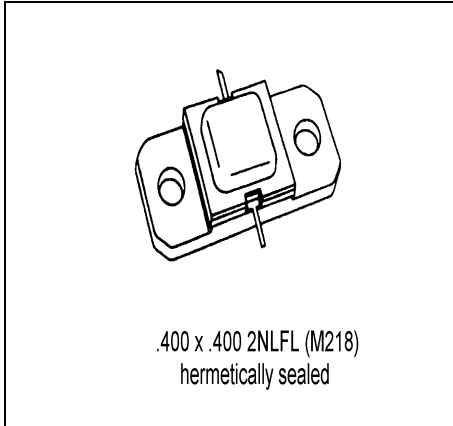


**MSC1350M**

**RF & MICROWAVE TRANSISTORS  
AVIONICS APPLICATIONS**

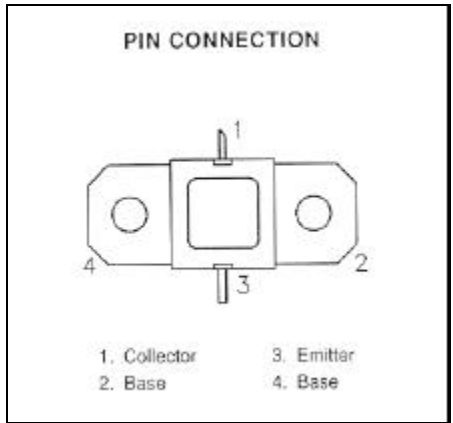
**Features**

- 1090 MHz
- COMMON BASE
- GOLD METALLIZATION
- CLASS C OPERATION
- POUT = 350 W MIN. WITH 7.0 dB GAIN
- WITHSTANDS 20:1 VSWR UNDER FULL LOAD



**DESCRIPTION:**

THE MSC1350M IS A SILICON NPN BIPOLAR DEVICE SPECIFICALLY DESIGNED FOR IFF AVIONICS APPLICATIONS. GOLD METALLIZATION AND EMITTER BALLASTING ASSURE HIGH RELIABILITY UNDER CLASS A LINEAR AMPLIFIER OPERATION. THE DEVICE IS CAPABLE OF WITHSTANDING A 20:1 VSWR AT ALL PHASE ANGLES UNDER FULL LOAD CONDITIONS.



**ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)**

Symbol	Parameter	Value	Unit
V <sub>CC</sub>	Collector-Supply Voltage*	55	V
I <sub>C</sub>	Device Current*	19.8	A
P <sub>DISS</sub>	Power Dissipation*	720	W
T <sub>J</sub>	Junction Temperature	200	°C
T <sub>STG</sub>	Storage Temperature	-65 to +200	°C

**Thermal Data**

R <sub>TH(J-C)</sub>	Thermal Resistance Junction-case*	0.2	°C/W
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# MSC1350M

\*Applies only to rated RF Amplifier Operation

## ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

### STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 10mA	I <sub>E</sub> = 0mA	65	---	---	V
BV <sub>EBO</sub>	I <sub>E</sub> = 1mA	I <sub>C</sub> = 0mA	3.5	---	---	V
BV <sub>CER</sub>	I <sub>C</sub> = 25mA	R <sub>BE</sub> = 10Ω	65	---	---	V
I <sub>CES</sub>	V <sub>CE</sub> = 50 V		---	---	25	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5 V	I <sub>C</sub> = 1A	15	---	120	---

### DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 1090 MHz	P <sub>IN</sub> = 70W	V <sub>CC</sub> = 50V	350	360	---	W
η <sub>C</sub>	f = 1090 MHz	P <sub>IN</sub> = 70W	V <sub>CC</sub> = 50V	40	44	---	%
G <sub>P</sub>	f = 1090 MHz	P <sub>IN</sub> = 70W	V <sub>CC</sub> = 50V	7.0	7.1	---	dB
Condition	Pulse Width = 10uS    Duty Cycle = 1%						

### IMPEDANCE DATA

FREQ	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
1025 MHz	5.0 + j5.0	7.0 - j2.5
1090 MHz	7.0 + j2.5	7.5 - j2.8
1150 MHz	3.6 + j2.5	6.8 - j2.7

V<sub>CC</sub> = 50V  
P<sub>IN</sub> = 70W

**PACKAGE MECHANICAL DATA**

