

DESCRIPTION

The SD1014-02 is an epitaxial silicon NPN planar transistor designed primarily for VHF mobile and marine transmitters. The device utilizes emitter ballasting resistors and improved metallization systems to achieve extreme ruggedness under severe operating conditions.

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

KEY FEATURES

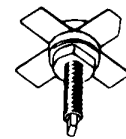
- 175 MHz
- 12.5 Volts
- Common Emitter
- $P_{OUT} = 15$ W Min.
- $G_P = 6.3$ dB Gain

APPLICATIONS/BENEFITS

- VHF FM 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	18	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	2.5	A
P_{DISS}	Power Dissipation	31	W
T_J	Junction Temperature	+200	$^{\circ}C$
T_{STG}	Storage Temperature	-65 to +150	$^{\circ}C$

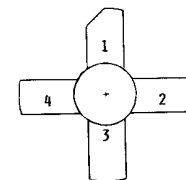


.380 4LSTUD(M135)
epoxy sealed

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	5.6	$^{\circ}C/W$
---------------	----------------------------------	-----	---------------

PIN CONNECTION



1 collector 3 base
2 emitter 4 emitter

STATIC ELECTRICAL SPECIFICATIONS (T_{CASE} = 25°C)

Symbol	Test Conditions		SD1014-02			Units
			Min.	Typ.	Max.	
BV_{CES}	I_C = 10 mA	V_{BE} = 0 V	36	—	—	V
BV_{CEO}	I_C = 20 mA	I_B = 0 mA	18	—	—	V
BV_{EBO}	I_E = 2 mA	I_C = 0 mA	4.0	—	—	V
I_{CBO}	V_{CB} = 15 V	I_E = 0 mA	—	—	0.5	mA
h_{FE}	V_{CE} = 5 V	I_C = 500 mA	5	—	200	—

DYNAMIC ELECTRICAL SPECIFICATIONS (T_{CASE} = 25°C)

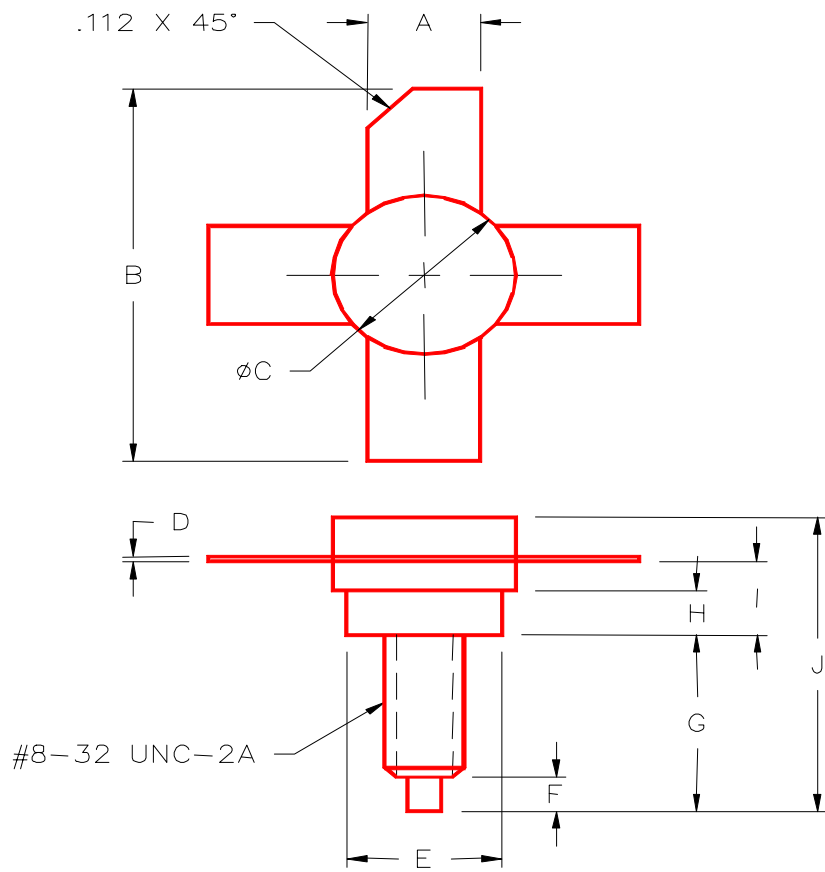
Symbol	Test Conditions			SD1014-02			Units
				Min.	Typ.	Max.	
P_{OUT}	f = 175 MHz	P_{IN} = 3.5 W	V_{CE} = 12.5 V	15	—	—	W
G_p	f = 175 MHz	P_{IN} = 3.5 W	V_{CE} = 12.5 V	6.3	—	—	dB
η_C	f = 175 MHz	P_{OUT} = 3.5 W	V_{CE} = 12.5 V	60	—	—	%
C_{OB}	f = 1 MHz	V_{CB} = 15 V		—	—	85	pF

IMPEDANCE DATA

P _{IN} (W)	P _{OUT} (W)	Z _{IN} (Ω)	Z _{OUT} (Ω)
5	27.6	1.0 - j 1.4	3.3 + j 1.2

P_{IN} = 3.0 W
V_{CC} = 12.5 V

PACKAGE STYLE M135



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.220/5,59	.230/5,84	I	.155/3,94	.175/4,45
B	.980/24,89		J		.750/19,05
C	.370/9,40	.385/9,78			
D	.004/0,10	.007/0,18			
E	.320/8,13	.330/8,38			
F	.100/2,54	.130/3,30			
G	.450/11,43	.490/12,45			
H	.090/2,29	.100/2,54			



SD1014-02

RF & MICROWAVE TRANSISTORS

PRODUCT PREVIEW

www.Microsemi.com

NOTES