

## MS2472

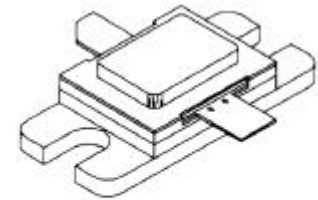
### RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

#### 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

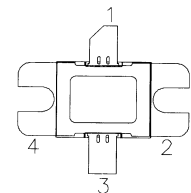
#### DESCRIPTION:

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
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## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
<b>BV<sub>CBO</sub></b>	<b>I<sub>C</sub> = 25 mA      I<sub>E</sub> = 0 mA</b>	<b>65</b>	---	---	<b>V</b>
<b>BV<sub>CES</sub></b>	<b>I<sub>C</sub> = 50 mA      V<sub>E</sub> = 0 V</b>	<b>65</b>	---	---	<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>C</sub> = 10 mA      I<sub>C</sub> = 0 mA</b>	<b>3.5</b>	---	---	<b>V</b>
<b>I<sub>CES</sub></b>	<b>V<sub>CE</sub> = 50 V      I<sub>E</sub> = 0 mA</b>	---	---	<b>35</b>	<b>mA</b>
<b>H<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5 V      I<sub>C</sub> = 0.25 A</b>	<b>5</b>	---	<b>200</b>	---

### DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 1025 - 1150MHz    P<sub>IN</sub> = 150W    V<sub>CE</sub> = 50V</b>	<b>550</b>	---	---	<b>W</b>
<b>G<sub>P</sub></b>	<b>f = 1025 - 1150MHz    P<sub>IN</sub> = 150W    V<sub>CE</sub> = 50V</b>	<b>5.6</b>	---	---	<b>dB</b>

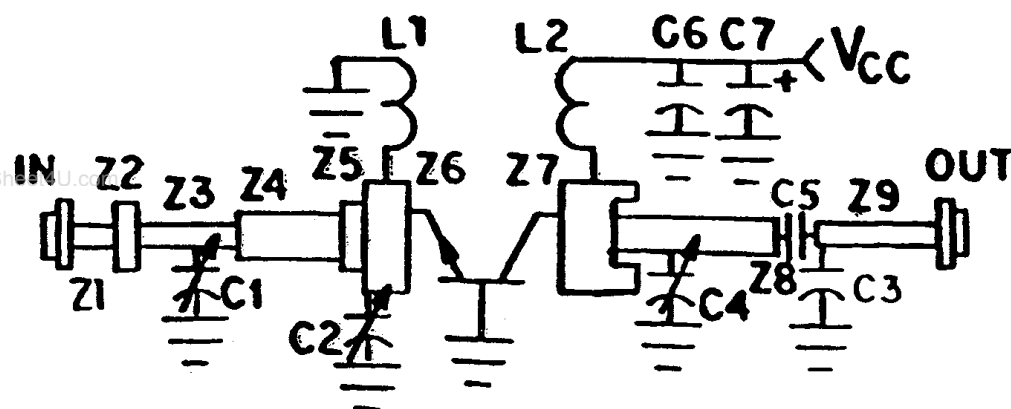
Conditions:      Pulse Width = 10 μs    Duty Cycle = 1%

### IMPEDANCE DATA

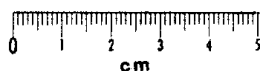
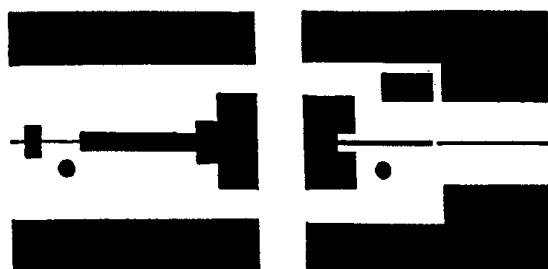
FREQ	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
<b>1025 MHz</b>	<b>2.50 + j2.7</b>	<b>1.33 - j1.7</b>
<b>1090 MHz</b>	<b>2.60 + j1.6</b>	<b>1.33 - j1.9</b>
<b>1150 MHz</b>	<b>1.90+ j0.7</b>	<b>1.33 - j2.1</b>

