

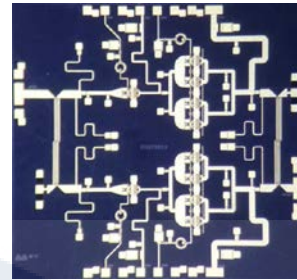


Product Features

- 27~30GHz frequency range
- 10W GaN HEMT MMIC
- 23% Efficiency at Psat
- up to 28V Supply voltage
- 50ohm matched input/output
- Die Size 3.4 x 3.4 x 0.1 mm

Applications

- SATCOM Terminals
- Point to point radios
- 5G System



Description

GM27030010D is a balanced two-stage monolithic GaN HEMT amplifier for SATCOM Terminals and Point to point digital radios, 5G System.

This MMIC is fully matched to 50 ohms with integrated DC blocking capacitors on RF ports.

This MMIC typically provides 17dB of Small signal gain and 40dBm of saturated output power, 23% of efficiency

Electrical Specifications

PARAMETER	UNIT	MIN	TYP	MAX	CONDITION
Frequency	GHz	27	-	30	-
Gain	dB	14	17	-	-
Power Gain	dB	-	14	-	CW
Input Return Loss	dB	-	-15	-	-
Output Return Loss	dB	-	-15	-	-
Peak Output Power	dBm	-	40	-	CW
Efficiency	%	-	23	-	CW
DC Current	mA	-	1000	-	Vdd = 28.0V

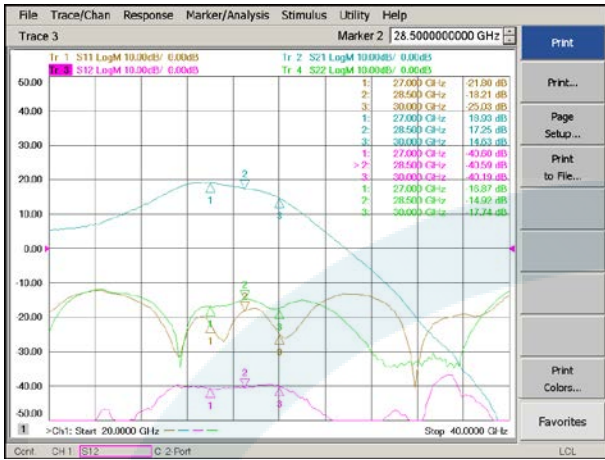
Note

1. Test conditions unless otherwise noted. T=25°C, Vdd=28V, 50Ω system

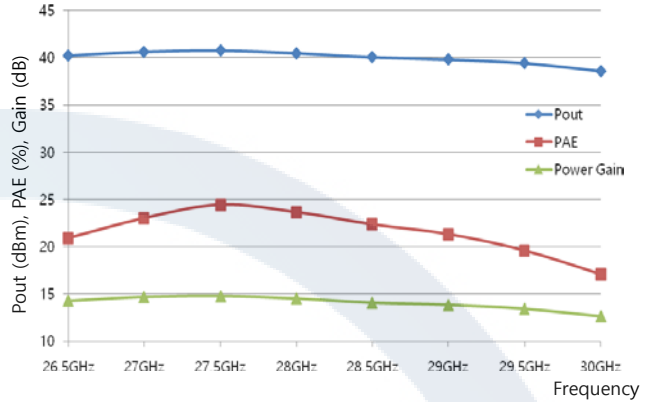
Absolute Maximum Ratings

PARAMETER	UNIT	MIN	TYP	MAX
Drain Voltage	VDC	-	-	35
Gate Voltage	VDC	-5.5	-	0
Operating Temperature	°C	-40	-	+85
Storage Temperature	°C	-55	-	+150
Mounting Temperature	°C	-	-	300

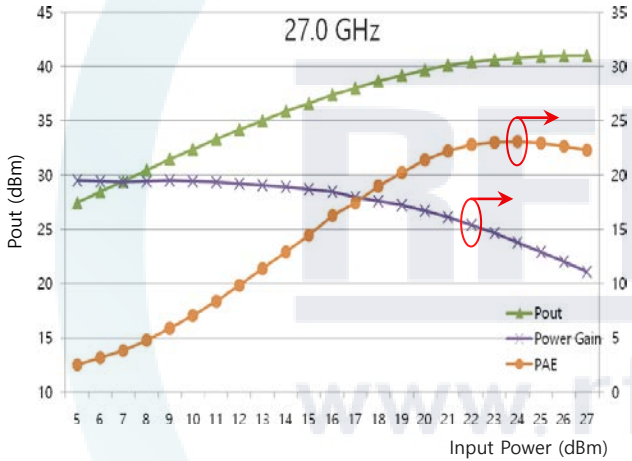
Typical Performance @ VDD=28V, IDS=1000mA, T=25°C, 50ohm System



