ADVANCED POWER TECHNOLOGY RF®

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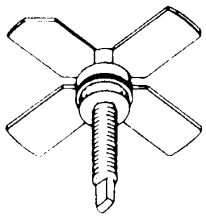
MS1404

RF & MICROWAVE TRANSISTORS
UHF MOBILE APPLICATIONS



.280 4L STUD (M122)
epoxy sealed

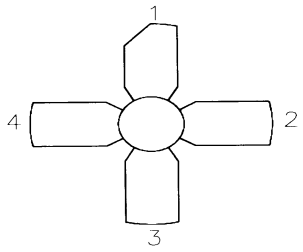
Features

- 470 MHz
- 12.5 VOLTS
- P_{OUT} = 5.0 WATT
- G_P = 8.5 dB MINIMUM
- COMMON EMITTER CONFIGURATION

DESCRIPTION:

The MS1404 is a 12.5V Class C epitaxial silicon NPN planar transistor designed primarily for UHF communications. This device utilizes improved metallization to achieve infinite VSWR at rated operating conditions.

PIN CONNECTION



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

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - Base Voltage	36	V
V_{CER}	Collector – Emitter Voltage	18	V
V_{CES}	Collector – Emitter Voltage	36	V
V_{EBO}	Emitter- Base Voltage	4.0	V
P_{DISS}	Power Dissipation	37	W
I_C	Device Current*	2.0	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	11.6	°C/W

ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	I_C = 10 mA	V_{BE} = 0 mA	36	---	---	V
BV_{CEO}	I_C = 50 mA	I_B = 0 mA	16	---	---	V
BV_{EBO}	I_E= 2 mA	I_C = 0 mA	4.0	---	---	V
I_{CBO}	V_{CB} = 15 V	I_E = 0 mA	---	---	1	mA
HFE	V_{CE} = 5 V	I_C = 200 mA	20	---	---	---

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 470 MHz	P_{IN} = 0.70 W	V_{CC} = 12.5V	5.0	---	---	W
G_P	f = 470 MHz	P_{IN} = 0.70 W	V_{CC} = 12.5V	8.5	---	---	dB
C_{OB}	f = 1 MHz	V_{CB} = 12 V		---	19	---	pF

IMPEDANCE DATA:

FREQUENCY	Z_{in} (Ω)	Z_{cl} (Ω)
450 MHz	1.4 + j 2.0	10.4 – j 6.9
470 MHz	1.4 + j 2.9	11.4 + j 5.8
512 MHz	1.5 + j 3.4	11.9 + j 3.2

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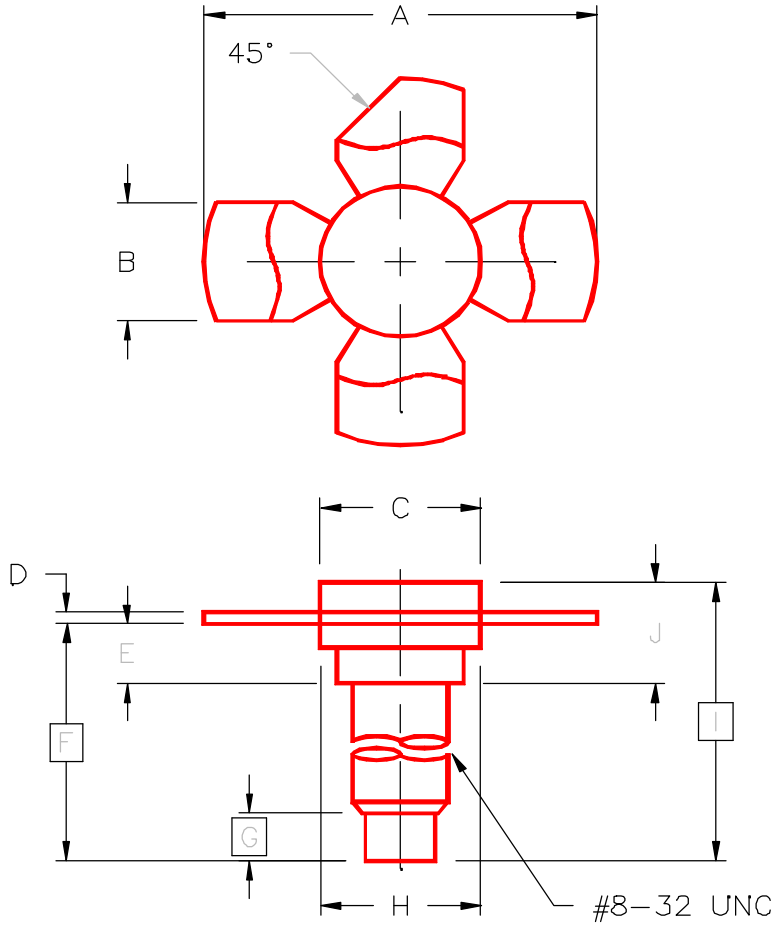
MS1404

PACKAGE MECHANICAL DATA

PACKAGE STYLE M122



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	1.010/25,65	1.055/26,80	I	.640/16,26	
B	.220/5,59	.230/5,84	J	.175/4,45	.217/5,51
C	.270/6,86	.285/7,24			
D	.003/0,08	.007/0,18			
E	.117/2,97	.137/3,48			
F	.572/14,53				
G	.130/3,30				
H	.275/6,99	.285/7,24			