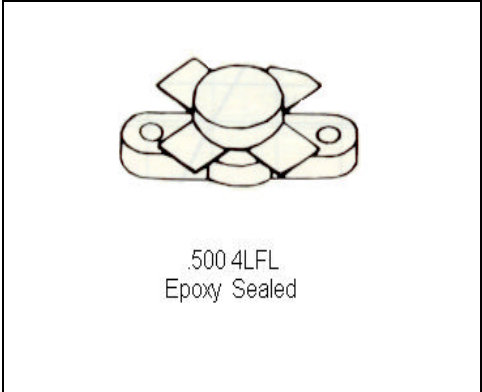


**MS1001**

**RF & MICROWAVE TRANSISTORS  
 HF SSB APPLICATIONS**

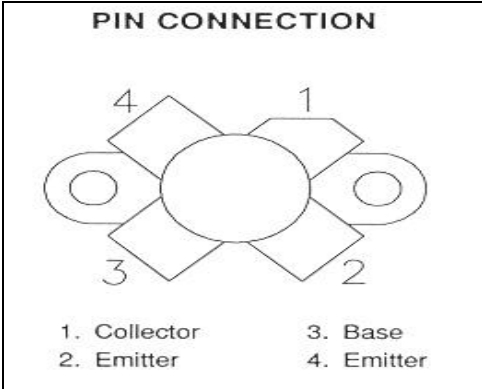
**Features**

- 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.	
BV <sub>CBO</sub>	I <sub>C</sub> = 50 mA	I <sub>E</sub> = 0 mA	36	---	---	V
BV <sub>CES</sub>	I <sub>C</sub> = 100 mA	V <sub>BE</sub> = 0 V	36	---	---	V
BV <sub>CEO</sub>	I <sub>C</sub> = 100 mA	I <sub>B</sub> = 0 mA	18	---	---	V
BV <sub>EBO</sub>	I <sub>E</sub> = 10 mA	I <sub>C</sub> = 0 mA	4.0	---	---	V
I <sub>CES</sub>	V <sub>CE</sub> = 15 V	I <sub>E</sub> = 0 mA	---	---	15	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5 V	I <sub>C</sub> = 5 A	20	---	200	---

### DYNAMIC

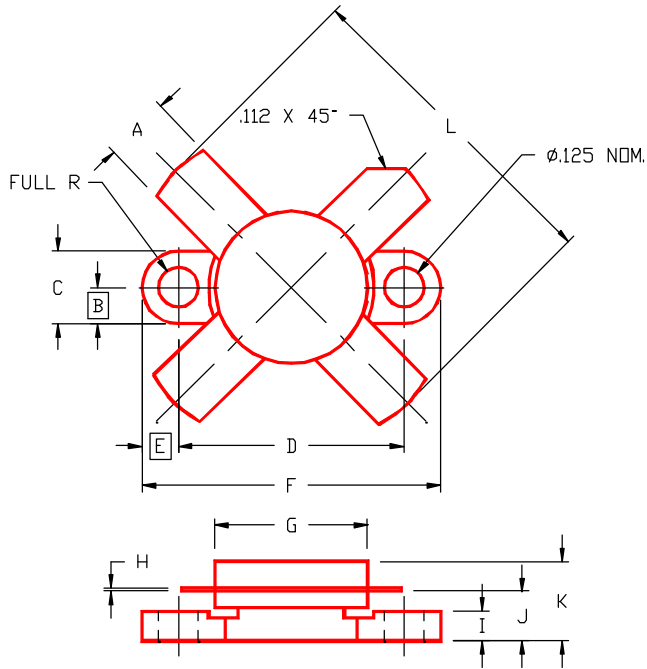
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 30MHz	P <sub>IN</sub> = 3.8 W	V <sub>CE</sub> = 12.5V	75	---	---	WPEP
G <sub>p</sub>	f = 30MHz	P <sub>IN</sub> = 3.8 W	V <sub>CE</sub> = 12.5V	13	---	---	dB
IMD*	f = 30MHz	V <sub>CC</sub> = 12.5V	I <sub>CQ</sub> = 100mA	-32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

### IMPEDANCE DATA

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

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

**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			