



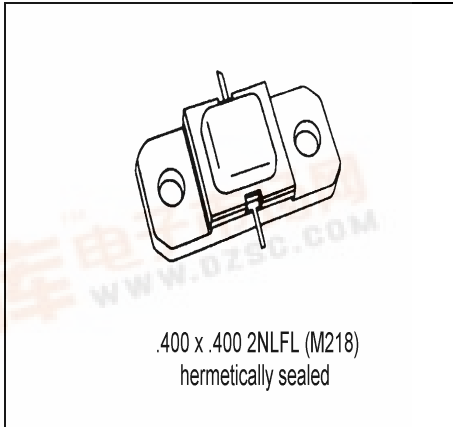
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**MSC1350M**

**RF & MICROWAVE TRANSISTORS  
AVIONICS APPLICATIONS**

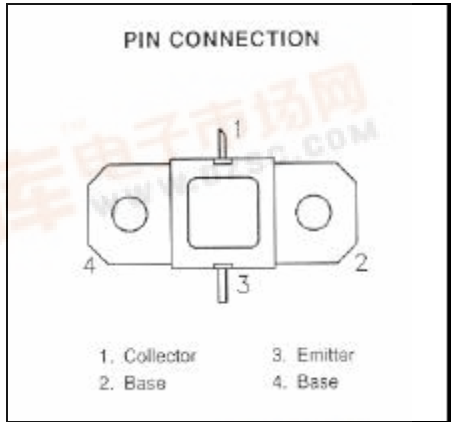
**Features**

- 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**

Thermal Resistance Junction-case*	0.2	°C/W
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\*Applies only to rated RF Amplifier Operation

## ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

### STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$BV_{CBO}$	$I_C = 10mA$	$I_E = 0mA$	65	---	---	V
$BV_{EBO}$	$I_E = 1mA$	$I_C = 0mA$	3.5	---	---	V
$BV_{CER}$	$I_C = 25mA$	$R_{BE} = 10\Omega$	65	---	---	V
$I_{CES}$	$V_{CE} = 50V$		---	---	25	mA
$h_{FE}$	$V_{CE} = 5V$	$I_C = 1A$	15	---	120	---

### DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$P_{OUT}$	$f = 1090\text{ MHz}$	$P_{IN} = 70W$	$V_{CC} = 50V$	350	360	---	W
$\eta_C$	$f = 1090\text{ MHz}$	$P_{IN} = 70W$	$V_{CC} = 50V$	40	44	---	%
$G_P$	$f = 1090\text{ MHz}$	$P_{IN} = 70W$	$V_{CC} = 50V$	7.0	7.1	---	dB
Condition	Pulse Width = 10uS Duty Cycle = 1%						

### IMPEDANCE DATA

FREQ	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
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

$V_{CC} = 50V$   
 $P_{IN} = 70W$

**PACKAGE MECHANICAL DATA**

