

Preliminary
GaN Power Transistors
D025C8C



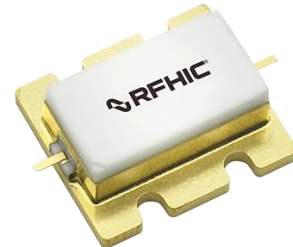
Product Features

- 5700~5900MHz
- 90 W CW Saturated Power @ 43V
- 51% Drain Efficiency @ Psat
- 50 Ohm Internally Matched

Applications

- Semiconductor equipment
- Microwave Heating and Drying
- Linear Accelerators
- Advanced materials processing
- Plasma systems
- Waste treatment systems
- Scientific RF systems
- Industrial RF power systems
- Radar Systems
- Satellite communication systems

GaN



Description

The D025C8C is an integrated GaN power amplifier designed for C-band RF power applications operating from 5700 to 5900 MHz. It utilizes GaN-on-SiC HEMT technology to provide high breakdown voltage, wide bandwidth, and high efficiency.

Typical Performance @ $V_{DS} = +43V$, $T_c = 25^\circ C$, 50Ω

Frequency [MHz]	CW Power*1				
	Signal Type	Input Power [dBm]	Output Power [dBm]	Large Signal Gain [dB]	Drain Efficiency [%]
5700	CW (continuous wave)	37	49.5	12.5	52.9
5800		37	49.7	12.7	51.6
5900		37	49.5	12.5	50.3

Note

*1 Measured on the D025C8C test board under CW (continuous wave) conditions with T_c maintained at $25^\circ C$ using water cooling.

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}	43	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, +85	$^{\circ}\text{C}$	
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.

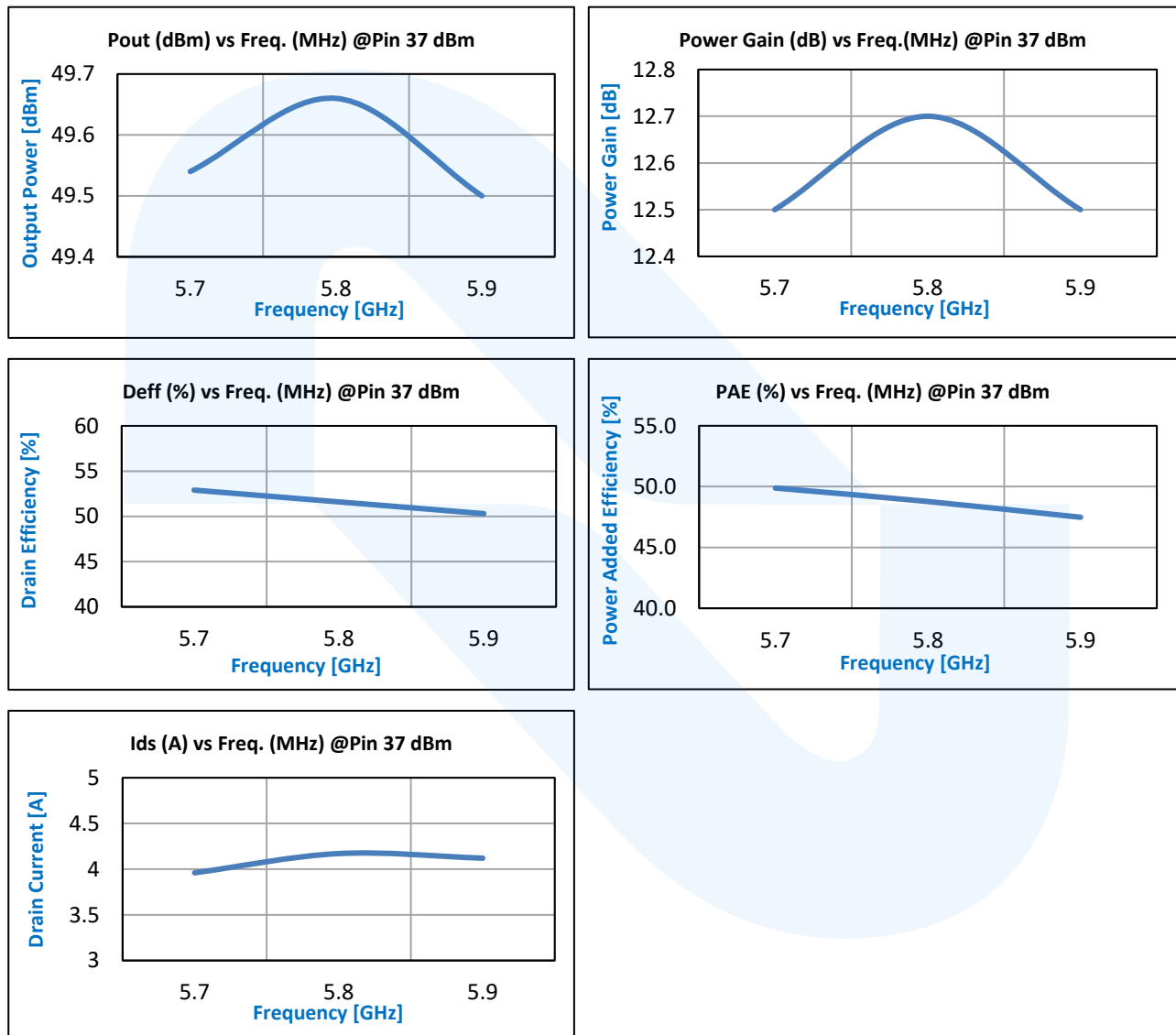
*2 Refer to the Application Note(AN-002) on soldering - "Solder Condition for RFHIC's GaN Device"

