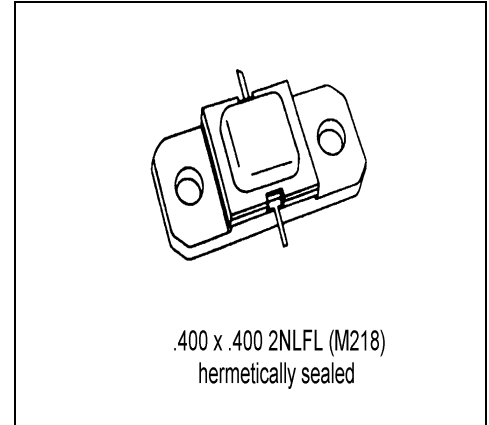


# MS2601

## RF & MICROWAVE TRANSISTORS S BAND RADAR APPLICATIONS

### Features

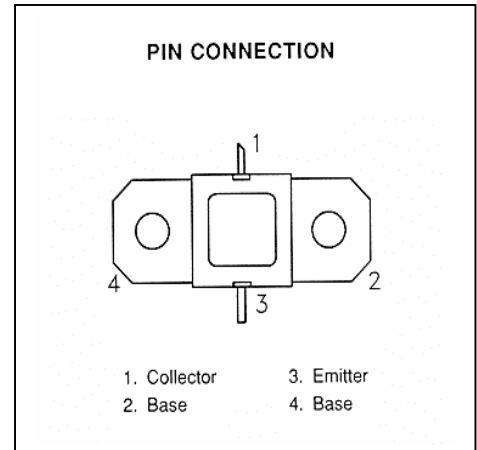
- 2.7 – 3.1 GHz
- 30 VOLTS
- $P_{OUT} = 1.0$  WATT
- $G_P = 5.2$  dB MINIMUM
- INPUT/OUTPUT MATCHING
- GOLD METALLIZATION
- COMMON BASE CONFIGURATION



### DESCRIPTION:

The MS2601 is a silicon NPN bipolar transistor designed for pulsed S-Band radar applications.

The MS2601 is capable of operation over a wide range of pulse widths and duty cycles. Internal Impedance matching provides consistent broadband performance.



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

Symbol	Parameter	Value	Unit
V <sub>CC</sub>	Collector Supply Voltage	34	V
P <sub>DISS</sub>	Power Dissipation*	11.5	W
I <sub>C</sub>	Device Current *	0.45	A
T <sub>J</sub>	Maximum 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	13.0	°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> = 1 mA	I <sub>E</sub> = 0 mA	45	---	---	V
BV <sub>EBO</sub>	I <sub>E</sub> = 1 mA	I <sub>C</sub> = 0 mA	3.5	---	---	V
BV <sub>CER</sub>	I <sub>C</sub> = 1 mA	R <sub>BE</sub> = 10 Ω	45	---	---	V
I <sub>CES</sub>	V <sub>CE</sub> = 30 V		---	---	0.5	mA
HFE	V <sub>CE</sub> = 5.0 V	I <sub>C</sub> = 100 mA	10	---	150	---

**DYNAMIC**

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 2.7 - 3.1 GHz	P <sub>IN</sub> = 0.3 W	V <sub>CC</sub> = 30V	1.0	---	---	W
η <sub>c</sub>	f = 2.7 - 3.1 GHz	P <sub>IN</sub> = 0.3 W	V <sub>CC</sub> = 30V	27	---	---	%
G <sub>PE</sub>	f = 2.7 - 3.1 GHz	P <sub>IN</sub> = 0.3 W	V <sub>CC</sub> = 30V	5.2	---	---	dB
Conditions	Pulse width = 100 μsec Duty Cycle = 10%						

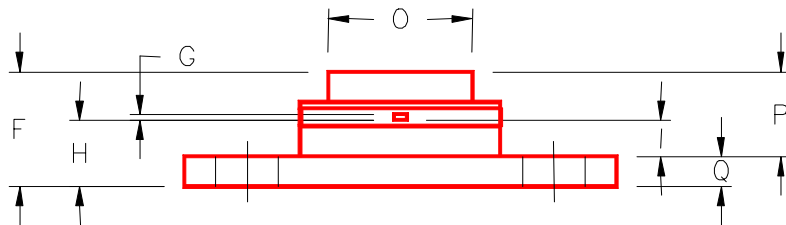
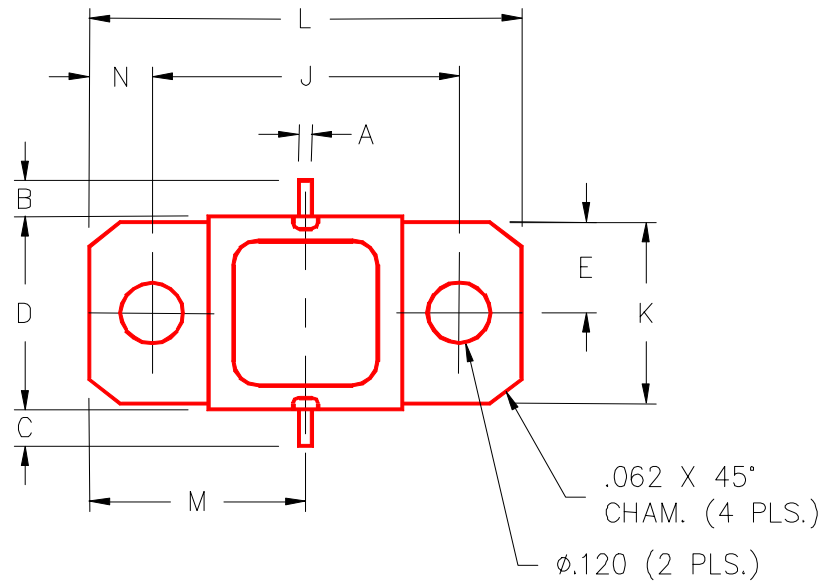
**IMPEDANCE DATA**

Freq	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
2.7 GHz	18.0 + j23.5	27.0 + j3.0
2.9 GHz	24.0 + j23.5	14.0 - j6.5
3.1 GHz	28.0 + j23.0	12.0 - j14.0

P<sub>IN</sub> = 0.3W  
V<sub>CC</sub> = 30V

**PACKAGE MECHANICAL DATA**

PACKAGE STYLE M218



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.025/0,64		J	.650/16,51	
B	.100/2,54		K	.386/9,80	
C	.100/2,54		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	.405/10,29	
G	.004/0,10	.007/0,18	P		.170/4,32
H	.118/3,00	.131/3,33	Q	.062/1,58	
I	.063/1,60				