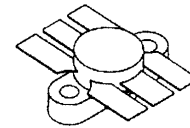


MS1503

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

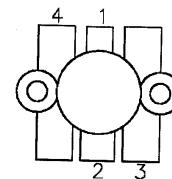


.500 6LFL (M111)
EPOXY SEALED

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.

PIN CONNECTION



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

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
---------------	----------------------------------	-----	------

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

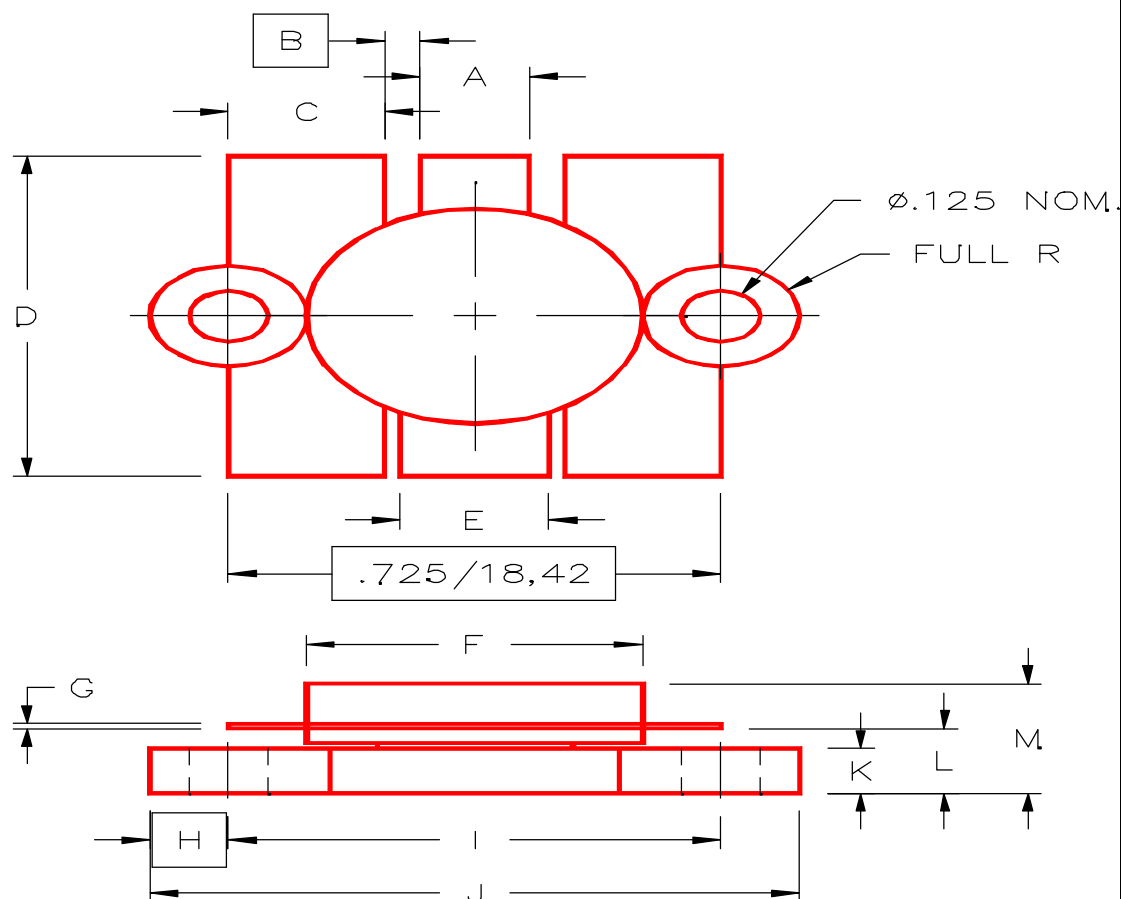
FREQ	Z _{IN} (Ω)	Z _{CL} (Ω)
225 MHz	1.3 + j1.8	5.4 – j0.5
300 MHz	1.1 + j2.4	3.9 – j0.7
350 MHz	0.8 + j3.0	2.6 – j1.0
375 MHz	0.75 + j3.5	2.2 – j1.4
400 MHz	0.70 + j3.6	1.8 – j1.9

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				