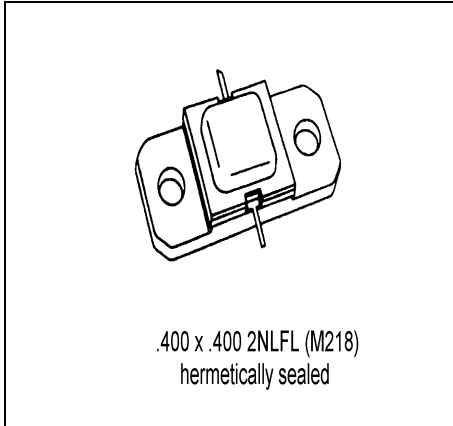


MSC1350M

RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

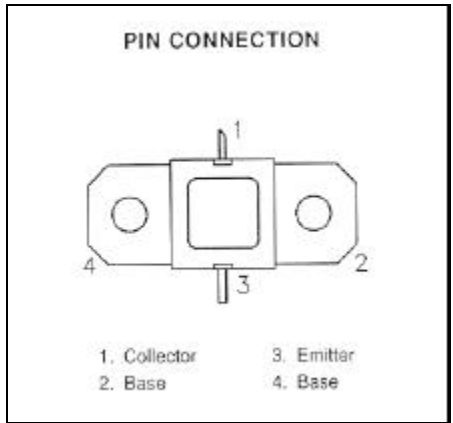
Features

- 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 (T_{case} = 25°C)

| Symbol | Parameter | Value | Unit |
|-------------------|---------------------------|-------------|------|
| V _{CC} | Collector-Supply Voltage* | 55 | V |
| I _C | Device Current* | 19.8 | A |
| P _{DISS} | Power Dissipation* | 720 | W |
| T _J | Junction Temperature | 200 | °C |
| T _{STG} | Storage Temperature | -65 to +200 | °C |

Thermal Data

| | | | |
|----------------------|-----------------------------------|-----|------|
| R _{TH(J-C)} | Thermal Resistance Junction-case* | 0.2 | °C/W |
|----------------------|-----------------------------------|-----|------|

MSC1350M

*Applies only to rated RF Amplifier Operation

ELECTRICAL SPECIFICATIONS (T_{case} = 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} = 10Ω | 65 | --- | --- | V |
| I _{CES} | V _{CE} = 50 V | | --- | --- | 25 | mA |
| h _{FE} | V _{CE} = 5 V | I _C = 1A | 15 | --- | 120 | --- |

DYNAMIC

| Symbol | Test Conditions | | | Value | | | Unit |
|------------------|---------------------------------------|-----------------------|-----------------------|-------|------|------|------|
| | | | | Min. | Typ. | Max. | |
| P _{OUT} | f = 1090 MHz | P _{IN} = 70W | V _{CC} = 50V | 350 | 360 | --- | W |
| η _C | f = 1090 MHz | P _{IN} = 70W | V _{CC} = 50V | 40 | 44 | --- | % |
| G _P | f = 1090 MHz | P _{IN} = 70W | V _{CC} = 50V | 7.0 | 7.1 | --- | dB |
| Condition | Pulse Width = 10uS Duty Cycle = 1% | | | | | | |

IMPEDANCE DATA

| FREQ | Z _{IN} (Ω) | Z _{CL} (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_{CC} = 50V
P_{IN} = 70W

PACKAGE MECHANICAL DATA

