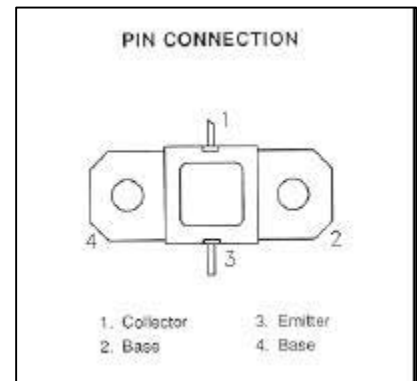
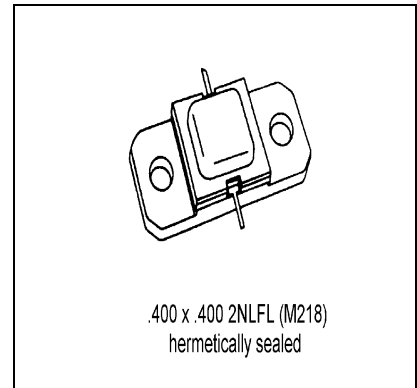


MS2223

**RF & MICROWAVE TRANSISTORS
AVIONICS APPLICATIONS**

Features

- GOLD METALLIZATION
- EMITTER SITE BALLASTED
- Pout = 70 W MINIMUM
- Gp = 6.7 dB
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- LOW THERMAL RESISTANCE



DESCRIPTION:

The MS2223 is a silicon NPN bipolar transistor designed for avionics applications with high duty cycle requirements. Gold metallization and emitter ballasting provides long term reliability under long pulse formats.

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

| Symbol | Parameter | Value | Unit |
|------------|---------------------------|---------------|------|
| V_{CC} | Collector-Supply Voltage* | 32 | V |
| I_C | Device Current* | 8.0 | A |
| P_{DISS} | Power Dissipation* | 200 | W |
| T_J | Junction Temperature | 200 | °C |
| T_{STG} | Storage Temperature | - 65 to + 200 | °C |

Thermal Data

| | | | |
|---------------|-----------------------------------|------|------|
| $R_{TH(j-c)}$ | Junction-Case Thermal Resistance* | 0.68 | °C/W |
|---------------|-----------------------------------|------|------|

* Applies only to rated RF operation.

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

| Symbol | Test Conditions | | Value | | | Unit |
|-------------------------|------------------------------|-----------------------------|------------|------|------------|-----------|
| | | | Min. | Typ. | Max. | |
| BV_{CBO} | I_C = 25mA | I_E = 0 mA | 55 | ---- | ---- | V |
| BV_{CER} | I_C = 25 mA | R_{BE} = 10 | 55 | ---- | ---- | V |
| BV_{EBO} | I_E = 10 mA | I_C = 0 mA | 3.5 | ---- | ---- | V |
| I_{CES} | V_{CE} = 35 V | V_{BE} = 0 V | ---- | ---- | 20 | mA |
| h_{FE} | V_{CE} = 5 V | I_C = 2A | 20 | ---- | 200 | ---- |

DYNAMIC

| Symbol | Test Conditions | | | Value | | | Unit |
|------------------------|--|------------------------------|------------------------------|------------|------|------|-----------|
| | | | | Min. | Typ. | Max. | |
| P_{OUT} | f = 1090 MHz | P_{IN} = 15 W | V_{CC} = 28 V | 70 | ---- | ---- | W |
| η_c | f = 1090 MHz | P_{IN} = 15 W | V_{CC} = 28 V | 45 | ---- | ---- | % |
| G_p | f = 1090 MHz | P_{IN} = 15 W | V_{CC} = 28 V | 6.7 | ---- | ---- | dB |
| Condition | Pulse Width: 100 S Duty Cycle: 2% | | | | | | |

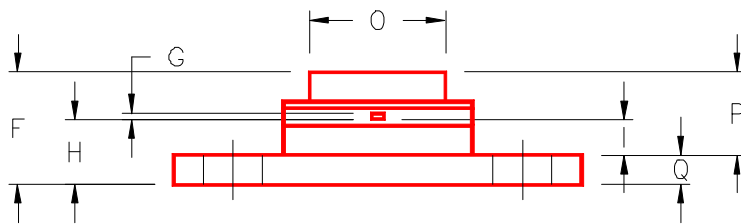
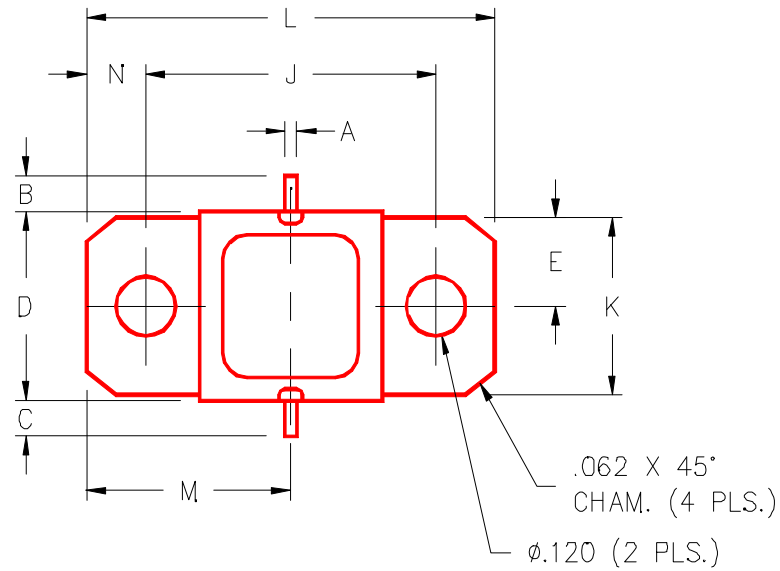
IMPEDANCE DATA:

| FREQUENCY | Z _{in} | Z _{cl} |
|-----------|-----------------|-----------------|
| 1025 MHz | 4.7 + j4.7 | 3.6 + j4.3 |
| 1090 MHz | 4.7 + j3.9 | 3.3 + j4.4 |

Pin = 15W Vcc = 28V

PACKAGE MECHANICAL DATA

PACKAGE STYLE M218



| | MINIMUM INCHES/MM | MAXIMUM INCHES/MM | | MINIMUM INCHES/MM | MAXIMUM INCHES/MM |
|---|----------------------|----------------------|---|----------------------|----------------------|
| A | .025/0,64 | | J | .650/16,51 | |
| B | .100/2,54 | | K | .386/9,80 | |
| C | .100/2,54 | | L | .900/22,86 | |
| D | .395/10,03 | | M | .450/11,43 | |
| E | .193/4,90 | | N | .125/3,18 | |
| F | .230/5,84 | | O | .405/10,29 | |
| G | .004/0,10 | | P | .170/4,32 | |
| H | .118/3,00 | | Q | .062/1,58 | |
| I | .063/1,60 | | | | |