

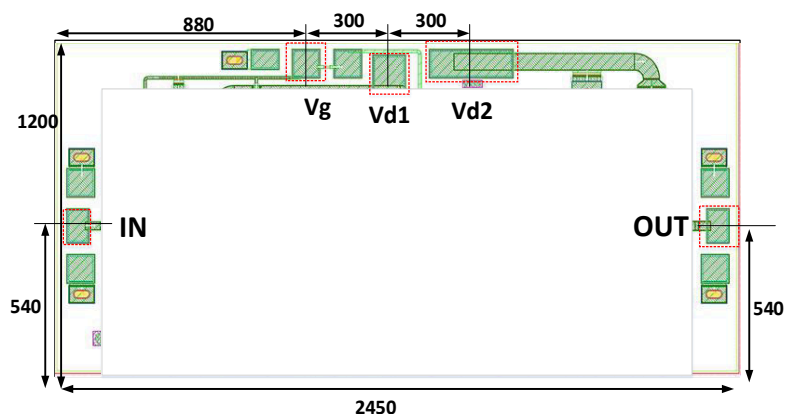
General Description

The MWG203 is an efficient GaAs PHEMT MMIC 1W Power Amplifier which operates between 27 and 30GHz, The amplifier provides 22dB of gain, and +31dBm of output power at 1 dB gain compression. while requiring 450 mA from a +6V supply.

Features

High gain: 22 dB @30GHz
 P1dB output power :+31dBm @35%;
 Output IP3: +37dBm
 Supply voltage: 6V@450mA
 Size: 2.5x1.2x0.1 mm

Functional Diagram(Typical bondpad : 80umx120um)



(Die Thickness: 100 um)

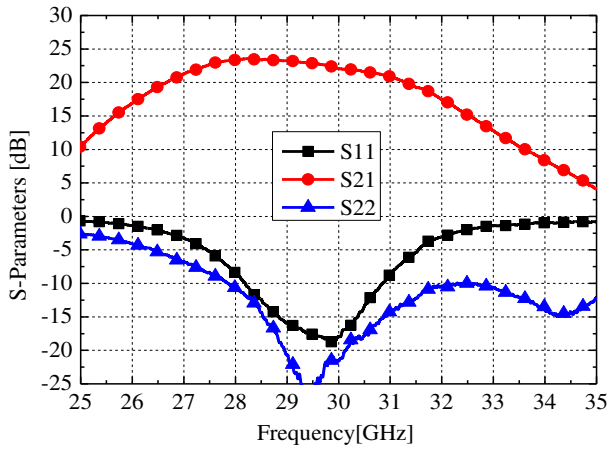
Electrical Specifications, $T_A = +25^{\circ}\text{C}$, $V_{d1} = V_{d2} = +6\text{V}$, $V_g = -0.8\text{V}$, $I_{d1} + I_{d2} = 450\text{mA}$ ^[1]

Parameter	Min	Typ	Max	Units
Bandwidth	27		30	GHz
Gain	21	22	23	dB
Input Return Loss		10		dB
Output Return Loss		15		dB
Output Power for 1dB Compression	30	31		dBm
Maximum output power	31	32		dBm
PAE	30%	35%		
OIP3		37		dBm
(@Vdd=6V) Supply Current		450		mA

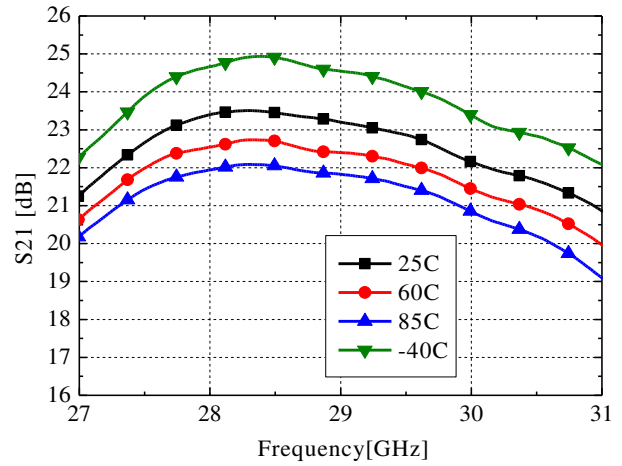
[1], Adjust the V_g form -1.0V to 0V, make $I_d=450\text{mA}$

