

**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, visit: <http://www.advancedpower.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 ( $T_{CASE} = 25^{\circ}C$ )**

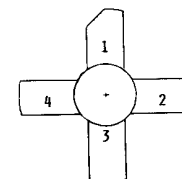
Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	36	V
$V_{CEO}$	Collector-Emitter Voltage	18	V
$V_{CES}$	Collector-Emitter Voltage	36	V
$V_{EBO}$	Emitter-Base Voltage	4.0	V
$I_C$	Device Current	2.0	A
$P_{DISS}$	Power Dissipation	20	W
$T_J$	Junction Temperature	+200	$^{\circ}C$
$T_{STG}$	Storage Temperature	-65 to +150	$^{\circ}C$



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

**THERMAL DATA**

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	8.75	$^{\circ}C/W$
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**PIN CONNECTION**


1 collector  
2 emitter

3 base  
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      V<sub>BE</sub> = 0 V</b>	36	—	—	V
<b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub> = 15 mA      I<sub>B</sub> = 0 mA</b>	18	—	—	V
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 2.5 mA      I<sub>C</sub> = 0 mA</b>	4.0	—	—	V
<b>I<sub>CBO</sub></b>	<b>V<sub>CB</sub> = 15 V      I<sub>E</sub> = 0 mA</b>	—	—	1	mA
<b>h<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5 V      I<sub>C</sub> = 250 mA</b>	5	—	200	—

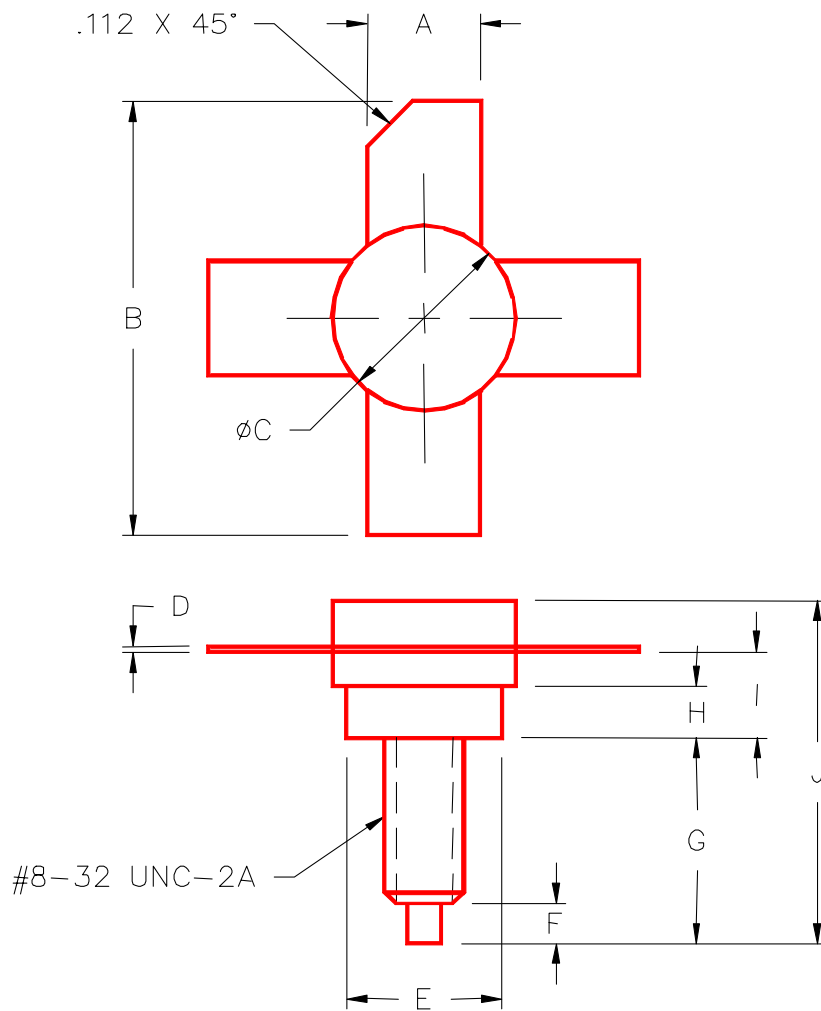
**DYNAMIC ELECTRICAL SPECIFICATIONS (T<sub>CASE</sub> = 25°C)**

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

