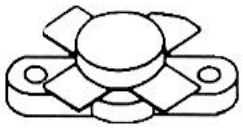
RF Products
Microsemi
Progress Powered by Technology

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

MS1253

RF & MICROWAVE TRANSISTORS HF/VHF APPLICATIONS

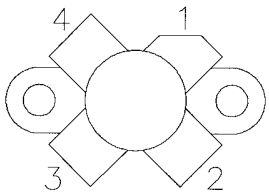


.380 4LFL (M113)
epoxy sealed

Features

- 50 MHz
- 12.5 VOLTS
- P_{OUT} = 70 WATTS
- G_p = 10 dB MINIMUM
- COMMON EMITTER CONFIGURATION

PIN CONNECTION



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

DESCRIPTION:

The MS1253 is a 12.5 V Class C epitaxial silicon NPN transistor designed primarily for land mobile transmitter applications. This device utilizes emitter ballasting, is extremely stable and capable of withstanding high VSWR under operating conditions.

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	45	V
V_{CEO}	Collector-Emitter Voltage	18	V
V_{EBO}	Emitter-Base Voltage	3.5	V
P_{DISS}	Power Dissipation	183	W
I_C	Device Current	12.0	A
T_J	Junction Temperature	200	°C
T_{STG}	Storage Temperature	-65 to +150	°C

Thermal Data

$R_{TH(J-C)}$	Thermal Resistance Junction-case	1.05	°C/W

RF Products
Microsemi
Progress Powered by Technology

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

MS1253

ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions		Value			
			Min.	Typ.	Max.	Unit
BVcbo	I_C = 50 mA	I_E = 0 mA	45	---	---	V
BVces	I_C = 100 mA	V_{BE} = 0 V	40	---	---	V
BVebo	I_E = 10 mA	I_E = 0 mA	3.5	---	---	V
BVceo	I_E = 50 mA	I_B = 0 mA	18	---	---	V
Ices	V_{CE} = 15 V	I_E = 0 mA	---	---	10	mA
H_{FE}	V_{CE} = 5 V	I_C = 5 A	10	---	200	---

DYNAMIC

Symbol	Test Conditions			Value			
				Min.	Typ.	Max.	Unit
P_{OUT}	f = 50 MHz	P_{IN} = 7W	V_{CE} = 12.5V	70	---	---	W
G_{PE}	f = 50 MHz	P_{IN} = 7W	V_{CE} = 12.5V	10	---	---	dB
η_C	f = 50 MHz	P_{IN} = 7W	V_{CE} = 12.5V	45	---	---	%
Cob	f = 1 MHz	V_{CB} = 12.5 V		---	---	300	pf

IMPENDANCE DATA

FREQ	$Z_{IN}(\Omega)$	$Z_{CL}(\Omega)$
50 MHz	0.8 + j0.9	1.2 + j0.6

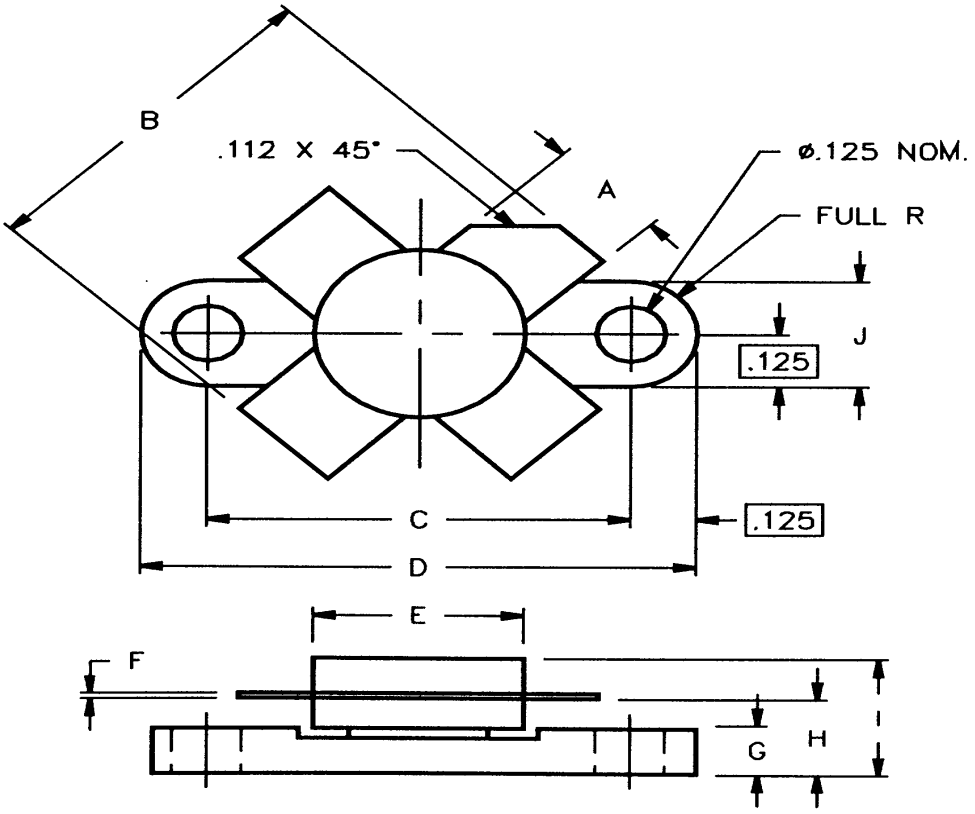
P_{OUT} = 70W
V_{CE} = 12.5V

RF Products
Microsemi
Progress Powered by Technology

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

MS1253

PACKAGE MECHANICAL DATA



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.220/5,59	.230/5,84	I		.260/7,11
B	.785/19,94		J	.240/6,10	.255/6,48
C	.720/18,29	.730/18,54			
D	.970/24,64	.980/24,89			
E		.385/9,78			
F	.004/0,10	.006/0,15			
G	.085/2,16	.105/2,67			
H	.160/4,06	.180/4,57			