

**DESCRIPTION**

The SD1143 is a 12.2 V Class C epitaxial silicon NPN planar transistor designed primarily for VHF Communications. It withstands very high VSWR under 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
- $P_{OUT} = 10$  W Min.
- $G_P = 10$  dB Gain

**APPLICATIONS/BENEFITS**

- VHF Mobile Applications

**ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)**

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	36	V
V <sub>CEO</sub>	Collector-Emitter Voltage	18	V
V <sub>CES</sub>	Collector-Emitter Voltage	36	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>C</sub>	Device Current	2.0	A
P <sub>DISS</sub>	Power Dissipation	20	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	-65 to +150	°C

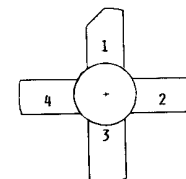


**.380 4LSTUD(M135)**  
epoxy sealed

**THERMAL DATA**

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	8.75	°C/W
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**PIN CONNECTION**



1 collector                      3 base  
2 emitter                         4 emitter

**STATIC ELECTRICAL SPECIFICATIONS (T<sub>CASE</sub> = 25°C)**

Symbol	Test Conditions	SD1143			Units
		Min.	Typ.	Max.	
<b>BV<sub>CES</sub></b>	<b>I<sub>C</sub> = 50 mA</b> <b>V<sub>BE</sub> = 0 V</b>	36	—	—	V
<b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub> = 15 mA</b> <b>I<sub>B</sub> = 0 mA</b>	18	—	—	V
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 2.5 mA</b> <b>I<sub>C</sub> = 0 mA</b>	4.0	—	—	V
<b>I<sub>CBO</sub></b>	<b>V<sub>CB</sub> = 15 V</b> <b>I<sub>E</sub> = 0 mA</b>	—	—	1	mA
<b>h<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5 V</b> <b>I<sub>C</sub> = 250 mA</b>	5	—	200	—

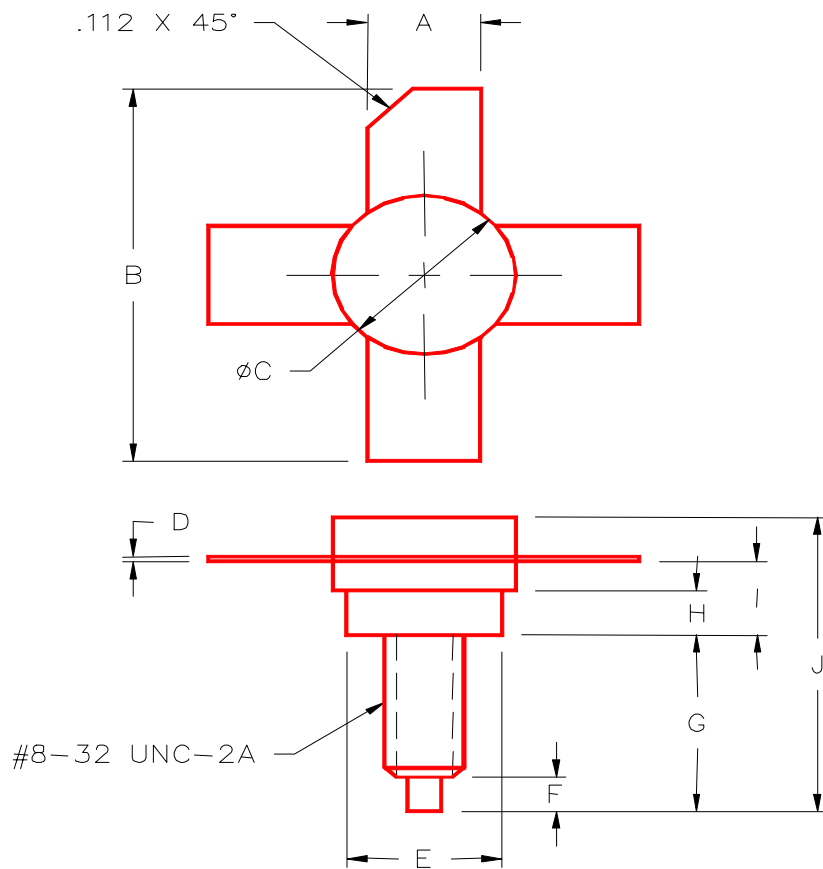
**DYNAMIC ELECTRICAL SPECIFICATIONS (T<sub>CASE</sub> = 25°C)**

Symbol	Test Conditions	SD1143			Units
		Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 175 MHz</b> <b>P<sub>IN</sub> = 1 W</b> <b>V<sub>CE</sub> = 12.5 V</b>	10	—	—	W
<b>G<sub>p</sub></b>	<b>f = 175 MHz</b> <b>P<sub>IN</sub> = 1 W</b> <b>V<sub>CE</sub> = 12.5 V</b>	10	—	—	dB
<b>C<sub>OB</sub></b>	<b>f = 1 MHz</b> <b>V<sub>CB</sub> = 15 V</b>	—	—	45	pF

**IMPEDANCE DATA**

Freq.	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
175 MHz	1.3 - j.8	5.1 + j 3.8

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			



SD1143

**RF & MICROWAVE TRANSISTORS**

**PRODUCT PREVIEW**

www.Microsemi.com

NOTES