

5359GN-120V

120 Watts - 50 Volts, 200uS, 10%
C-Band Radar 5300 - 5900 MHz

GENERAL DESCRIPTION

The 5359GN-120V is an internally matched, COMMON SOURCE, class AB, GaN on SiC HEMT transistor capable of providing over 10 dB gain, 120 Watts of pulsed RF output power at 200uS pulse width, 10% duty factor across the 5300 to 5900 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 – 5359GN-120V is designed for C-Band Pulsed Radar

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation

Device Dissipation @ 25°C 350 W

Maximum Voltage and Current

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

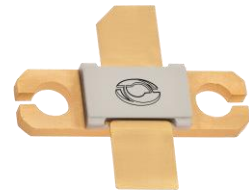
Gate-Source Voltage (V_{GS}) -8 to +0 V

Maximum Temperatures

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

Operating Junction Temperature +250 °C

CASE OUTLINE 55-QP Common Source



ELECTRICAL CHARACTERISTICS @ 25°C

Symbol	Characteristics	Test Conditions	Min	Typ	Max	Units
Pout	Output Power	Freq=5300,5600,5900 MHz	120			W
Gp	Power Gain	Freq=5300,5600,5900 MHz		11		dB
η_d	Drain Efficiency	Freq=5300,5600,5900 MHz		40		%
Dr	Droop	Freq=5300,5600,5900 MHz		0.1		dB
VSWR-T	Load Mismatch Tolerance	Pout=120W, Freq= 5600MHz			3:1	
Θ_{jc}	Thermal Resistance	Pulse Width=200uS, Duty=10%			0.55	°C/W

- Bias Condition: Vdd=+50V, Idq=60mA constant current ($V_{GS} = -2.0 \sim -4.5V$ typical)

FUNCTIONAL CHARACTERISTICS @ 25°C

$I_{D(Off)}$	Drain leakage current	$V_{GS} = -8V, V_D = 125V$			24	mA
$I_{G(Off)}$	Gate leakage current	$V_{GS} = -8V, V_D = 0V$			8	mA
BV_{DSS}	Drain-source breakdown voltage	$V_{GS} = -8V, I_D = 24mA$	125			V

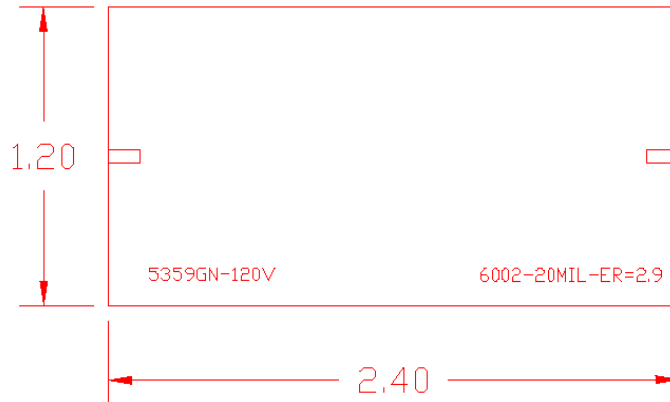
Export Classification: ECCN 3A001.b.3.a.4



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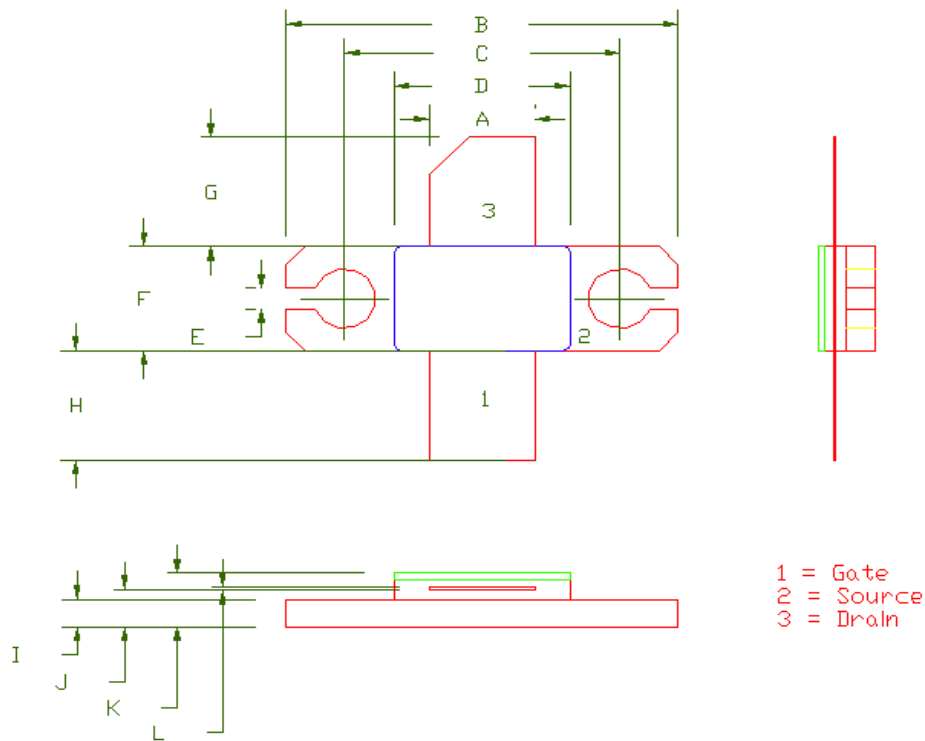
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CIRCUIT LAYOUT



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
00 / April 2014	-	Initial Preliminary Release
01 / March 2015	-	Export Classification status change to ECCN 3A001.b.3.a.4
02 / February 2016	-	Formatting and new disclaimer

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Specifications are subject to change, consult the Santa Clara factory at [\(408\) 986-8031](tel:4089868031) for the latest information.