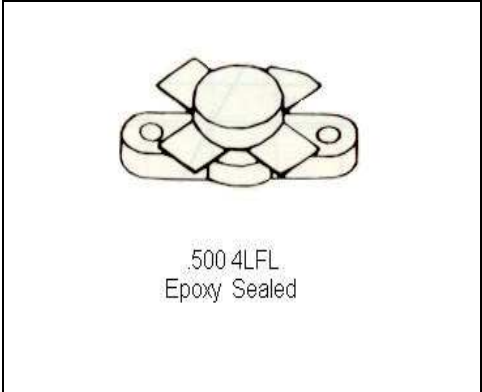


MS1001

**RF & MICROWAVE TRANSISTORS**  
**HF SSB APPLICATIONS**

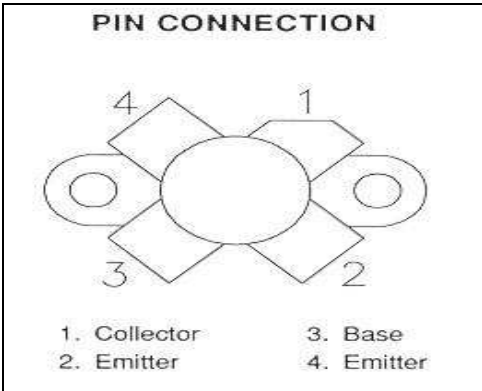
**Features**

- 30 MHz
- 12.5 VOLTS
- IMD = -32 dBc
- INFINITE VSWR CAPABILITY @ RATED CONDITIONS
- P<sub>OUT</sub> = 75 WATTS
- G<sub>P</sub> = 13dB MINIMUM
- COMMON EMITTER CONFIGURATION



**DESCRIPTION:**

The MS1001 is a 12.5V Class C silicon NPN transistor designed primarily for HF communications. Diffused emitter resistors provide infinite VSWR capability under rated operating conditions.



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

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	36	V
V <sub>CEO</sub>	Collector-Emitter Voltage	18	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>C</sub>	Device Current	20	A
P <sub>D</sub>	Total Dissipation	270	W
T <sub>j</sub>	Junction Temperature	200	°C
T <sub>STG</sub>	Storage Temperature	-65 to +150	°C

**Thermal Data**

R <sub>TH(J-C)</sub>	Thermal Resistance Junction-case	0.65	°C/W
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**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> = 50 mA</b>	<b>I<sub>E</sub> = 0 mA</b>	<b>36</b>	---	---	<b>V</b>
<b>BV<sub>CES</sub></b>	<b>I<sub>C</sub> = 100 mA</b>	<b>V<sub>BE</sub> = 0 V</b>	<b>36</b>	---	---	<b>V</b>
<b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub> = 100 mA</b>	<b>I<sub>B</sub> = 0 mA</b>	<b>18</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>4.0</b>	---	---	<b>V</b>
<b>I<sub>CES</sub></b>	<b>V<sub>CE</sub> = 15 V</b>	<b>I<sub>E</sub> = 0 mA</b>	---	---	<b>15</b>	<b>mA</b>
<b>h<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5 V</b>	<b>I<sub>C</sub> = 5 A</b>	<b>20</b>	---	<b>200</b>	---

**DYNAMIC**

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 30MHz</b>	<b>P<sub>IN</sub> = 3.8 W</b>	<b>V<sub>CE</sub> = 12.5V</b>	<b>75</b>	---	---	<b>WPEP</b>
<b>G<sub>p</sub></b>	<b>f = 30MHz</b>	<b>P<sub>IN</sub> = 3.8 W</b>	<b>V<sub>CE</sub> = 12.5V</b>	<b>13</b>	---	---	<b>dB</b>
<b>IMD*</b>	<b>f = 30MHz</b>	<b>V<sub>CC</sub> = 12.5V</b>	<b>I<sub>CQ</sub> = 100mA</b>	<b>-32</b>	---	---	<b>dB<sub>c</sub></b>
<b>C<sub>OB</sub></b>	<b>f = 1 MHz</b>	<b>V<sub>CB</sub> = 12V</b>		---	<b>350</b>	---	<b>pf</b>
<b>Condition</b>	<b>f1 = 30.000 MHz</b>	<b>f2 = 30.001 MHz</b>					

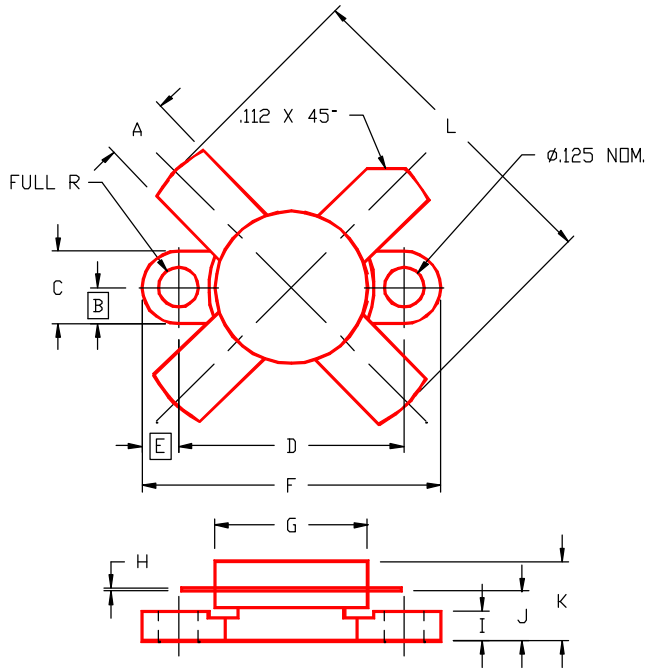
**IMPEDANCE DATA**

FREQ	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
<b>30 MHz</b>	<b>0.7 + j0.75</b>	<b>1.2 + j1.0</b>

**P<sub>IN</sub> = 3.8W**  
**V<sub>CC</sub> = 12.5V**

**MS1001**

**PACKAGE MECHANICAL DATA**



**PACKAGE STYLE M174**

	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.220/5,59	.230/5,84	I	.090/2,29	.110/2,79
B	.125/3,18		J	.160/4,06	.175/4,45
C	.245/6,22	.255/6,48	K		.280/7,11
D	.720/18,28	.730/18,54	L		1.050/26,67
E	.125/3,18				
F	.970/24,64	.980/24,89			
G	.495/12,57	.505/12,83			
H	.003/0,08	.007/0,18			