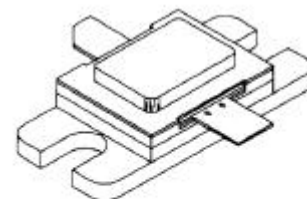


**MS2472****RF & MICROWAVE TRANSISTORS  
AVIONICS APPLICATIONS****Features**

- DESIGNED FOR HIGH POWER PULSED IFF AND DME APPLICATIONS
- 600 W (typ.) IFF 1030 – 1090 MHz
- 550 W (min.) DME 1025 – 1150 MHz
- 1025 - 1150 MHz
- $P_{OUT} = 550$  WATTS
- $G_p = 5.6$  dB MINIMUM
- GOLD METALLIZATION
- INTERNAL INPUT/OUTPUT MATCHED
- COMMON BASE CONFIGURATION

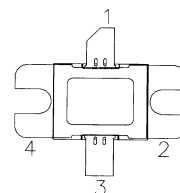
**DESCRIPTION:**

The MS2472 is a hermetically sealed, gold metallized, silicon NPN power transistor. The MS2472 is designed for applications requiring high peak power and low duty cycles such as IFF and DME. The MS2472 is internal input/output matched resulting in improved broadband performance and a low thermal resistance.



**.400 x .500 2LFL (M112)**  
hermetically sealed

**PIN CONNECTION**



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

**ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)**

| Symbol     | Parameter                 | Value       | Unit |
|------------|---------------------------|-------------|------|
| $V_{CBO}$  | Collector-Base Voltage    | 65          | V    |
| $V_{CES}$  | Collector-Emitter Voltage | 65          | V    |
| $V_{EBO}$  | Emitter-Base Voltage      | 3.5         | V    |
| $I_C$      | Device Current            | 40          | A    |
| $P_{DISS}$ | Power Dissipation         | 1350        | W    |
| $T_J$      | Junction Temperature      | 200         | °C   |
| $T_{STG}$  | Storage Temperature       | -65 to +150 | °C   |

**Thermal Data**

|               |                                  |      |      |
|---------------|----------------------------------|------|------|
| $R_{TH(J-C)}$ | Thermal Resistance Junction-case | 0.06 | °C/W |
|---------------|----------------------------------|------|------|

## ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

### STATIC

| Symbol     | Test Conditions                               | Value |      |      | Unit |
|------------|-----------------------------------------------|-------|------|------|------|
|            |                                               | Min.  | Typ. | Max. |      |
| $BV_{CBO}$ | $I_C = 25 \text{ mA}$ $I_E = 0 \text{ mA}$    | 65    | ---  | ---  | V    |
| $BV_{CES}$ | $I_C = 50 \text{ mA}$ $V_E = 0 \text{ V}$     | 65    | ---  | ---  | V    |
| $BV_{EBO}$ | $I_C = 10 \text{ mA}$ $I_C = 0 \text{ mA}$    | 3.5   | ---  | ---  | V    |
| $I_{CES}$  | $V_{CE} = 50 \text{ V}$ $I_E = 0 \text{ mA}$  | ---   | ---  | 35   | mA   |
| $H_{FE}$   | $V_{CE} = 5 \text{ V}$ $I_C = 0.25 \text{ A}$ | 5     | ---  | 200  | ---  |

### DYNAMIC

| Symbol    | Test Conditions                                                                | Value |      |      | Unit |
|-----------|--------------------------------------------------------------------------------|-------|------|------|------|
|           |                                                                                | Min.  | Typ. | Max. |      |
| $P_{OUT}$ | $f = 1025 - 1150 \text{ MHz}$ $P_{IN} = 150 \text{ W}$ $V_{CE} = 50 \text{ V}$ | 550   | ---  | ---  | W    |
| $G_P$     | $f = 1025 - 1150 \text{ MHz}$ $P_{IN} = 150 \text{ W}$ $V_{CE} = 50 \text{ V}$ | 5.6   | ---  | ---  | dB   |