Test Result

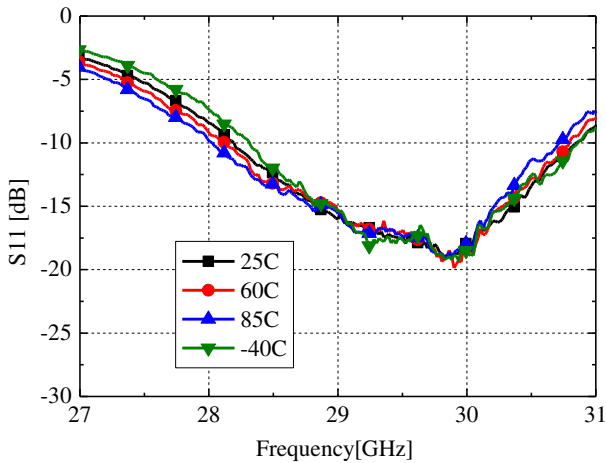
Frequency Response



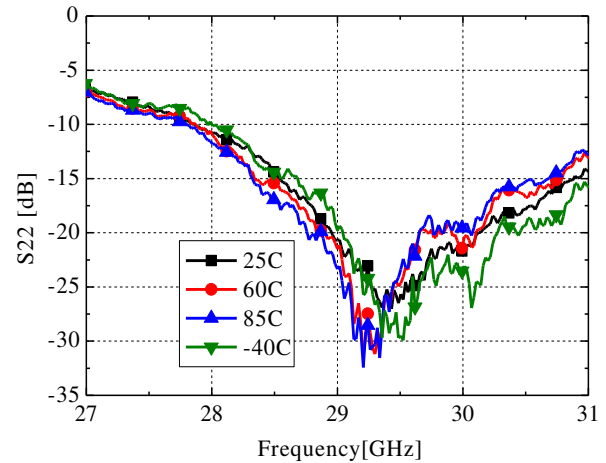
Gain VS. Temperature



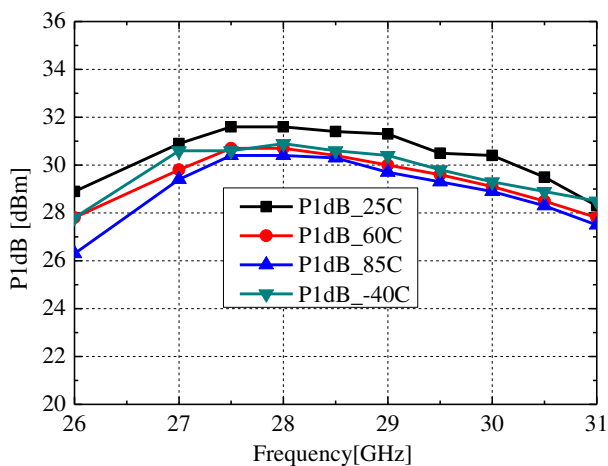
Input Return Loss VS. Temperature



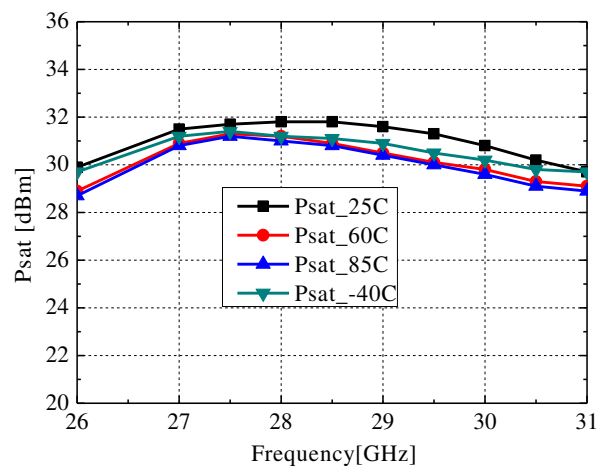
Output Return Loss VS. Temperature



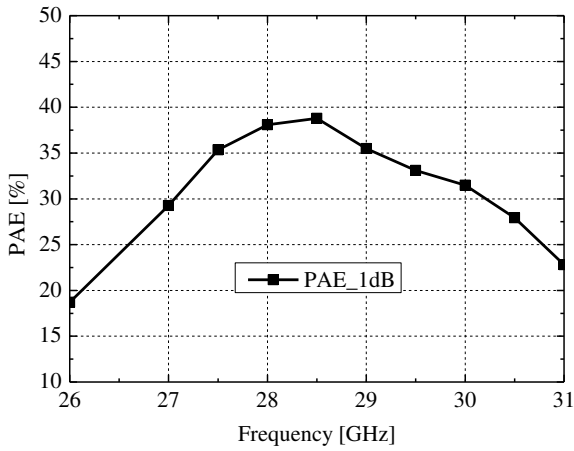
