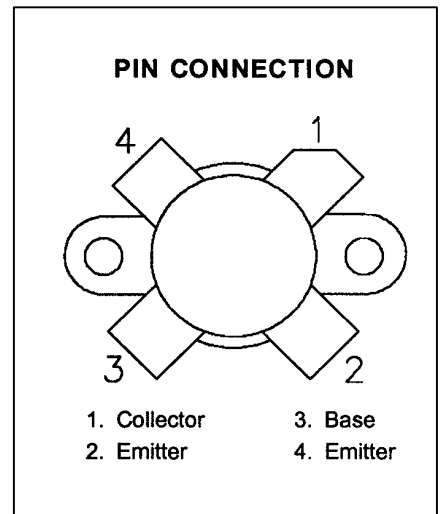
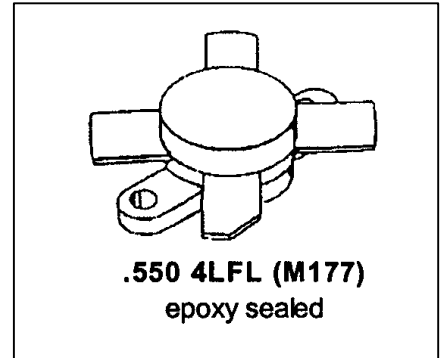


**MS1011**

**RF AND MICROWAVE TRANSISTORS  
HF SSB APPLICATIONS**

**Features**

- **OPTIMIZED FOR SSB**
- **30 MHz**
- **50 VOLTS**
- **IMD — 30 dB**
- **GOLD METALLIZATION**
- **COMMON EMITTER**
- **P<sub>OUT</sub> = 250 W PEP WITH 14.5 dB GAIN**



**DESCRIPTION:**

The MS1011 is a 50 V epitaxial silicon NPN planar transistor designed primarily for SSB and VHF communications. This device utilizes emitter ballasting for improved ruggedness and reliability.

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

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	110	V
V <sub>CEO</sub>	Collector-Emitter Voltage	55	V
V <sub>EBO</sub>	Emitter-Base Voltage	4	V
I <sub>C</sub>	Device Current	40	A
P <sub>DISS</sub>	Power Dissipation	330	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	-65 to +150	°C

**THERMAL DATA**

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	0.4	°C/W
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## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
<b>BV<sub>CES</sub></b>	<b>I<sub>C</sub> = 200 mA    V<sub>BE</sub> = 0 V</b>	<b>110</b>			<b>V</b>
<b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub> = 200 mA    I<sub>B</sub> = 0 mA</b>	<b>55</b>			<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 20 mA    I<sub>C</sub> = 0 mA</b>	<b>4</b>			<b>V</b>
<b>I<sub>CEO</sub></b>	<b>V<sub>CE</sub> = 30 V    I<sub>E</sub> = 0 mA</b>			<b>10</b>	<b>mA</b>
<b>I<sub>CES</sub></b>	<b>V<sub>CE</sub> = 60 V    I<sub>E</sub> = 0 mA</b>			<b>10</b>	<b>mA</b>
<b>h<sub>FE</sub></b>	<b>V<sub>CE</sub> = 6 V    I<sub>C</sub> = 1.4 A</b>	<b>15</b>		<b>45</b>	

