

SANCOM

SA-PA044050-P39-1

4.4-5.0 GHz High Power GaAs-HEMT

Features

Frequency Range: 4.4-5.0 GHz

 $P_{1dB} : \geq 39 \text{ dBm}$ Power Gain: $\geq 10 \text{ dB}$ Efficiency: $\geq 35\%$ $Z_{in} / Z_{out} = 50 \Omega$ 

Description

Sancom Electric's GaAs-HEMT SA-PA044050-P39-1 offers high power, high efficiency, ease of matching and greater consistency for high power applications with 10V operation. The SA-PA044050-P39-1 typically provides 39 dBm of 1dB output power and 10 dB of large-signal gain and can be widely used in various RF/microwave systems.

ABSOLUTE MAXIMUM RATINGS

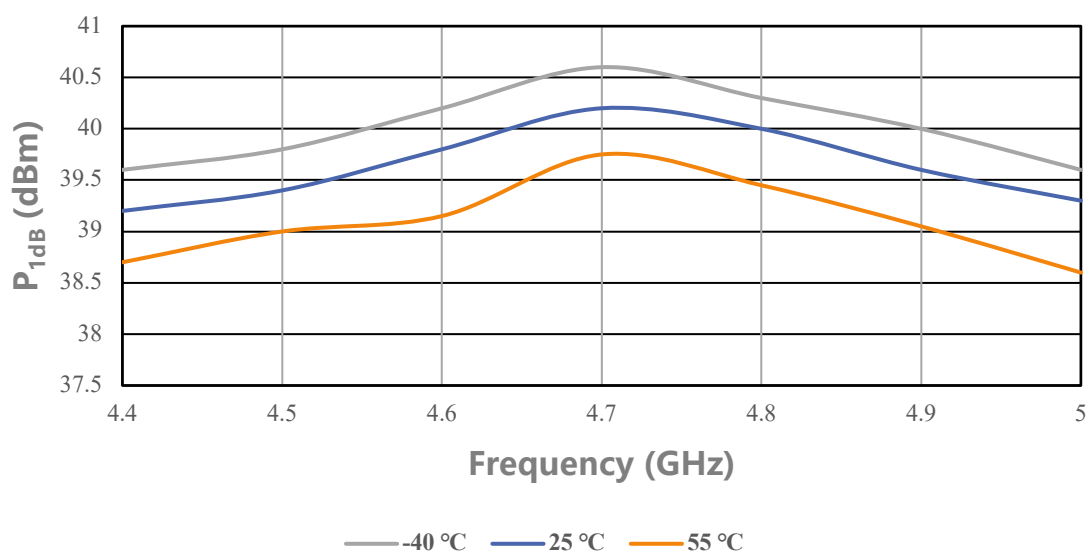
Parameter	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}	$TC=25^{\circ}C$	11	V
Gate-Source Voltage	V_{GS}	$TC=25^{\circ}C$	-5	V
Storage Temperature	T_{stg}	$TC=25^{\circ}C$	-65 to 150	$^{\circ}C$
Channel Temperature	T_{ch}	$TC=25^{\circ}C$	150	$^{\circ}C$

ELECTRICAL SPECIFICATIONS

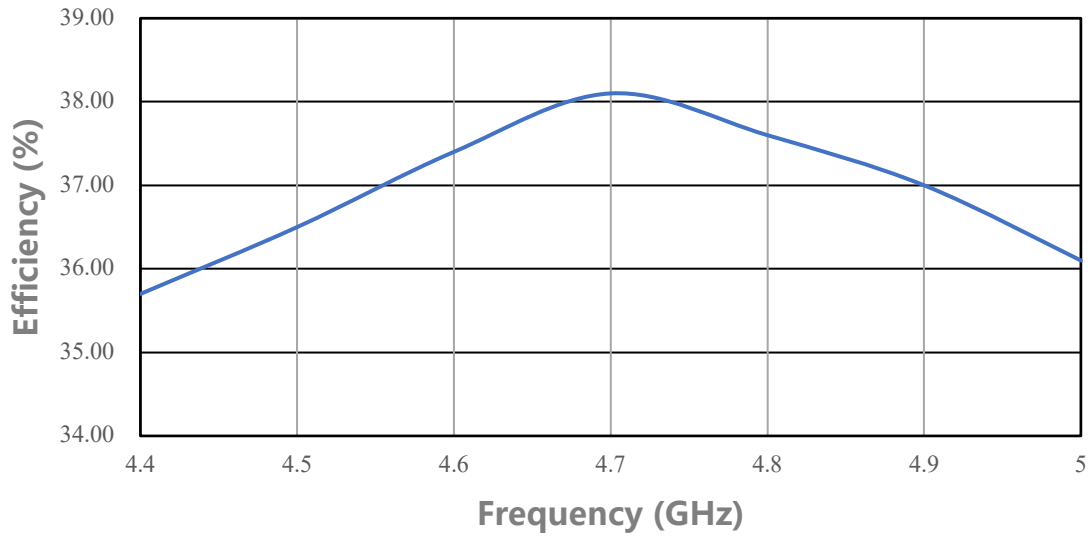
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain-Source Current	I_{DS}	$V_{DS}: 10\text{ V}$ CW (Continuous Wave) $P_{in}: 29\text{ dBm}$ Freq: 4.4 ~ 5.0 GHz	-	2.3	-	A
1dB Output	P_{1dB}		39	-	-	dBm
Power Gain	G_p		10	-	-	dB
Efficiency	η		35	-	-	%
Flatness	ΔG		-0.8	-	0.8	dB

