.com/contact/>