



4450GN-110V

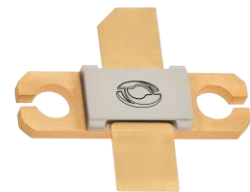
110 Watts • 50 Volts • 200uS, 10%
C-Band Radar 4400 - 5000 MHz

GENERAL DESCRIPTION

The 4450GN-110V is an internally matched, COMMON SOURCE, class AB, GaN on SiC HEMT transistor capable of providing over 12.4 dB gain, 110 Watts of pulsed RF output power at 200uS pulse width, 10% duty factor across the 4400 to 5000 MHz band. This hermetically sealed transistor is designed for C-Band Radar applications. It utilizes gold metallization and eutectic attach to provide highest reliability and superior ruggedness.

Market Application – 4450GN-110V is designed for C-Band Pulsed Radar

CASE OUTLINE 55-QP Common Source



ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C 245 W

Maximum Voltage and Current

Drain-Source Voltage (V_{DSS}) 125 V

Gate-Source Voltage (V_{GS}) -8 to +0 V

Maximum Temperatures

Storage Temperature (T_{STG}) -55 to +125° C

Operating Junction Temperature +250 °C

ELECTRICAL CHARACTERISTICS @ 25°C

Symbol	Characteristics	Test Conditions	Min	Typ	Max	Units
Pout	Output Power	Pin=6.3W Freq=4400,4700,5000 MHz	110			W
Gp	Power Gain	Pin=6.3W Freq=4400,4700,5000 MHz	12.4			dB
η_d	Drain Efficiency	Pin=6.3W Freq=4400,4700,5000 MHz	50	65		%
Dr	Droop	Pin=6.3W Freq=4400,4700,5000 MHz		0.1	0.5	dB
VSWR-T	Load Mismatch Tolerance	Pout=110W, Freq= 4700MHz			3:1	
Θ_{jc}	Thermal Resistance	Pulse Width=200uS, Duty=10%			0.98	°C/W

- Bias Condition: Vdd=+50V, Idq=30mA constant current (Vgs= -2.0 ~ -4.5V typical)

FUNCTIONAL CHARACTERISTICS @ 25°C

$I_{D(off)}$	Drain leakage current	$V_{GS} = -8V, V_D = 125V$			12	mA
$I_{G(off)}$	Gate leakage current	$V_{GS} = -8V, V_D = 0V$			4	mA

Export Classification: ECCN 3A001.b.3.a.4

For the most current data consult MICROSEMI's website: www.MICROSEMI.com
Specifications are subject to change, consult the Santa Clara factory at (408) 986-8031 for the latest information.



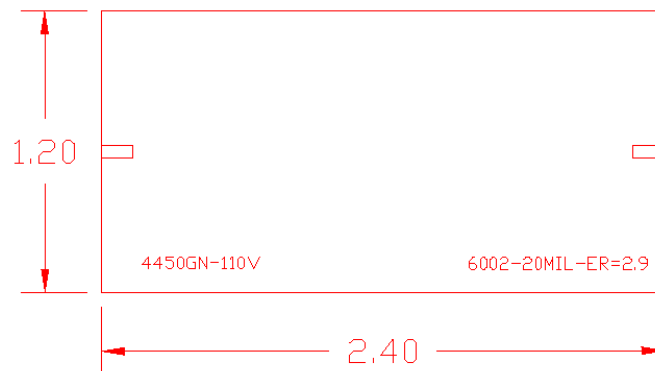
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TYPICAL BROAD BAND PERFORMACE DATA

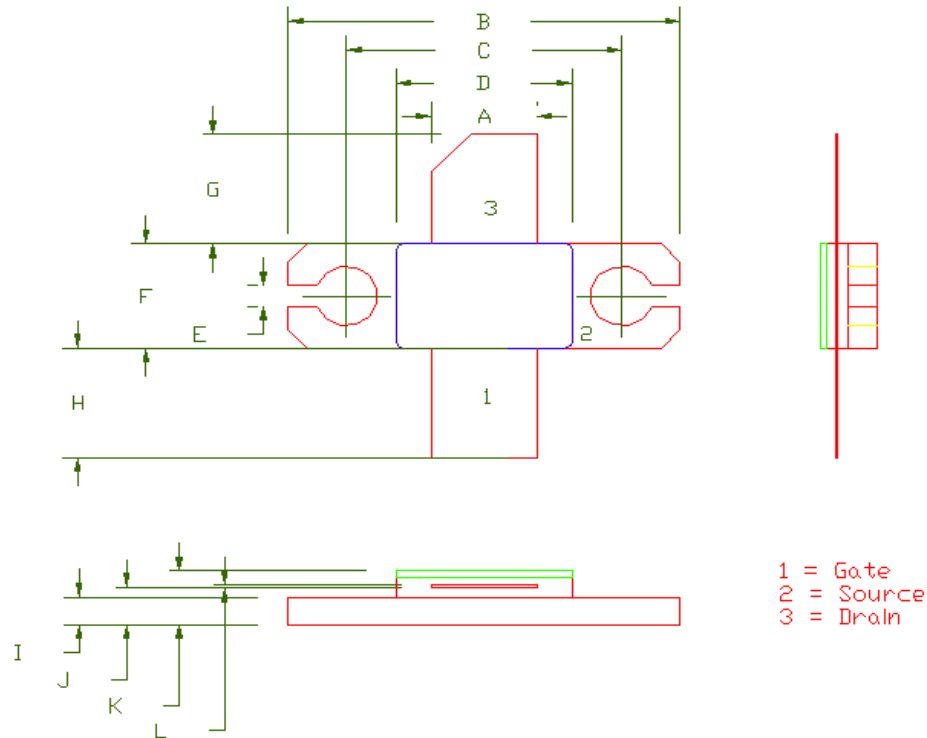
Frequency	Pin (W)	Pout (W)	Id (A)	RL (dB)	Nd (%)	G (dB)	Droop (dB)
4400 MHz	6.3	131	0.44	-6	62	13.20	0.20
4700 MHz	6.3	120	0.38	-7	67	12.80	0.15
5000 MHz	6.3	121	0.37	-6	68	12.85	0.10

CIRCUIT LAYOUT



Please contact Microsemi Corporation for more detail

55-QP PACKAGE DIMENSION



Dimension	Min (mil)	Min (mm)	Max (mil)	Max (mm)
A	213	5.41	217	5.51
B	798	20.26	802	20.37
C	560	14.22	564	14.32
D	258	6.55	362	9.19
E	43	1.09	47	1.19
F	226	5.74	230	5.84
G	235	5.96	239	6.07
H	235	5.96	239	6.07
I	60	1.52	62	1.57
J	81	2.06	82	2.08
K	116	2.94	118	2.99
L	4	.102	6	.152



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Revision History

Revision Level / Date	Para. Affected	Description
01 / April 2014	-	Initial Preliminary Release
02 / February 2016	-	Export Classification Update, formatting, new disclaimer

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