

**SD1143-01**

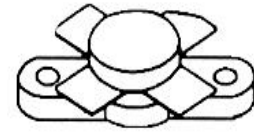
## RF & MICROWAVE TRANSISTORS VHF MOBILE APPLICATIONS

### Features

- 175 MHz
- 12.5 VOLTS
- $P_{OUT} = 10\text{ W}$
- $G_P = 10\text{ dB MINIMUM}$
- COMMON EMITTER CONFIGURATION

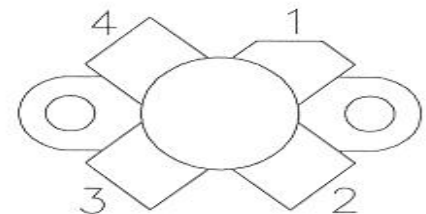
### DESCRIPTION:

The SD1143-01 is a 12.5 V epitaxial silicon, NPN transistor designed primarily for Class C, VHF communications equipment. Emitter ballast resistors provide high VSWR operating capability.



**.380 4LFL (M113)**  
epoxy sealed

### PIN CONNECTION



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

### ABSOLUTE MAXIMUM RATINGS ( $T_{case} = 25^{\circ}\text{C}$ )

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	36	V
$V_{CER}$	Collector-Emitter Voltage	18	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	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature	-65 to +150	$^{\circ}\text{C}$

### THERMAL DATA

$R_{TH(J-C)}$	Junction-case Thermal Resistance*	8.75	$^{\circ}\text{C/W}$
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## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

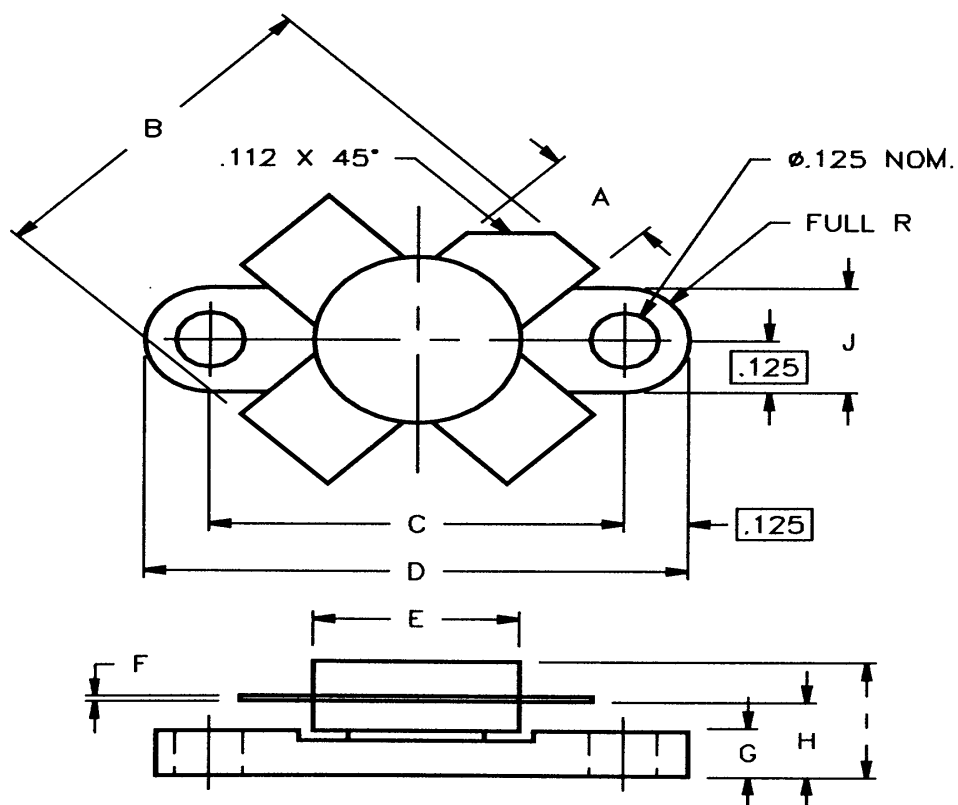
### STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
<b>BV<sub>CES</sub></b>	<b>I<sub>C</sub> = 50mA</b>	<b>V<sub>BE</sub> = 0V</b>	<b>36</b>	---	---	<b>V</b>
<b>BV<sub>CEO</sub></b>	<b>I<sub>E</sub> = 15mA</b>	<b>I<sub>B</sub> = 0mA</b>	<b>18</b>	---	---	<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 2.5mA</b>	<b>I<sub>C</sub> = 0mA</b>	<b>4.0</b>	---	---	<b>V</b>
<b>I<sub>CES</sub></b>	<b>V<sub>CE</sub> = 15 V</b>	<b>I<sub>E</sub> = 0mA</b>	-----	---	<b>2</b>	<b>mA</b>
<b>h<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5 V</b>	<b>I<sub>C</sub> = 250mA</b>	<b>5</b>	---	<b>200</b>	---

### DYNAMIC

Symbol	Test Conditions			Value			Unit
				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>CC</sub> = 12.5V</b>	<b>10</b>	---	---	<b>W</b>
<b>G<sub>P</sub></b>	<b>f = 175 MHz</b>	<b>P<sub>IN</sub> = 1 W</b>	<b>V<sub>CC</sub> = 12.5V</b>	<b>10</b>	---	---	<b>dB</b>
<b>C<sub>OB</sub></b>	<b>f = 1 MHz</b>	<b>V<sub>CB</sub> = 15V</b>		---	---	<b>45</b>	<b>pf</b>

**PACKAGE MECHANICAL DATA**



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.220/5,59	.230/5,84	I		.260/7,11
B	.785/19,94		J	.240/6,10	.255/6,48
C	.720/18,29	.730/18,54			
D	.970/24,64	.980/24,89			
E		.385/9,78			
F	.004/0,10	.006/0,15			
G	.085/2,16	.105/2,67			
H	.160/4,06	.180/4,57			