ADVANCED POWER TECHNOLOGY RF®

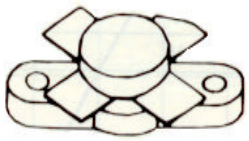
140 COMMERCE DRIVE
MONTGOMERYVILLE, PA
18936-1013
PHONE: (215) 631-9840
FAX: (215) 631-9855

MS1001

RF & MICROWAVE TRANSISTORS
HF SSB APPLICATIONS

Features

- **30 MHz**
- **12.5 VOLTS**
- **IMD = -32 dBc**
- **INFINITE VSWR CAPABILITY @ RATED CONDITIONS**
- **P_{OUT} = 75 WATTS**
- **G_P = 13dB MINIMUM**
- **COMMON EMITTER CONFIGURATION**

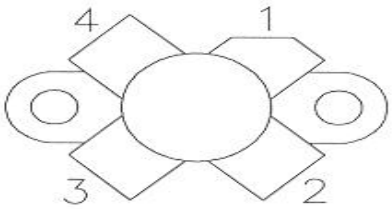


.500 4LFL
Epoxy Sealed

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.

PIN CONNECTION



1. Collector
2. Emitter
3. Base
4. Emitter

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	36	V
V_{CEO}	Collector-Emitter Voltage	18	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	20	A
P_D	Total Dissipation	270	W
Tj	Junction Temperature	200	ºC
T_{STG}	Storage Temperature	-65 to +150	ºC

Thermal Data

$R_{TH(J-C)}$	Thermal Resistance Junction-case	0.65	°C/W

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ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 50 mA	I_E = 0 mA	36	---	---	V
BV_{CES}	I_C = 100 mA	V_{BE} = 0 V	36	---	---	V
BV_{CEO}	I_C = 100 mA	I_B = 0 mA	18	---	---	V
BV_{EBO}	I_E = 10 mA	I_C = 0 mA	4.0	---	---	V
I_{CES}	V_{CE} = 15 V	I_E = 0 mA	---	---	15	mA
h_{FE}	V_{CE} = 5 V	I_C = 5 A	20	---	200	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 30MHz	P_{IN} = 3.8 W	V_{CE} =12.5V	75	---	---	WPEP
G_P	f = 30MHz	P_{IN} = 3.8 W	V_{CE} =12.5V	13	---	---	dB
IMD*	f = 30MHz	V_{CC} =12.5V	I_{CQ} = 100mA	-32	---	---	dB_C
C_{OB}	f = 1 MHz	V_{CB} =12V		---	350	---	pf
Condition	f1 = 30.000 MHz	f2 = 30.001 MHz					

IMPEDANCE DATA

FREQ	$Z_{IN}(\Omega)$	$Z_{CL}(\Omega)$
30 MHz	0.7 + j0.75	1.2 + j1.0

P_{IN} = 3.8W
V_{CC}=12.5V

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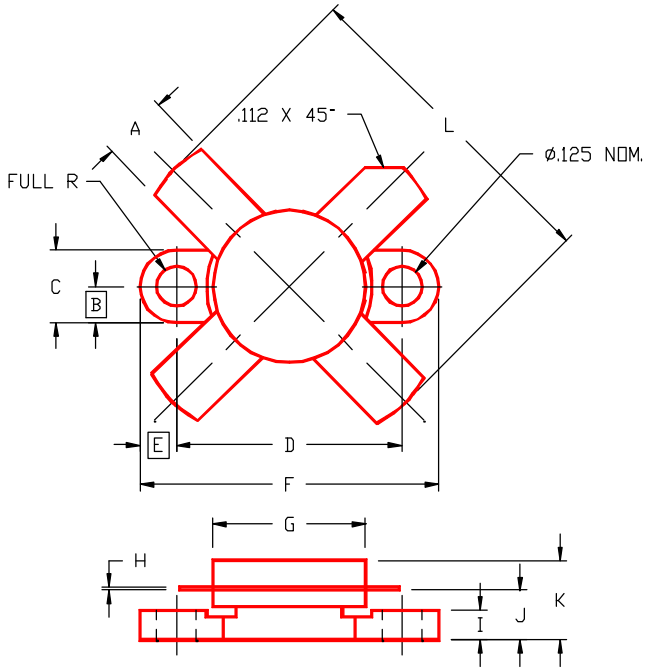
PACKAGE MECHANICAL DATA



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			