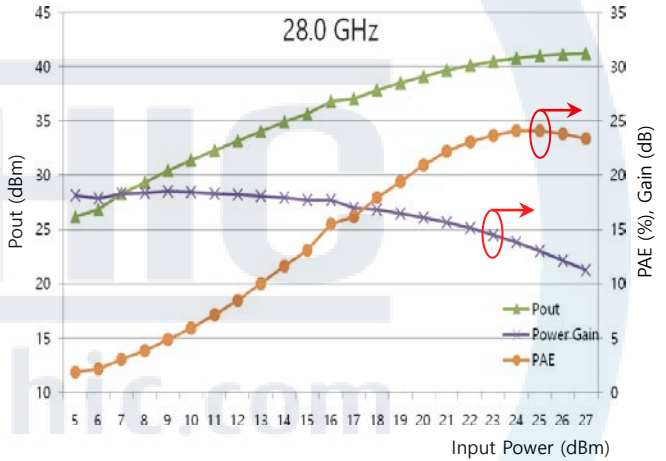
Pout, PAE, Gain vs. Frequency
26dBm input



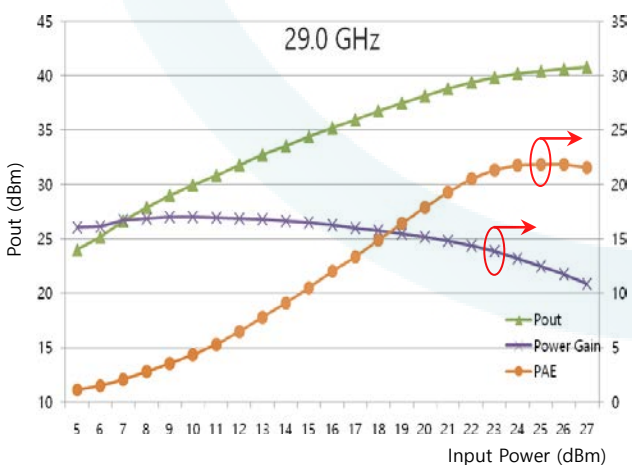
Pout, PAE, Gain vs. Input Power
27.0 GHz



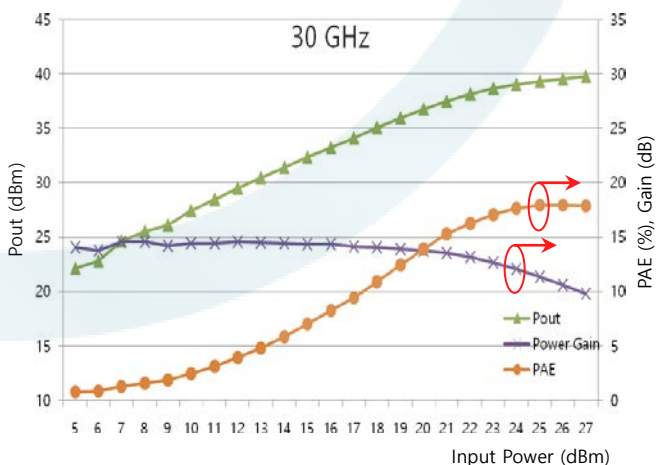
Pout, PAE, Gain vs. Input Power
28.0 GHz



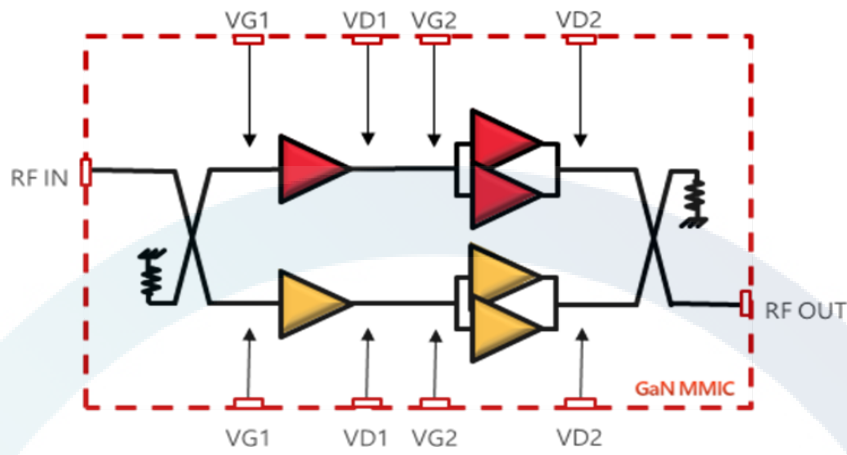
Pout, PAE, Gain vs. Input Power
29.0 GHz



