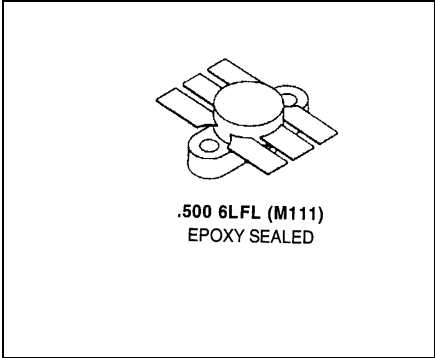


MS1503

RF & MICROWAVE TRANSISTORS WIDE BAND VHF/UHF APPLICATIONS

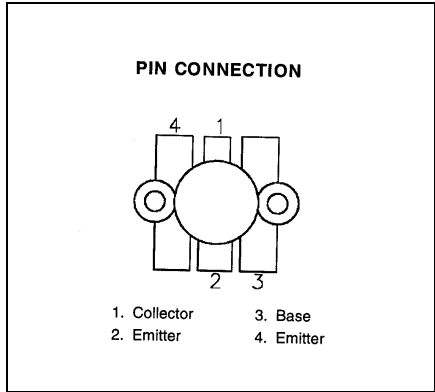
Features

- 400 MHz
- 28 VOLTS
- GOLD METALIZATION
- $P_{OUT} = 100$ WATTS
- $G_P = 7.0$ dB GAIN MINIMUM
- COMMON EMITTER CONFIGURATION



DESCRIPTION:

The MS1503 is a 28V Class C epitaxial silicon NPN planar transistor designed primarily for UHF communications. The device utilizes diffused emitter resistors to achieve infinite VSWR capability under operating conditions. Internal impedance matching produces optimum power gain and efficiency over the 225-400MHz band.



ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	33	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	4.0	A
P_{DISS}	Power Dissipation	250	W
T_J	Junction Temperature	+200	°C
T_{STG}	Storage Temperature	-65 +150	°C

Thermal Data

$R_{TH(J-C)}$	Thermal Resistance Junction-case	0.7	°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 = 100 mA	I _E = 0 V	60	---	---	V
BV _{CEO}	I _C = 50 mA	I _B = 0 mA	33	---	---	V
BV _{EBO}	I _E = 20 mA	I _C = 0 mA	4.0	---	---	V
I _{CES}	V _{CB} = 28 V	I _E = 0 mA	---	---	25	mA
HFE	V _{CE} = 5 V	I _C = 1 A	20	---	200	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P _{OUT}	f = 400 MHz	P _{IN} = 20W	V _{CE} = 28V	100	---	---	W
G _P	f = 400 MHz	P _{IN} = 20W	V _{CE} = 28V	7.0	---	---	dB
η _C	f = 400 MHz	P _{IN} = 20W	V _{CE} = 28V	50	---	---	%
Cob	f = 1 MHz	V _{CB} = 28V		---	---	105	pf

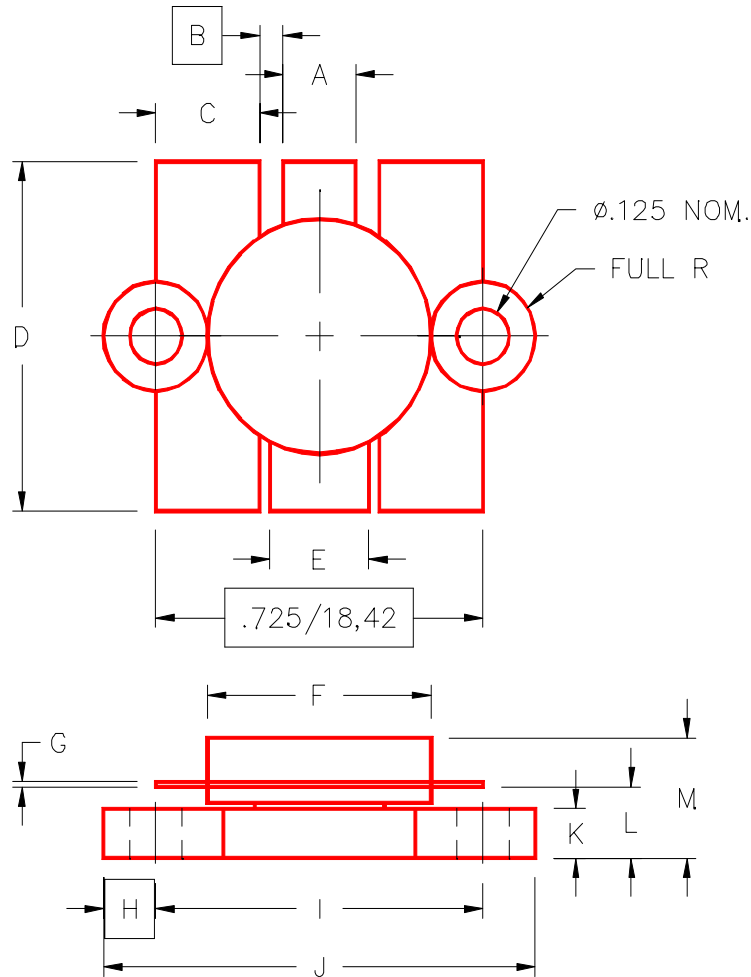
IMPEDANCE DATA

FREQ	Z _{IN} (Ω)	Z _{CL} (Ω)
225 MHz	1.3 + j1.8	5.4 – j0.5
300 MHz	1.1 + j2.4	3.9 – j0.7
350 MHz	0.8 + j3.0	2.6 – j1.0
375 MHz	0.75 + j3.5	2.2 – j1.4
400 MHz	0.70 + j3.6	1.8 – j1.9

P_{IN} = 20 W
V_{CE} = 28 V

PACKAGE MECHANICAL DATA

PACKAGE STYLE M111



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.150/3,43	.160/4,06	I	.720/18,29	.730/18,54
B	.045/1,14		J	.970/24,64	.980/24,89
C	.210/5,33	.220/5,59	K	.095/2,41	.105/2,67
D	.835/21,21	.865/21,97	L	.150/3,81	.170/4,32
E	.200/5,08	.210/5,33	M		.280/7,11
F	.490/12,45	.510/12,95			
G	.003/0,08	.007/0,18			
H	.125/3,18				