ADVANCED POWER TECHNOLOGY RF®

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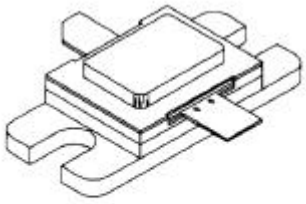
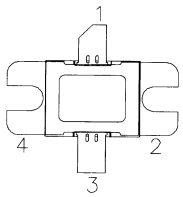
MS2472

RF & MICROWAVE TRANSISTORS
AVIONICS APPLICATIONS



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

PIN CONNECTION



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

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.

ABSOLUTE MAXIMUM RATINGS (Tcase = 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 (Tcase = 25°C)

STATIC

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

DYNAMIC

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

Conditions: Pulse Width = 10 µs 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} = 150W
V_{CC} = 50V

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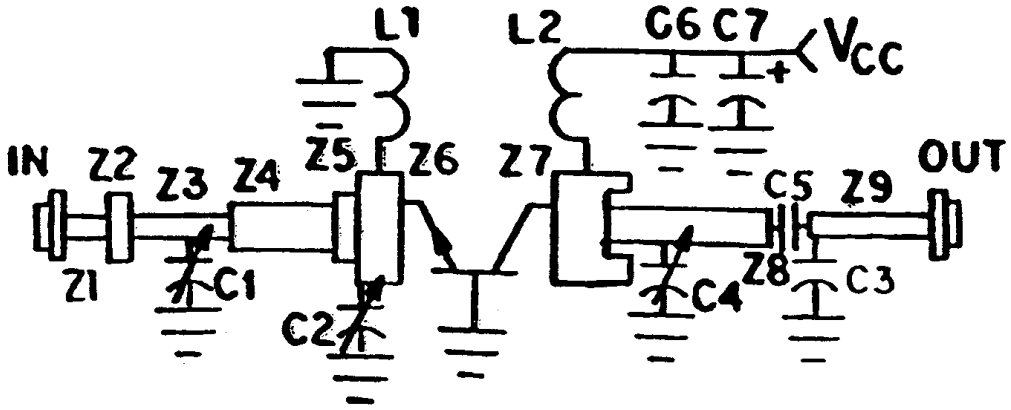
TEST CIRCUIT



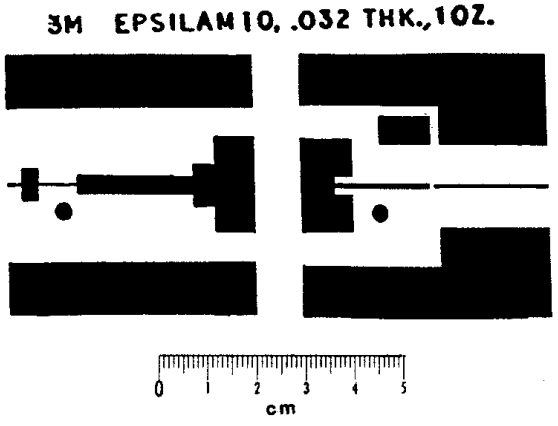
All Dimensions are in inches Unless Otherwise Specified

C1 : 0.4 - 2.5pF Johanson Gigatrim
C2, C3,
C4 : 0.6 - 4.5pF Johanson Gigatrim
C5 : 82pF Chip Capacitor, .055 Sq.
C6 : Pair of 820pF Chip Capacitors, .11 Sq.
C7 : 1000µF Electrolytic

L1 : Loop, #18 Tinned, .36 Wide x .27 Above Circuit
L2 : 4 3/4 Turns, #24 Enameled, Close Wound, .075 I.D.

Z1 : 50Ω (.02 Wide)
Z2 : .250 x .120
Z3 : 50Ω, .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 : 50Ω (.02 Wide)

C1, C4 : Cold End Terminated Through Eyelet



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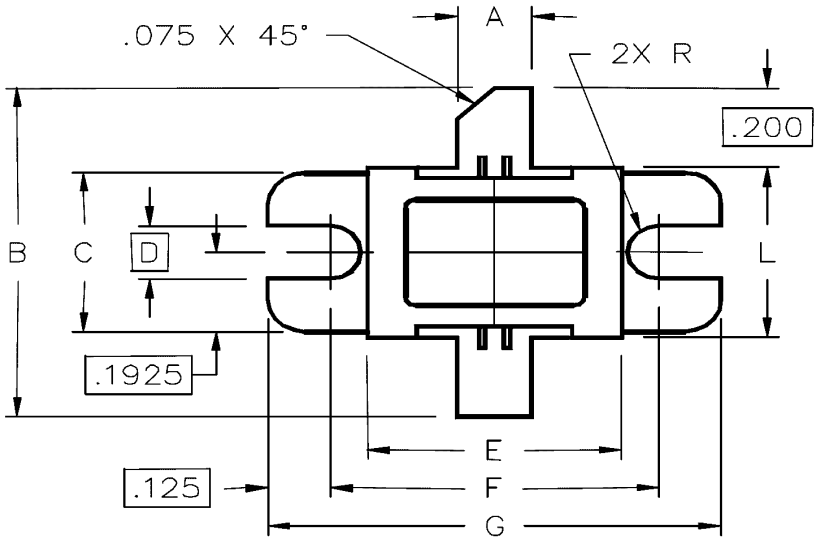
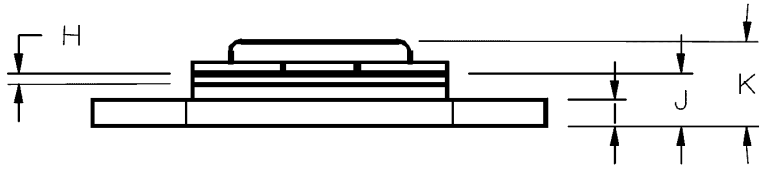
PACKAGE MECHANICAL DATA

PACKAGE STYLE M112





	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			

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