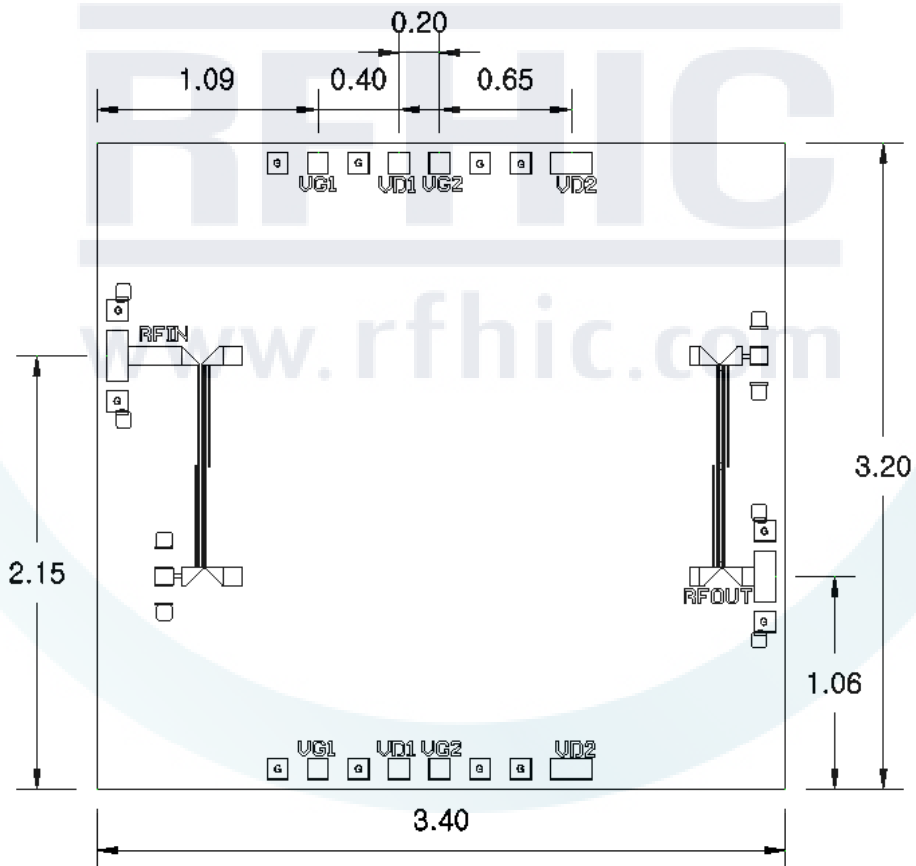
Pout, PAE, Gain vs. Input Power
30 GHz



Block Diagram



Die Dimensions (mm)