Performance Plots

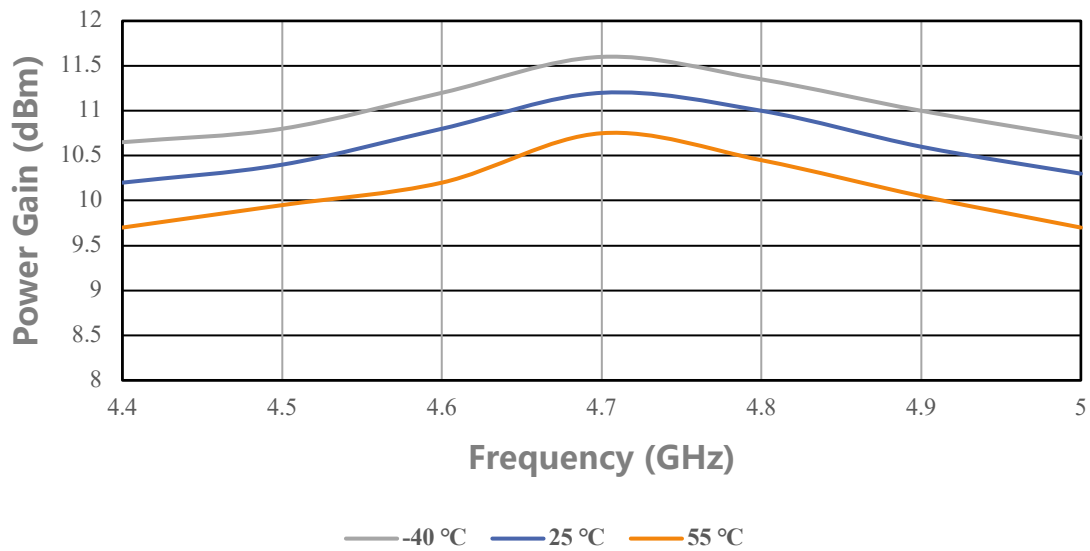
P_{1dB} VS Frequency



Efficiency VS Frequency



Power Gain VS Frequency



Simplified Block Diagram



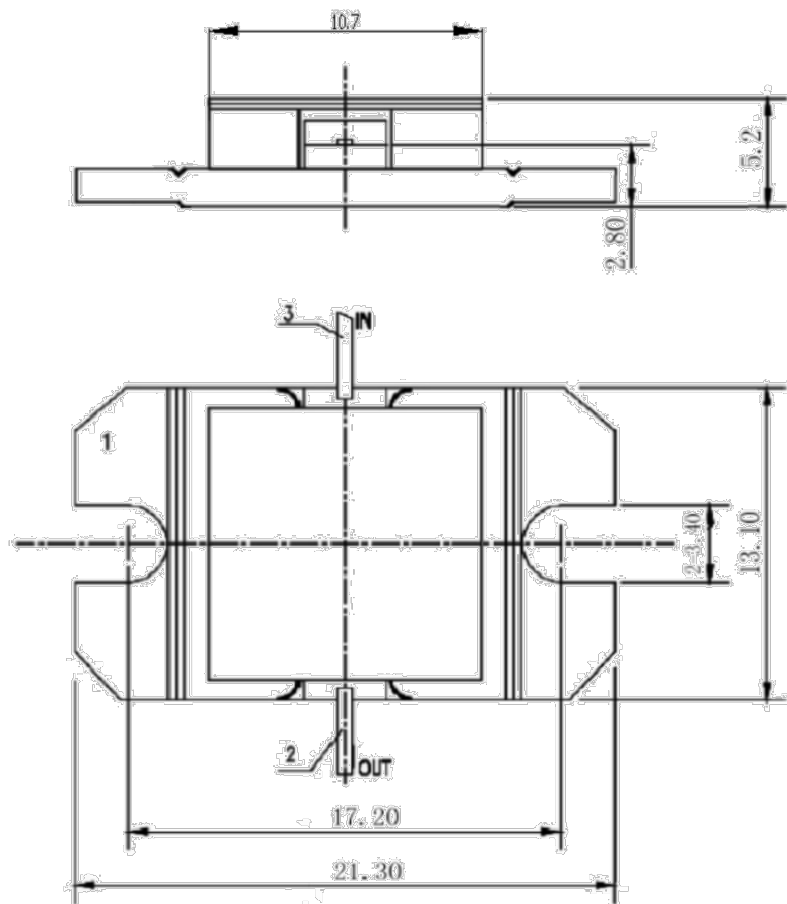
DUT information

C1: 4.7 pF	R_p : 51 Ω
C2: 1000 pF	R_g : 15 Ω
C3: 100 μ F	$R \approx 5.8$ mm

ESD Protection

ESD	Class III	2000 V
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Outline Drawing



Unit: mm

Attention

- Please keep away from moisture during transportation and storage
- Pay attention to ESD prevention during chip use and assembly. Wear a grounding ESD bracelet.
- When adding electricity, add gate electricity first and then add leakage electricity