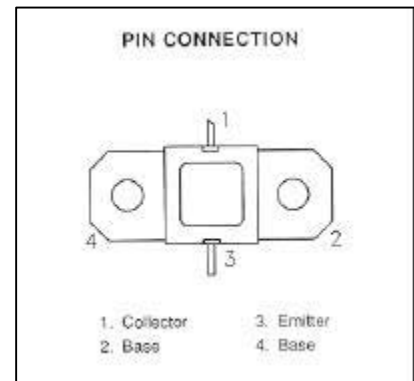
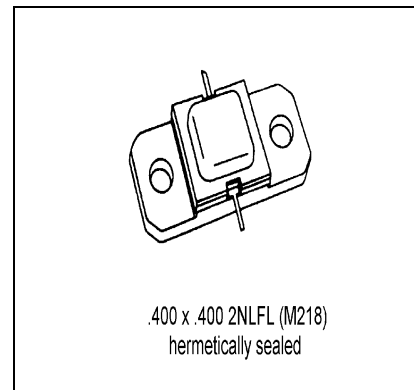


**MS2223**

**RF & MICROWAVE TRANSISTORS  
AVIONICS APPLICATIONS**

**Features**

- GOLD METALLIZATION
- EMITTER SITE BALLASTED
- Pout = 70 W MINIMUM
- Gp = 6.7 dB
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- LOW THERMAL RESISTANCE



**DESCRIPTION:**

The MS2223 is a silicon NPN bipolar transistor designed for avionics applications with high duty cycle requirements. Gold metallization and emitter ballasting provides long term reliability under long pulse formats.

**ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)**

Symbol	Parameter	Value	Unit
$V_{CC}$	Collector-Supply Voltage*	32	V
$I_C$	Device Current*	8.0	A
$P_{DISS}$	Power Dissipation*	200	W
$T_J$	Junction Temperature	200	°C
$T_{STG}$	Storage Temperature	- 65 to + 200	°C

**Thermal Data**

$R_{TH(i-c)}$	Junction-Case Thermal Resistance*	0.68	°C/W
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\* Applies only to rated RF operation.

## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
<b>BV<sub>CBO</sub></b>	<b>I<sub>C</sub> = 25mA</b>	<b>I<sub>E</sub> = 0 mA</b>	<b>55</b>	----	----	<b>V</b>
<b>BV<sub>CER</sub></b>	<b>I<sub>C</sub> = 25 mA</b>	<b>R<sub>BE</sub> = 10</b>	<b>55</b>	----	----	<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 10 mA</b>	<b>I<sub>C</sub> = 0 mA</b>	<b>3.5</b>	----	----	<b>V</b>
<b>I<sub>CES</sub></b>	<b>V<sub>CE</sub> = 35 V</b>	<b>V<sub>BE</sub> = 0 V</b>	----	----	<b>20</b>	<b>mA</b>
<b>h<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5 V</b>	<b>I<sub>C</sub> = 2A</b>	<b>20</b>	----	<b>200</b>	----

### DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 1090 MHz</b>	<b>P<sub>IN</sub> = 15 W</b>	<b>V<sub>CC</sub> = 28 V</b>	<b>70</b>	----	----	<b>W</b>
<b>η<sub>c</sub></b>	<b>f = 1090 MHz</b>	<b>P<sub>IN</sub> = 15 W</b>	<b>V<sub>CC</sub> = 28 V</b>	<b>45</b>	----	----	<b>%</b>
<b>G<sub>p</sub></b>	<b>f = 1090 MHz</b>	<b>P<sub>IN</sub> = 15 W</b>	<b>V<sub>CC</sub> = 28 V</b>	<b>6.7</b>	----	----	<b>dB</b>
<b>Condition</b>	<b>Pulse Width: 100 S Duty Cycle: 2%</b>						

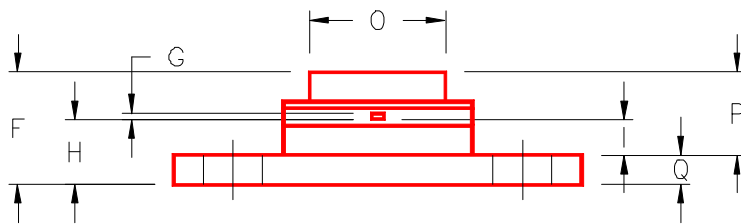
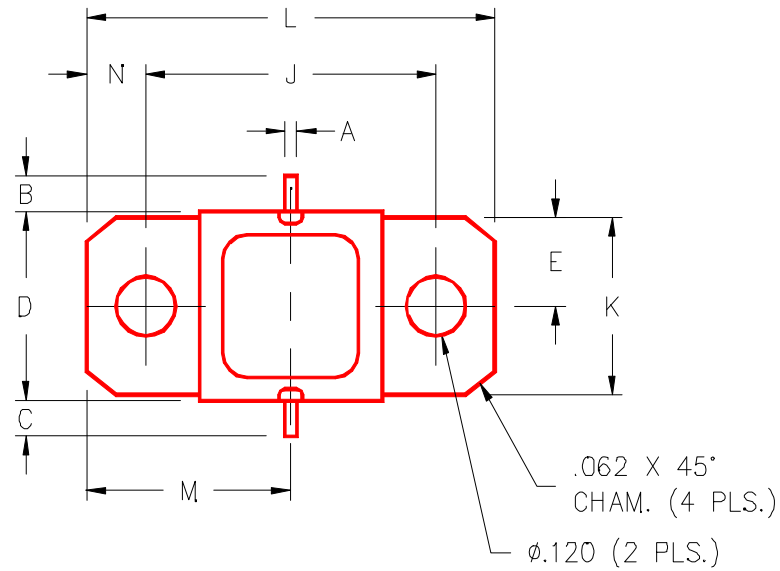
### IMPEDANCE DATA:

FREQUENCY	Z <sub>in</sub>	Z <sub>cl</sub>
1025 MHz	4.7 + j4.7	3.6 + j4.3
1090 MHz	4.7 + j3.9	3.3 + j4.4

Pin = 15W Vcc = 28V

**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				