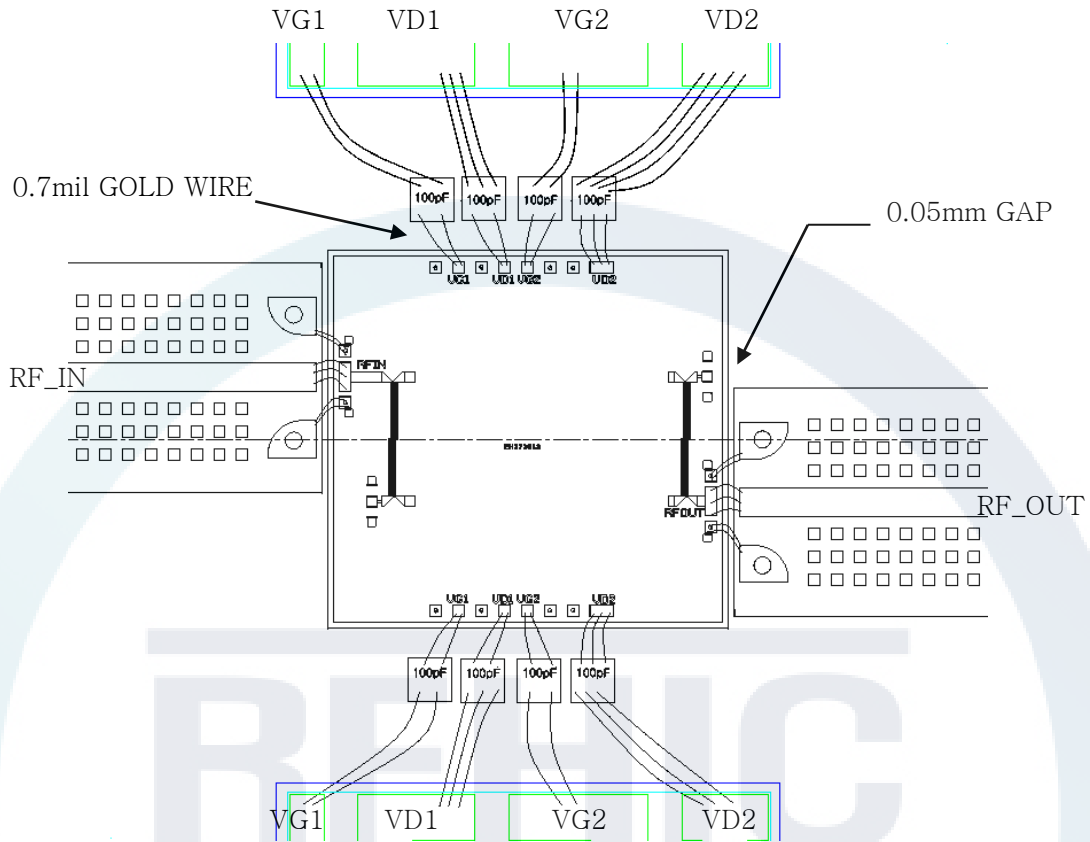


DC Bond pad : 100 x 100 um, VD2 Bond pad : 200 x 100 um

RF Bond pad : 250 x 100 um

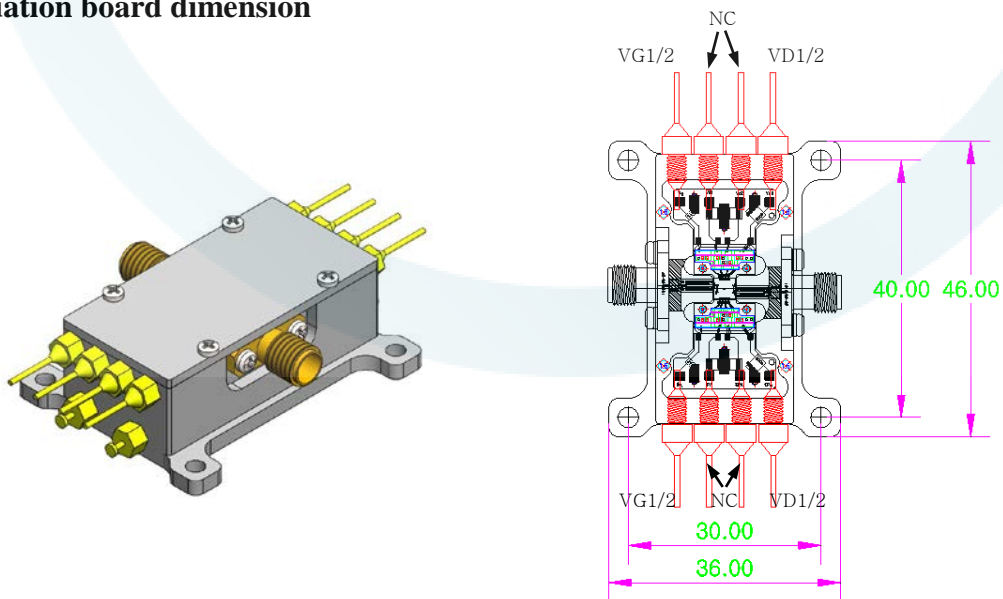
Die thickness : 0.10mm

Assembly Diagram



Ground is backside of die
 VG & VD connection must be biased from both sides.
 Recommended solder is AuSn(80/20) solder

Evaluation board dimension



Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
GM27030010D	2017.11.27	0.1	Initial Release	Preliminary



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