Output P1dB VS. Temperature



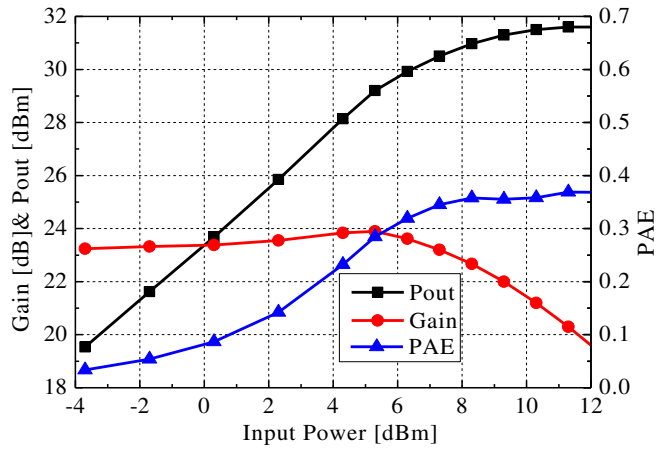
Psat VS. Temperature



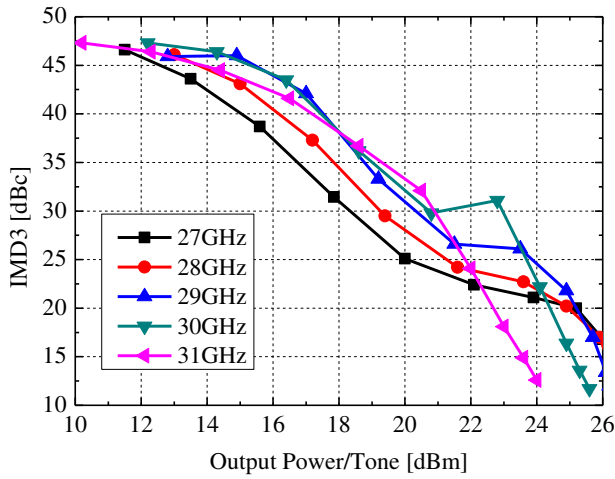
PAE VS. Frequency



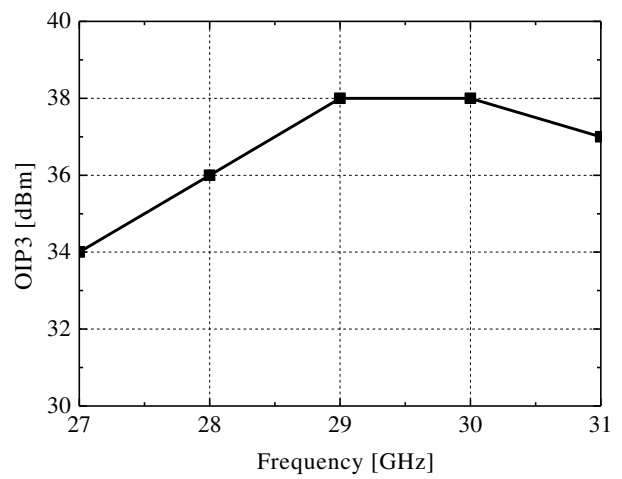
Gain & Pout PAE VS. Pin @29GHz



IMD3 VS. Pout



OIP3 VS. Frequency (Pout/Tone=17dBm)



Assembly Diagram