Typical CW Performance

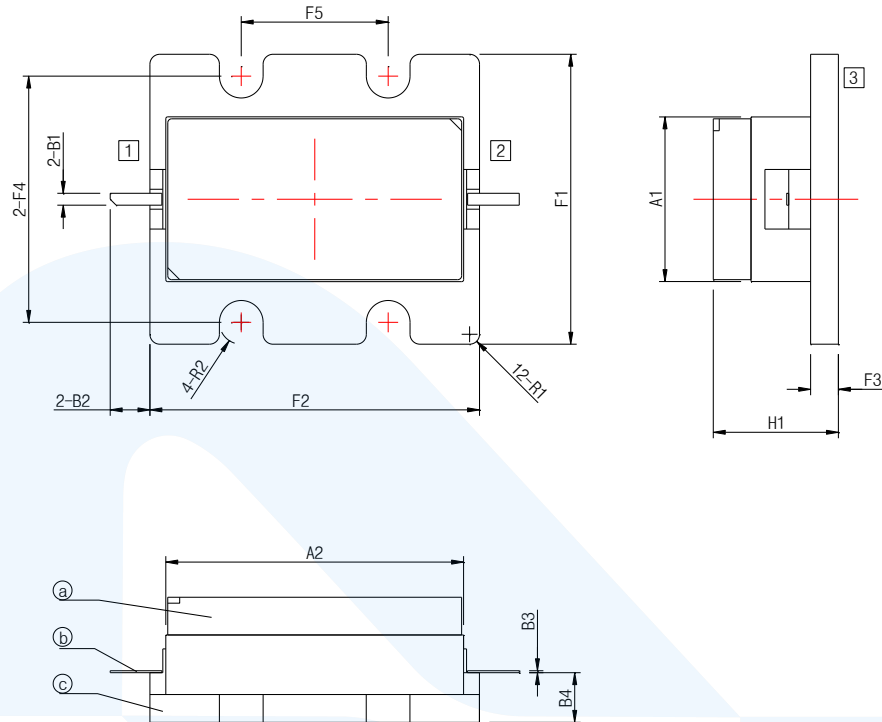
* Test Conditions

Test Conditions: $V_{ds} = 43$ V, $I_{dq} = 400$ mA, V_{gs} (typ.) = -2.53 V, CW mode, case temperature = 25°C (water-cooled), measured on the D025C8C_EVB test board.

Note: For engineering evaluation only. This information does not alter RFHIC's published datasheet limits.



Package Dimensions (Type: High_Power_FFX_PKG)



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	.319	.327	.335	8.1	8.3	8.5
A2	.583	.591	.598	14.80	15.00	15.20
B1	.018	.024	.029	0.47	0.60	0.73
B2	.059	.079	.098	1.50	2.00	2.50
B3		.004			0.10	
B4	.092	.098	.104	2.35	2.50	2.65
F1	.567	.575	.583	14.4	14.6	14.8
F2	.646	.654	.661	16.4	16.6	16.8
F3	.047	.055	.063	1.20	1.4	1.60
F4	.480	.488	.496	12.2	12.4	12.6
F5	.283	.291	.299	7.2	7.4	7.6
H1		.248	.272		6.3	6.9
R1 (Radius)	.013	.020	.026	0.35	0.5	0.65
R2 (Radius)	.035	.043	.051	0.9	1.1	1.3

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Revision History

Part Number	Release Date	Version	Description	Data Sheet Status
D025C8C	Sep, 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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