RF Products
Microsemi
Progress Powered by Technology

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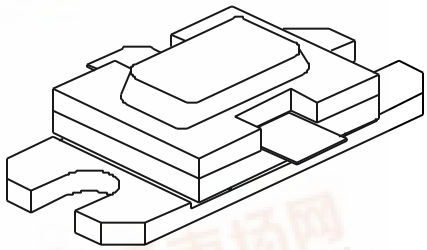
MS2620

RF & MICROWAVE TRANSISTORS
S-BAND RADAR APPLICATIONS



.400 x .500 2LFL (S038)
hermetically sealed

Features

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- LOW THERMAL RESISTANCE
- INPUT/OUTPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- POUT = 25 W MIN. WITH 7.0 dB GAIN

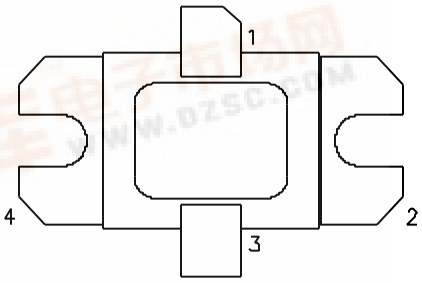
DESCRIPTION:

The MS2620 device is a high power silicon bipolar NPN transistor specifically designed for medium pulse S-Band radar output and driver applications.

This device is characterized at 50 msec pulse width and 10% duty cycle, but is cable of operation over a range of pulse widths, duty cycles and temperatures, and can withstand a 3:1 output VSWR with a + 1 dB input overdrive. Low RF thermal resistance, refractory/gold metallization and computerized automatic wire bonding techniques ensure high reliability and product consistancy (including phase characteristics).

The MS2620 is supplied in the BIGPAC™ Hermetic Metal/Ceramic package with internal Input/Output impedance matching circuitry, and is intended for military and other high reliability applications.

PIN CONNECTION



1. Collector
2. Base
3. Emitter
4. Base

ABSOLUTE MAXIMUM RATINGS (Tcase = 25 °C)

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation* (T_C ≤ 75 °C)	500	W
I_C	Device Current*	16	A
V_{CC}	Collector-Supply Voltage*	45	V
T_J	Junction Temperature (Pulsed RF Operation)	250	°C
T_{STG}	Storage Temperature	- 65 to + 200	°C

Thermal Data

$R_{TH(j-c)}$	Junction-Case Thermal Resistance*	0.35	°C/W

* Applies only to rated RF amplifier operation

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ELECTRICAL SPECIFICATIONS (Tcase = 25 °C)

STATIC

Symbol	Test Conditions	Value			
		Min.	Typ.	Max.	Unit
BV_{CBO}	I_C = 50mA I_E = 0mA	**55**	——	——	**V**
BV_{EBO}	I_E = 10mA I_C = 0mA	**3.5**	——	——	**V**
BV_{CES}	I_C = 50mA V_{BE} = 0V	**55**	——	——	**V**
I_{CES}	V_{BE} = 0V V_{CE} = 42V	——	——	**40**	**mA**
h_{FE}	V_{CE} = 5V I_C = 5A	**30**	——	**300**	——

DYNAMIC

Symbol	Test Conditions	Value			
		Min.	Typ.	Max.	Unit
P_{OUT}	f = 2900 —— 3100MHz P_{IN} = 25W V_{CC} = 42V	**125**	——	——	**W**
η_C	f = 2900 —— 3100MHz P_{IN} = 25W V_{CC} = 42V	**35**	——	——	**%**
G_P	f = 2900 —— 3100MHz P_{IN} = 25W V_{CC} = 42V	**7.0**	——	——	**dB**

Note: Pulse Width = 50mSec
Duty Cycle = 10%

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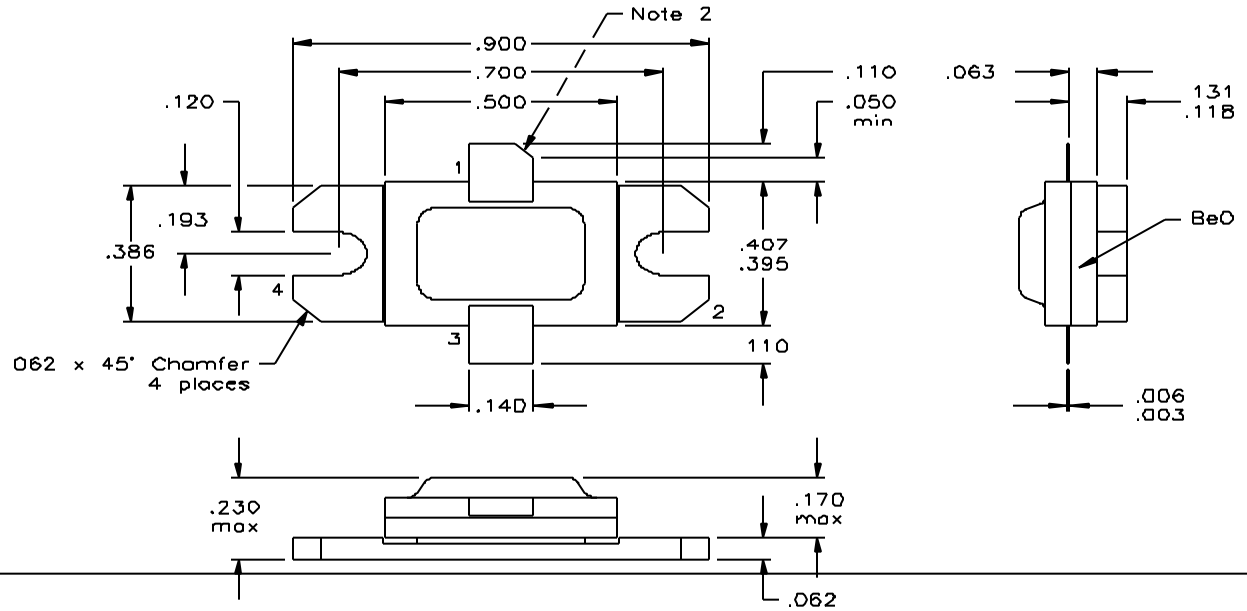
PACKAGE MECHANICAL DATA

Reference Drawing No.: J135066F



NOTES:

1. ALL TOLERANCES ±.010 EXCEPT WHERE NOTED; DIMENSIONS IN INCHES.
2. COLLECTOR LEAD CHAMFER 45° NOM. X .040 NOM.