



THE DATASHEET OF MS1003

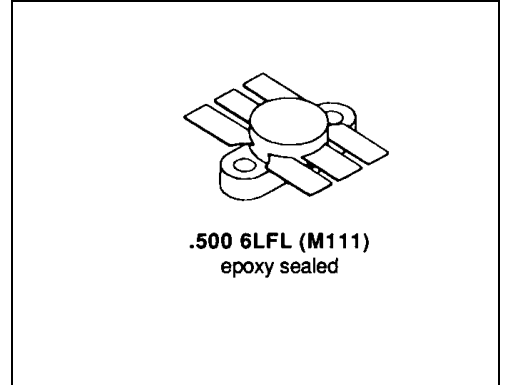


MS1003

RF & MICROWAVE TRANSISTORS VHF MOBILE APPLICATIONS

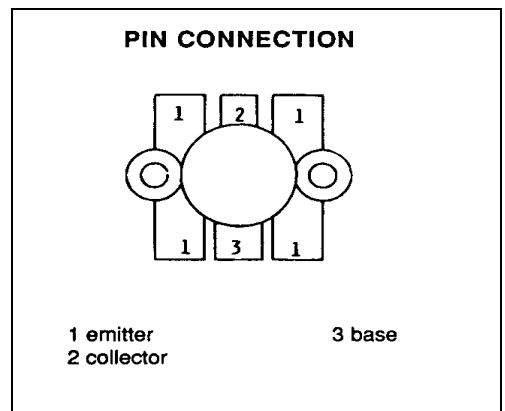
Features

- 175 MHz
- 12.5 VOLTS
- P_{OUT} = 100 WATTS
- G_p = 6.0 dB MINIMUM
- COMMON EMITTER CONFIGURATION



DESCRIPTION:

The MS1003 is a 12.5 V Class C epitaxial silicon NPN transistor designed primarily for VHF, FM communications. Diffused emitter resistors provide high VSWR capability under rated operating conditions. Internal impedance matching ensures optimum power gain and efficiency over the 136-175 MHz band.



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 _{CES}	Collector-Emitter Voltage	36	V
V _{EBO}	Emitter-Base Voltage	4.0	V
I _C	Device Current	20	A
P _{DISS}	Power Dissipation	270	W
T _J	Junction Temperature	+200	°C
T _{STG}	Storage Temperature	-65 to +150	°C

Thermal Data

R _{TH(J-C)}	Junction-case Thermal Resistance	0.65	°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 = 50mA	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 = 10mA	I_C = 0mA	4.0	---	---	V
I_{CES}	V_{CE} = 15V	I_E = 0mA	---	---	15	mA
h_{FE}	V_{CE} = 5V	I_C = 5A	10	---	100	---

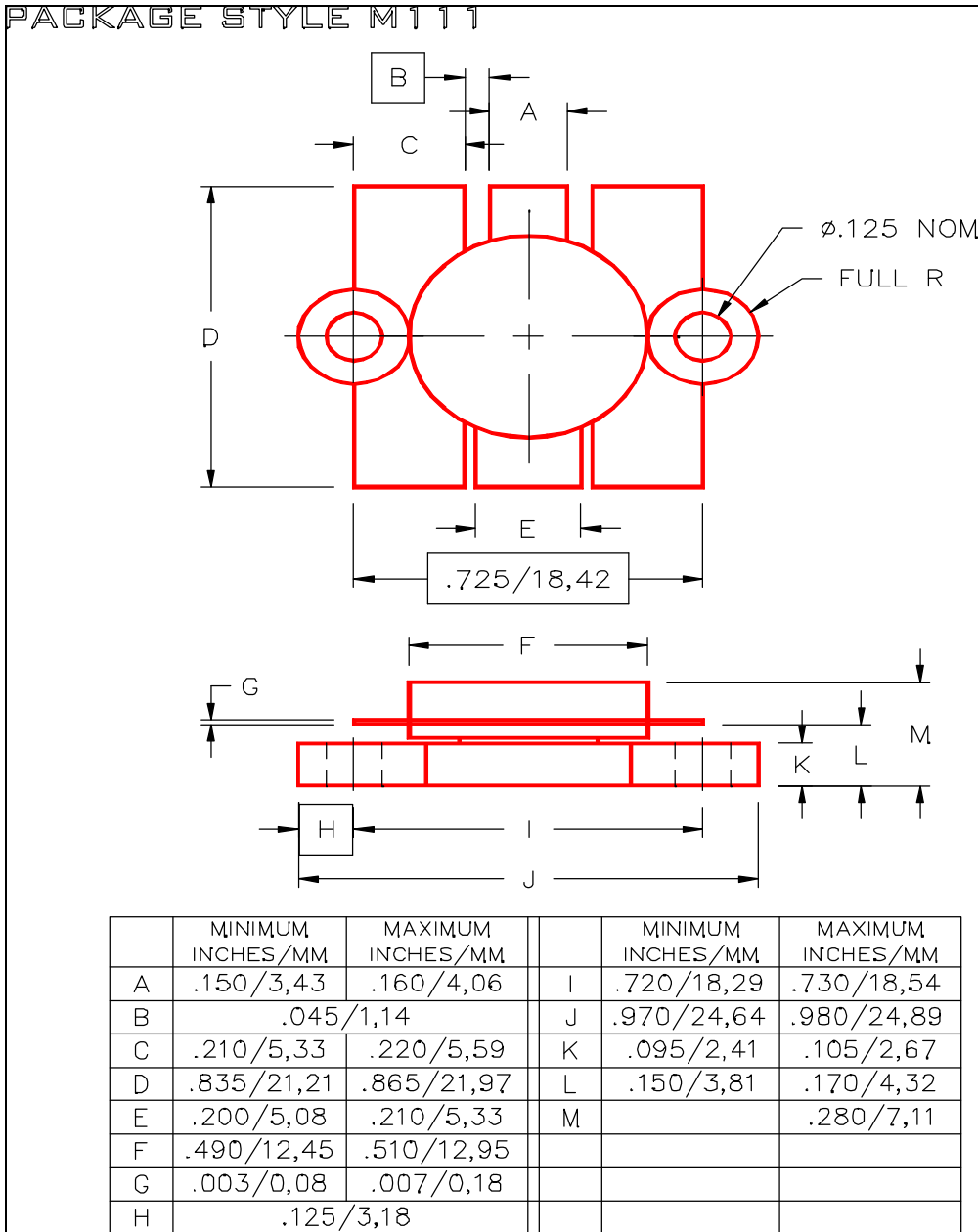
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 175 MHz	P_{IN} = 25 W	V_{CC} = 12.5V	100	---	---	W
G_p	f = 175 MHz	P_{IN} = 25 W	V_{CC} = 12.5V	6.0	---	---	dB
C_{OB}	f = 1 MHz	V_{CB} = 12.5 V		---	---	390	pF

IMPEDANCE DATA

FREQ	Z _{IN} (Ω)	Z _{CL} (Ω)
175 MHz	1.5 - j0.9	0.5 - j1.0

PACKAGE MECHANICAL DATA



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