



MS1402

RF & MICROWAVE TRANSISTORS

PRODUCT PREVIEW

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.

IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

KEY FEATURES

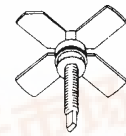
- 450 - 512 MHz
- 12.5 Volts
- Efficiency 55%
- $P_{OUT} = 2.0$ W Min.
- $G_P = 10.0$ dB Gain

APPLICATIONS/BENEFITS

- UHF Mobile Applications

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

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	$^{\circ}C$
T_{STG}	Storage Temperature	-65 to +150	$^{\circ}C$

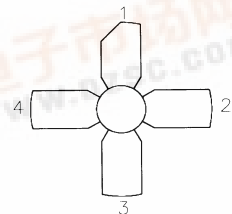


.280 4L STUD (M122)
epoxy sealed

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	35	$^{\circ}C/W$
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PIN CONNECTION



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





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STATIC ELECTRICAL SPECIFICATIONS (TCASE = 25°C)

Symbol	Test Conditions	MS1402			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_{CB0}	V_{CB} = 15 V I_E = 0 mA	—	—	1.0	mA
h_{FE}	V_{CE} = 5 V I_C = 100 mA	20	—	100	—

DYMANIC ELECTRICAL SPECIFICATIONS (TCASE = 25°C)

Symbol	Test Conditions	MS1402			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



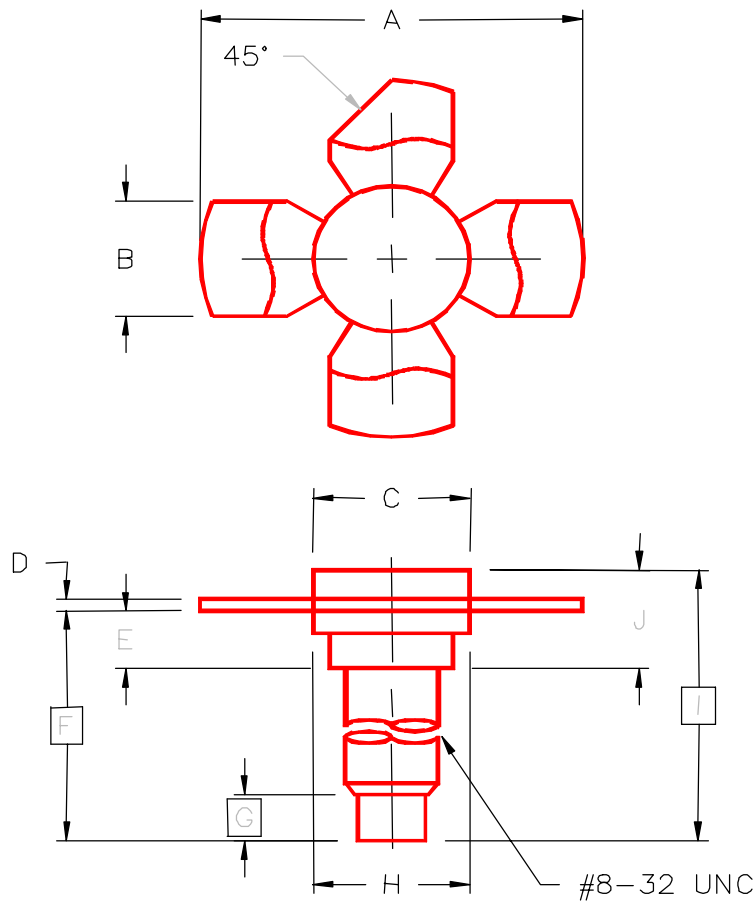
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PACKAGE STYLE M122



	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			



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WWW.MICROSEMI.COM

NOTES