

DESCRIPTION

The SD1146 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

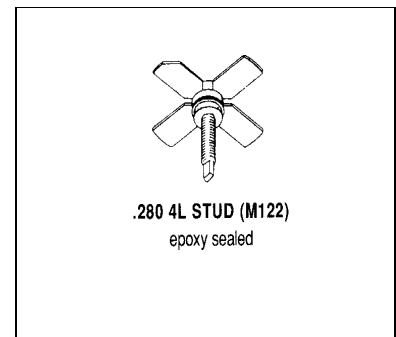
- 470 MHz
- 12.5 Volts
- Efficiency 60%
- Common Emitter
- $P_{OUT} = 10$ W Min.
- $G_p = 6.0$ dB Gain

APPLICATIONS/BENEFITS

- UHF Mobile Applications

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

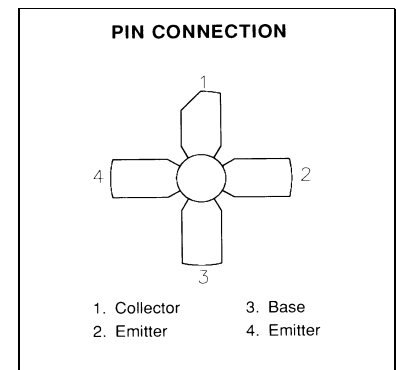
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	36	V
V_{CEO}	Collector-Emitter Voltage	16	V
V_{CES}	Collector-Emitter Voltage	36	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	2.0	A
P_{DISS}	Power Dissipation	37.5	W
T_J	Junction Temperature	+200	$^{\circ}C$
T_{STG}	Storage Temperature	-65 to +150	$^{\circ}C$



THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	4.7	$^{\circ}C/W$
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PIN CONNECTION



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

Symbol	Test Conditions	SD1146			Units
		Min.	Typ.	Max.	
BV_{CES}	I_C = 200 mA V_{BE} = 0 V	36	—	—	V
BV_{CEO}	I_C = 200 mA	16	—	—	V
BV_{EBO}	I_E = 4 mA I_C = 0 mA	4.0	—	—	V
I_{CBO}	V_{CB} = 15 V I_E = 0 mA	—	—	2	mA
I_{CES}	V_{CE} = 15 V I_C = 0 mA	—	—	5	mA
h_{FE}	V_{CE} = 5 V I_C = .5 A	20	—	200	—

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

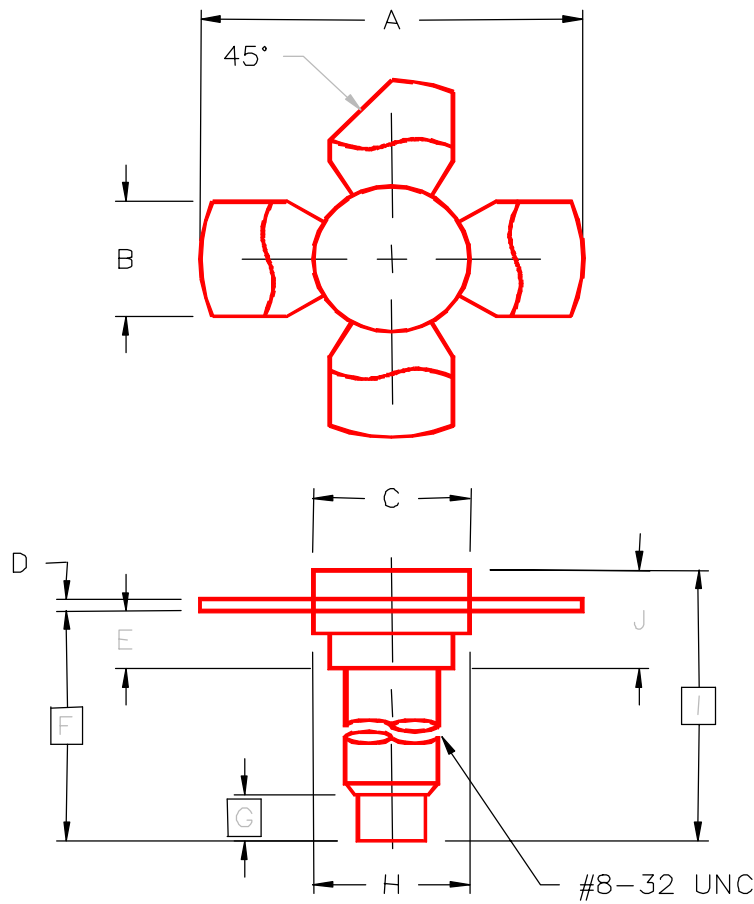
Symbol	Test Conditions	SD1146			Units
		Min.	Typ.	Max.	
P_{OUT}	f = 470 MHz P_{IN} = 2.5 W V_{CE} = 12.5 V	10	—	—	W
η_C	f = 470 MHz P_{IN} = 2.5 W V_{CE} = 12.5 V	60	—	—	%
G_p	f = 470 MHz P_{IN} = 2.5 W V_{CE} = 12.5 V	6	—	—	dB
C_{OB}	f = 1 MHz V_{CB} = 12.5 V	—	—	45	pF

IMPEDANCE DATA

Freq.	Z _{IN} (Ω)	Z _{CL} (Ω)
470 MHz	1.6 + j 2.2	6.0 - j 0.34

P_{OUT} = 10.0 W
V_{CC} = 12.5 V

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			



SD1146

RF & MICROWAVE TRANSISTORS

PRODUCT PREVIEW

www.Microsemi.com

NOTES