Conditions:      Pulse Width = 10  $\mu\text{s}$     Duty Cycle = 1%

### IMPEDANCE DATA

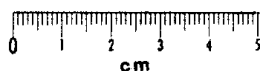
| FREQ     | $Z_{IN}(\Omega)$ | $Z_{CL}(\Omega)$ |
|----------|------------------|------------------|
| 1025 MHz | $2.50 + j2.7$    | $1.33 - j1.7$    |
| 1090 MHz | $2.60 + j1.6$    | $1.33 - j1.9$    |
| 1150 MHz | $1.90 + j0.7$    | $1.33 - j2.1$    |

$P_{IN} = 150 \text{ W}$

$V_{CC} = 50 \text{ V}$

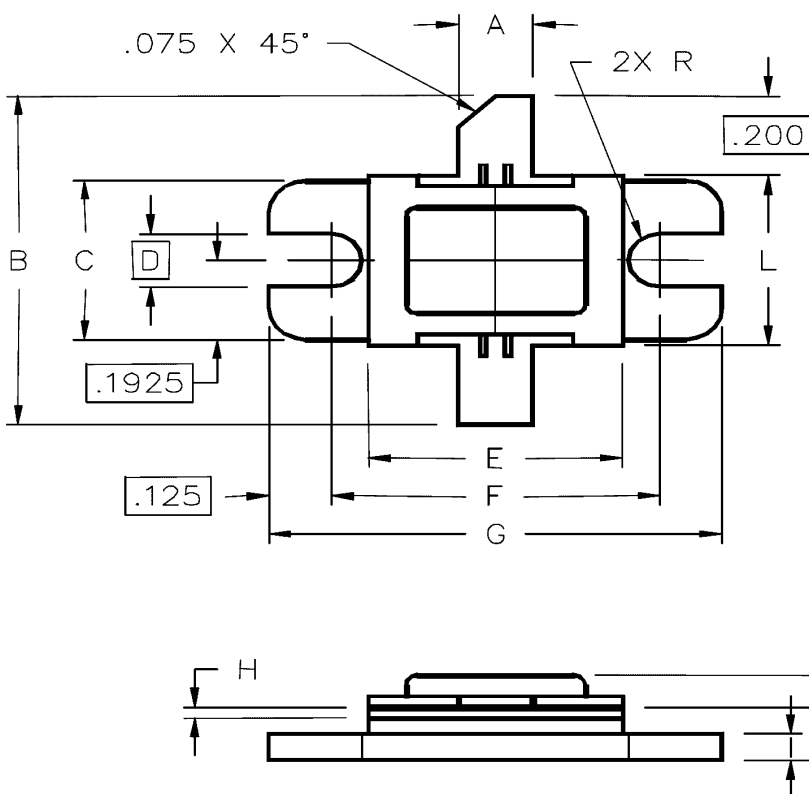
Z1 : 50 $\Omega$  (.02 Wide)  
 Z2 : .250 x .120  
 Z3 : 50 $\Omega$ , .020 x .330; C1 Tapped .15 From Load  
 Z4 : .145 x .920  
 Z5 : .325 x .180  
 Z6 : .730 x .315  
 Z7 : .710 x .425 with .140 x .150 Cutout  
 Z8 : .035 x .780; C4 Tapped .36 from Center  
 Z9 : 50 $\Omega$  (.02 Wide)

C1, C4 : Cold End Terminated Through Eyelet



## PACKAGE MECHANICAL DATA

### PACKAGE STYLE M112



|   | MINIMUM<br>INCHES/MM | MAXIMUM<br>INCHES/MM |   | MINIMUM<br>INCHES/MM | MAXIMUM<br>INCHES/MM |
|---|----------------------|----------------------|---|----------------------|----------------------|
| A | .145/3,68            | .155/3,93            | I | .055/1,40            | .065/1,65            |
| B | .750/19,05           |                      | J | .115/2,92            | .135/3,43            |
| C | .380/9,65            | .390/9,91            | K |                      | .230/5,64            |
| D | .130/3,30            |                      | L | .395/10,03           | .410/10,41           |
| E | .495/12,57           | .505/12,83           |   |                      |                      |
| F | .640/16,26           | .655/16,64           |   |                      |                      |
| G | .890/22,61           | .910/23,11           |   |                      |                      |
| H | .002/0,05            | .006/0,15            |   |                      |                      |