**P<sub>IN</sub> = 150W**

**V<sub>CC</sub> = 50V**



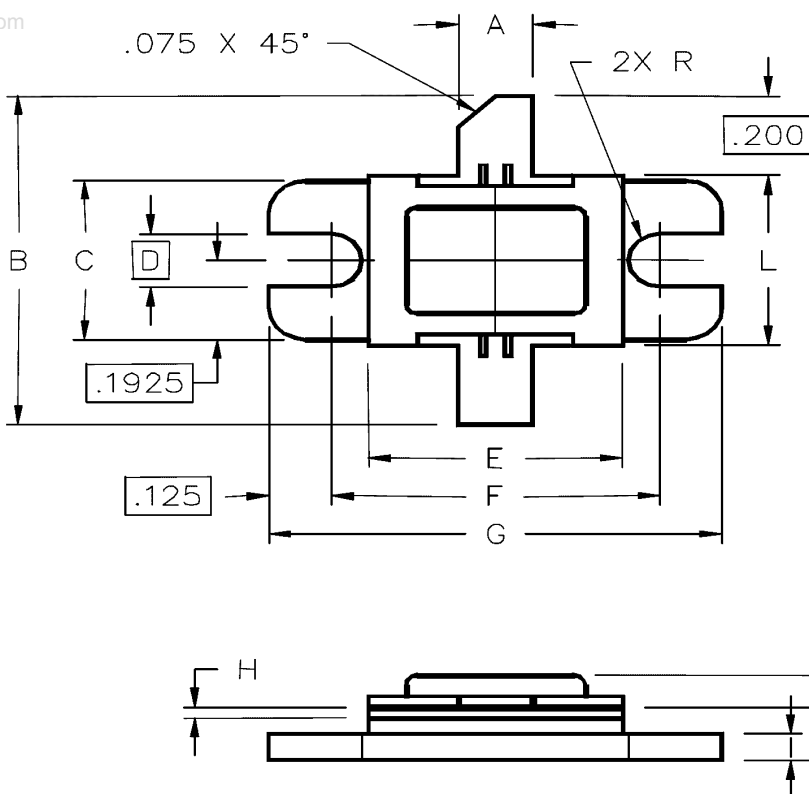
- |   |   |        |   |
|---|---|--------|---|
| All Dimensions are in inches Unless Otherwise Specified |   | Z1     | : 50Ω (.02 Wide)                            |
|   |   | Z2     | : .250 x .120                               |
| C1  | : 0.4 - 2.5pF Johanson Gigatrim                     | Z3     | : 50Ω, .020 x .330; C1 Tapped .15 From Load |
| C2, C3, C4  | : 0.6 - 4.5pF Johanson Gigatrim                     | Z4     | : .145 x .920                               |
| C5  | : 82pF Chip Capacitor, .055 Sq.                     | Z5     | : .325 x .180                               |
| C6  | : Pair of 820pF Chip Capacitors, .11 Sq.            | Z6     | : .730 x .315                               |
| C7  | : 1000μF Electrolytic                               | Z7     | : .710 x .425 with .140 x .150 Cutout       |
|   |   | Z8     | : .035 x .780; C4 Tapped .36 from Center    |
|   |   | Z9     | : 50Ω (.02 Wide)                            |
| L1  | : Loop, #18 Tinned, .36 Wide x .27 Above Circuit    |        |   |
| L2  | : 4 3/4 Turns, #24 Enameled, Close Wound, .075 I.D. | C1, C4 | : Cold End Terminated Through Eyelet        |



## PACKAGE MECHANICAL DATA

### PACKAGE STYLE M112

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	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM 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			