

MS1011

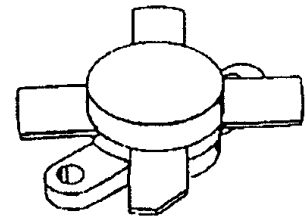
RF AND MICROWAVE TRANSISTORS HF SSB APPLICATIONS

Features

- OPTIMIZED FOR SSB
- 30 MHz
- 50 VOLTS
- IMD — 30 dB
- GOLD METALLIZATION
- COMMON EMITTER
- $P_{OUT} = 250$ W PEP WITH 14.5 dB GAIN

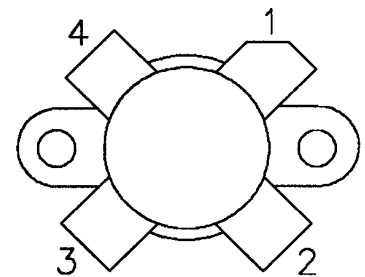
DESCRIPTION:

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.



.550 4LFL (M177)
epoxy sealed

PIN CONNECTION



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

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	110	V
V_{CEO}	Collector-Emitter Voltage	55	V
V_{EBO}	Emitter-Base Voltage	4	V
I_C	Device Current	40	A
P_{DISS}	Power Dissipation	330	W
T_J	Junction Temperature	+200	°C
T_{STG}	Storage Temperature	-65 to +150	°C

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	0.4	°C/W
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ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
BV_{CES}	I_C = 200 mA V_{BE} = 0 V	110			V
BV_{CEO}	I_C = 200 mA I_B = 0 mA	55			V
BV_{EBO}	I_E = 20 mA I_C = 0 mA	4			V
I_{CEO}	V_{CE} = 30 V I_E = 0 mA			10	mA
I_{CES}	V_{CE} = 60 V I_E = 0 mA			10	mA
h_{FE}	V_{CE} = 6 V I_C = 1.4 A	15		45	

DYNAMIC

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
P_{OUT}	f = 30 MHz V_{CE} = 50 V I_{CQ} = 150 mA	250			W
G_p *	P_{OUT} = 250 W PEP V_{CE} = 50 V I_{CQ} = 150 mA	14.5			dB
IMD *	P_{OUT} = 250 W PEP V_{CE} = 50 V I_{CQ} = 150 mA			-30	dBc
Ƴ_C *	P_{OUT} = 250 W PEP V_{CE} = 50 V I_{CQ} = 150 mA	37			%
C_{OB}	f = 1 MHz V_{CB} = 50 V			360	PF

Note: Two Tone Method: f₁ = 30.00 MHz; f₂ = 30.001 MHz
 In Class C: G_p Min. 13.5 dB. Efficiency 65% @ 30 MHz
 G_p Min. 10 dB. Efficiency 57% @ 70 MHz

