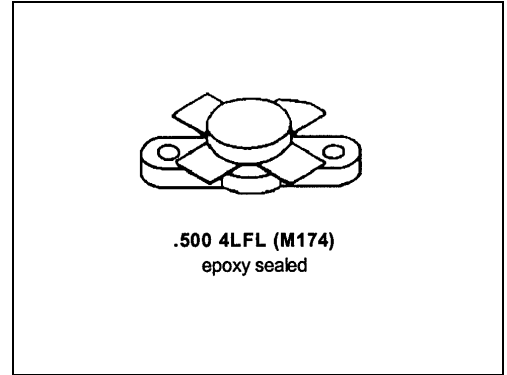


MS1051

RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

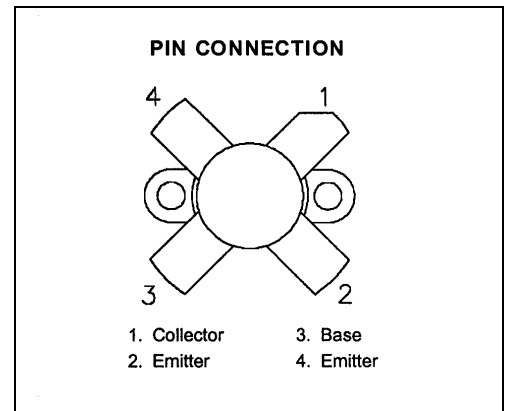
Features

30 MHz
 12.5 VOLTS
 $P_{OUT} = 100$ WATTS
 $G_{PE} = 12.0$ dB MINIMUM
 $IMD = -30$ dBc
 GOLD METALLIZATION
 COMMON EMITTER CONFIGURATION



DESCRIPTION:

The MS1051 is a 12.5 V Class C epitaxial silicon NPN planar transistor designed primarily for HF communications. This device utilizes state-of-the-art diffused emitter ballasting to achieve extreme ruggedness under severe operating conditions.



ABSOLUTE MAXIMUM RATINGS (T_{case} = 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 _{DISS}	Power Dissipation	290	W
T _J	Junction Temperature	+200	C
T _{STG}	Storage Temperature	-65 to +150	C

Thermal Data

R _{TH(J-C)}	Thermal Resistance Junction-case	0.6	C/W
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ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

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

DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	f = 30 MHz V_{CE} = 12.5 V I_{CQ} = 150mA	100	---	---	W
G_P	f = 30 MHz V_{CE} = 12.5 V I_{CQ} = 150mA	11	13	---	dB
IMD₃*	P_{OUT} = 100 W PEP V_{CE} = 12.5 V I_{CQ} = 150mA	---	---	-30	dBc
C_{OB}	f = 1 MHz V_{CB} = 12.5 V	---	400	---	pf
Conditions	f1 = 30.000MHz f2 = 30.001MHz				

IMPEDANCE DATA

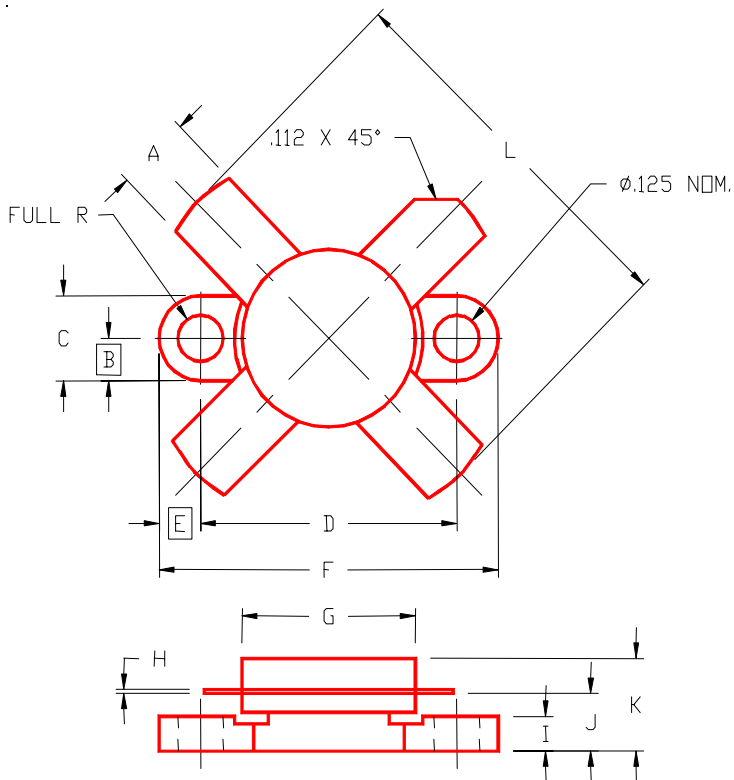
FREQ	Z _{IN} (Ω)	Z _{CL} (Ω)
30 MHz	0.57 + j 0.78	0.80 + j 0.43

P_{OUT} = 100 WPEP

V_{CE} = 12.5 V

MS1051

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			