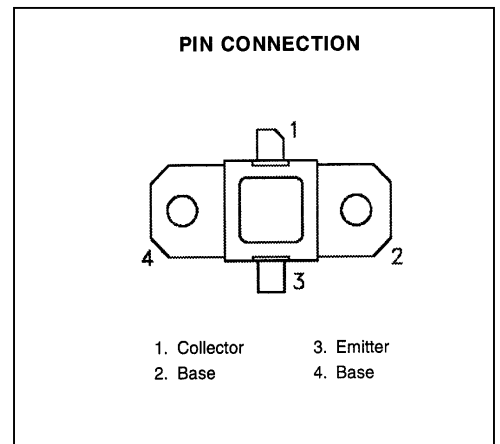
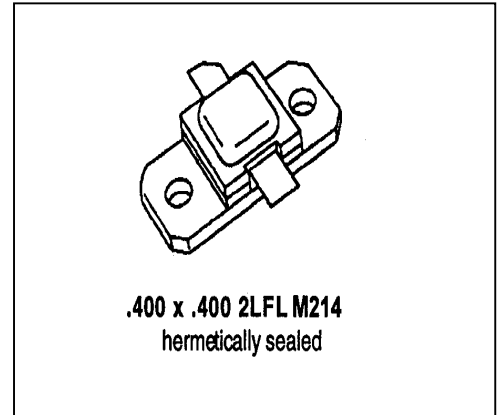


# MS2604

## RF & MICROWAVE TRANSISTORS S BAND RADAR APPLICATIONS

### Features

- 2.7 – 3.1 GHz
- 40 VOLTS
- $P_{OUT} = 25$  WATTS
- $G_p = 6.2$  dB MINIMUM
- GOLD METALLIZATION
- INPUT/OUTPUT MATCHING
- COMMON BASE CONFIGURATION



### DESCRIPTION:

The MS2604 is a silicon NPN bipolar transistor designed for pulsed S-Band radar applications.

The MS2604 is capable of operation over a wide range of pulse widths and duty cycles. Internal impedance matching and gold metalization provide consistent broadband performance and long term reliability.

### ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
V <sub>CC</sub>	Collector Supply Voltage	46	V
I <sub>C</sub>	Device Current	4	A
P <sub>DISS</sub>	Power Dissipation	100	W
T <sub>J</sub>	Junction Temperature	200	°C
T <sub>STG</sub>	Storage Temperature	-65 to +200	°C

### Thermal Data

R <sub>TH(J-C)</sub>	Junction - Case Thermal Resistance	2.0	°C/W
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**ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)  
STATIC**

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 15 mA	I <sub>E</sub> = 0 mA	55	---	---	V
BV <sub>EBO</sub>	I <sub>E</sub> = 2 mA	I <sub>C</sub> = 0 mA	3.5	---	---	V
BV <sub>CER</sub>	I <sub>C</sub> = 15 mA	R <sub>BE</sub> = 10 Ω	55	---	---	V
I <sub>CES</sub>	V <sub>CE</sub> = 40 V		---	---	10	mA
HFE	V <sub>CE</sub> = 5.0 V	I <sub>C</sub> = 1.5 A	30	---	150	---

**DYNAMIC**

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 2700 - 3100 MHz	P <sub>IN</sub> = 6.0 W	V <sub>CC</sub> = 40V	25	---	---	W
η <sub>c</sub>	f = 2700 - 3100 MHz	P <sub>IN</sub> = 6.0 W	V <sub>CC</sub> = 40V	30	---	---	%
G <sub>PE</sub>	f = 2700 - 3100 MHz	P <sub>IN</sub> = 6.0 W	V <sub>CC</sub> = 40V	6.2	---	---	dB
Conditions	Pulse Width = 100 μsec Duty Cycle = 10%						

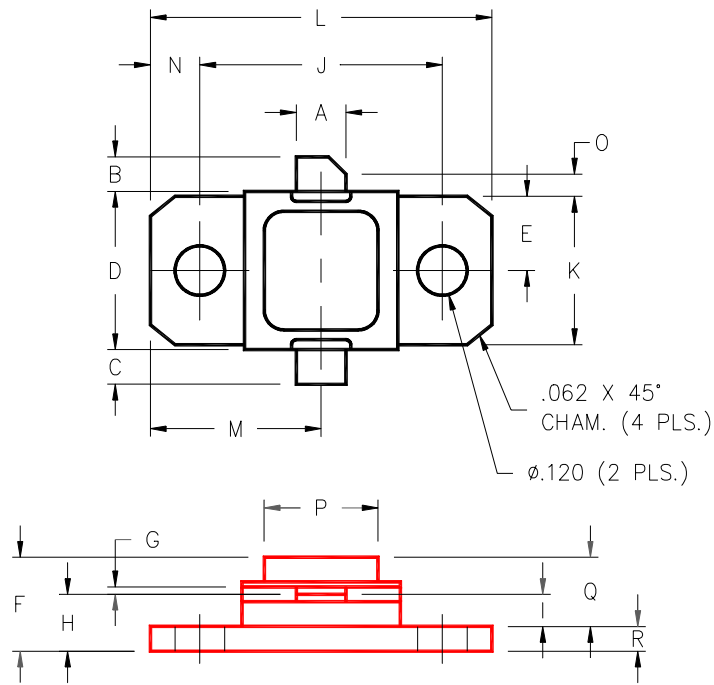
**IMPEDANCE DATA**

Freq	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
2.7 GHz	12.0 + j3.0	15.0 - j4.0
2.9 GHz	6.5 + j0.0	15.5 - j3.0
3.1 GHz	5.0 - j3.0	11.0 - j3.0

P<sub>IN</sub> = 6 W  
V<sub>CC</sub> = 40 V

**PACKAGE MECHANICAL DATA**

PACKAGE STYLE M214



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.140/3,56		J	.650/16,51	
B	.110/2,80		K	.386/9,80	
C	.110/2,80		L	.900/22,86	
D	.395/10,03	.407/10,34	M	.450/11,43	
E	.193/4,90		N	.125/3,18	
F		.230/5,84	O	.050/1,27	
G	.003/0,08	.006/0,15	P	.405/10,29	
H	.118/3,00	.131/3,33	Q	.170/4,32	
I	.063/1,60		R	.062/1,58	