

MS1402

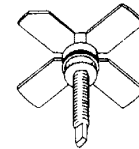
RF AND MICROWAVE TRANSISTORS UHF MOBILE APPLICATIONS

Features

- 450 - 512 MHz
- 12.5 Volts
- Efficiency 55%
- $P_{OUT} = 2.0 \text{ W Min.}$
- $G_P = 10.0 \text{ dB Gain}$

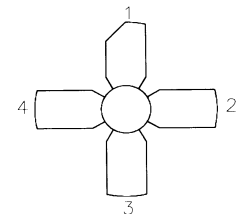
DESCRIPTION:

The MS1402 is a 12.5 V 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.



.280 4L STUD (M122)
epoxy sealed

PIN CONNECTION



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

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	36	V
V_{CEO}	Collector-Emitter Voltage	16	V
V_{CES}	Collector-Emitter Voltage	36	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	0.75	A
P_{DISS}	Power Dissipation	5	W
T_J	Junction Temperature	+200	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	-65 to +150	$^{\circ}\text{C}$

Thermal Data

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	35	$^{\circ}\text{C/W}$
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ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
BV_{CES}	I_C = 5 mA V_{BE} = 0 V	36			V
BV_{CEO}	I_C = 25 mA I_B = 0 mA	16			V
BV_{EBO}	I_E = 1 mA I_C = 0 mA	4.0			V
I_{CBO}	V_{CB} = 15 V I_E = 0 mA			1.0	mA
h_{FE}	V_{CE} = 5 V I_C = 100 mA	20		100	

DYNAMIC

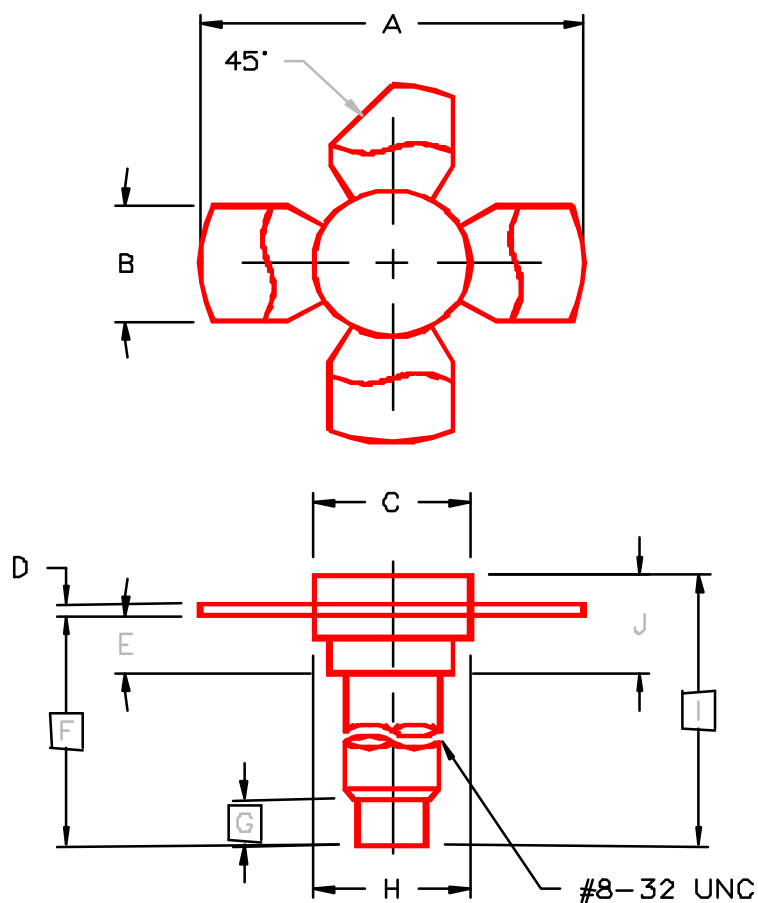
Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
P_{OUT}	f = 470 MHz P_{IN} = 0.20 W V_{CC} = 12.5 V	2.0			W
G_P	f = 470 MHz P_{IN} = 0.20 W V_{CC} = 12.5 V	10			dB
C_{OB}	f = 1 MHz V_{CB} = 12 V			10	pF

IMPEDANCE DATA

Freq.	Z _{IN} (Ω)	Z _{CL} (Ω)
450 MHz	2.7 – j 0.9	11.5 + j 15.0
470 MHz	2.6 – j 1.3	12.2 + j 13.5
512 MHz	2.2 – j 1.7	12.7 + j 13.0

PACKAGE MECHANICAL DATA

PACKAGE STYLE M122



	MIN/MUM INCHES/MM	MAXIMUM INCHES/MM		MIN/MUM 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			