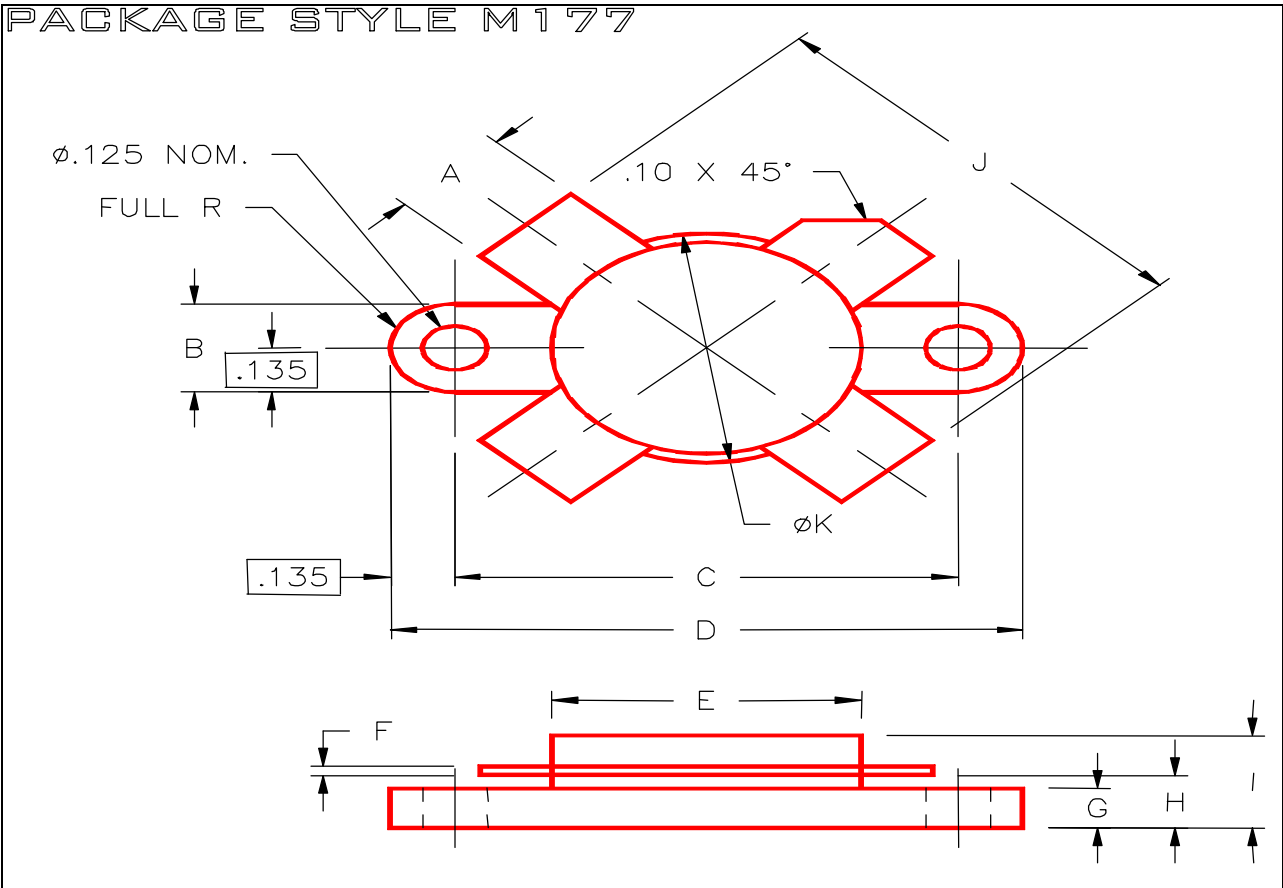
### DYNAMIC

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 30 MHz    V<sub>CE</sub> = 50 V    I<sub>CQ</sub> = 150 mA</b>	<b>250</b>			<b>W</b>
<b>G<sub>P</sub> *</b>	<b>P<sub>OUT</sub> = 250 W PEP    V<sub>CE</sub> = 50 V    I<sub>CQ</sub> = 150 mA</b>	<b>14.5</b>			<b>dB</b>
<b>IMD *</b>	<b>P<sub>OUT</sub> = 250 W PEP    V<sub>CE</sub> = 50 V    I<sub>CQ</sub> = 150 mA</b>			<b>-30</b>	<b>dBc</b>
<b>ç<sub>C</sub> *</b>	<b>P<sub>OUT</sub> = 250 W PEP    V<sub>CE</sub> = 50 V    I<sub>CQ</sub> = 150 mA</b>	<b>37</b>			<b>%</b>
<b>C<sub>OB</sub></b>	<b>f = 1 MHz    V<sub>CB</sub> = 50 V</b>			<b>360</b>	<b>PF</b>

**Note:** Two Tone Method: f<sub>1</sub> = 30.00 MHz; f<sub>2</sub> = 30.001 MHz  
 In Class C: G<sub>P</sub> Min. 13.5 dB. Efficiency 65% @ 30 MHz  
 G<sub>P</sub> Min. 10 dB. Efficiency 57% @ 70 MHz

**PACKAGE MECHANICAL DATA**

**PACKAGE STYLE M177**



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.225/5,72	.235/5,97	I		.280/7,11
B	.265/6,73	.275/6,96	J	1.080/27,43	1.120/28,45
C	.860/21,84	.870/22,10	K	.625/15,88	.635/16,13
D	1.130/28,70	1.140/28,96			
E	.545/13,84	.555/14,10			
F	.003/0,08	.007/0,18			
G	.100/2,54	.118/3,00			
H	.150/3,81	.170/4,32			