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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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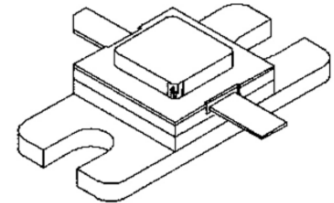


**MS2422**
**RF & MICROWAVE TRANSISTORS  
AVIONICS APPLICATIONS**
**Features**

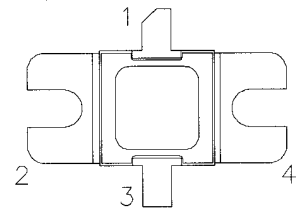
- **DESIGNED FOR HIGH POWER PULSED IFF, DME, AND TACAN APPLICATIONS**
- **350 W (typ.) IFF 1030 – 1090 MHz**
- **300 W (min.) DME 1025 – 1150 MHz**
- **290 W (typ.) TACAN 960 – 1215 MHz**
- **960 – 1215 MHz**
- **GOLD METALLIZATION**
- **P<sub>OUT</sub> = 300W MINIMUM**
- **G<sub>p</sub> = 6.3 dB MINIMUM**
- **INFINITE VSWR CAPABILITY @ RATED CONDITIONS**
- **EMITTER BALLASTED**
- **COMMON BASE**

**DESCRIPTION:**

The MS2422 is a gold metallized silicon, NPN power transistor designed for applications requiring high peak power and low duty cycles such as IFF, DME, and TACAN. The MS2422 is designed with internal input/output matching resulting in improved broadband performance and low thermal resistance.



**.400 SQ. 2LFL (M138)**  
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 <sub>CBO</sub>	Collector-Base Voltage	65	V
V <sub>CES</sub>	Collector-Emitter Voltage	65	V
V <sub>EBO</sub>	Emitter-Base Voltage	3.5	V
I <sub>C</sub>	Device Current	22	A
P <sub>DISS</sub>	Power Dissipation	875	W
T <sub>J</sub>	Junction Temperature	200	°C
T <sub>STG</sub>	Storage Temperature	-65 to +150	°C

**Thermal Data**

R <sub>TH(J-C)</sub>	Junction-case Thermal Resistance	0.20	°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> = 10 mA</b>	<b>I<sub>E</sub> = 0 mA</b>	<b>65</b>	---	---	<b>V</b>
<b>BV<sub>CES</sub></b>	<b>I<sub>C</sub> = 25 mA</b>	<b>V<sub>BE</sub> = 0 V</b>	<b>65</b>	---	---	<b>V</b>
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 5.0 mA</b>	<b>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</b>	<b>I<sub>E</sub> = 0 mA</b>	---	---	<b>25</b>	<b>mA</b>
<b>h<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5 V</b>	<b>I<sub>C</sub> = 1A</b>	<b>10</b>	---	---	<b>mA</b>

**DYNAMIC**

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 1025 - 1150 MHz</b>	<b>P<sub>IN</sub> = 70W</b>	<b>V<sub>CE</sub> = 50V</b>	<b>300</b>	---	---	<b>W</b>
<b>G<sub>p</sub></b>	<b>f = 1025 - 1150 MHz</b>	<b>P<sub>IN</sub> = 70W</b>	<b>V<sub>CE</sub> = 50V</b>	<b>6.3</b>	---	---	<b>dB</b>
<b>η<sub>c</sub></b>	<b>f = 1025 - 1150 MHz</b>	<b>P<sub>IN</sub> = 70W</b>	<b>V<sub>CE</sub> = 50V</b>	<b>35</b>	---	---	<b>%</b>
<b>Conditions</b>	<b>Pulse Width = 10 μs Duty Cycle = 1%</b>						

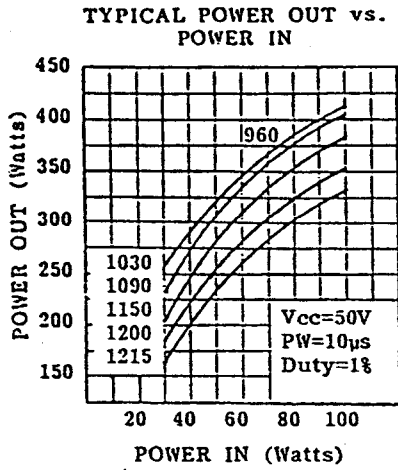
**IMPEDANCE DATA**

FREQ	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
<b>960 MHz</b>	<b>5.1 + j1.0</b>	<b>2.2 – j3.5</b>
<b>1090 MHz</b>	<b>4.2 + j0.5</b>	<b>2.5 – j3.5</b>
<b>1215 MHz</b>	<b>7.5 + j1.5</b>	<b>2.3 – j1.5</b>

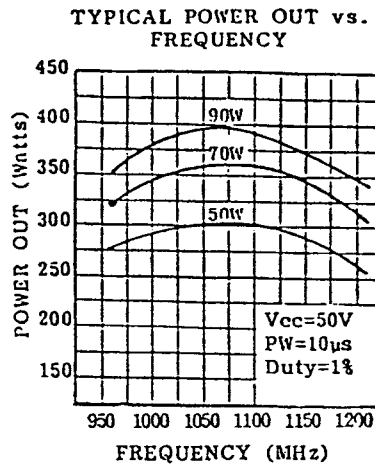
**P<sub>in</sub> = 70W V<sub>ce</sub> = 50V**

**TYPICAL PERFORMANCE**

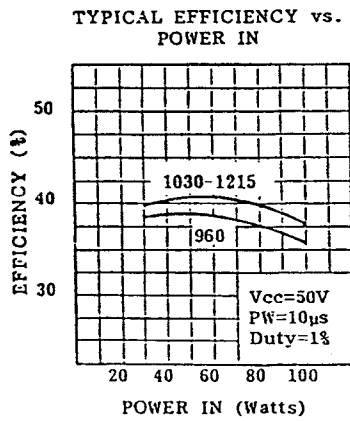
**POWER OUTPUT vs POWER INPUT**



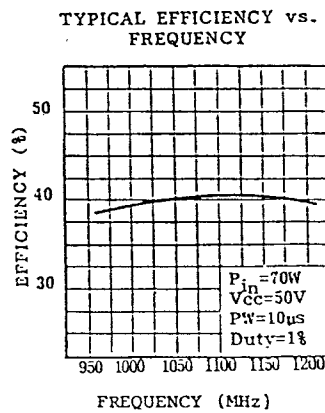
**POWER OUTPUT vs FREQUENCY**



**EFFICIENCY vs POWER INPUT**



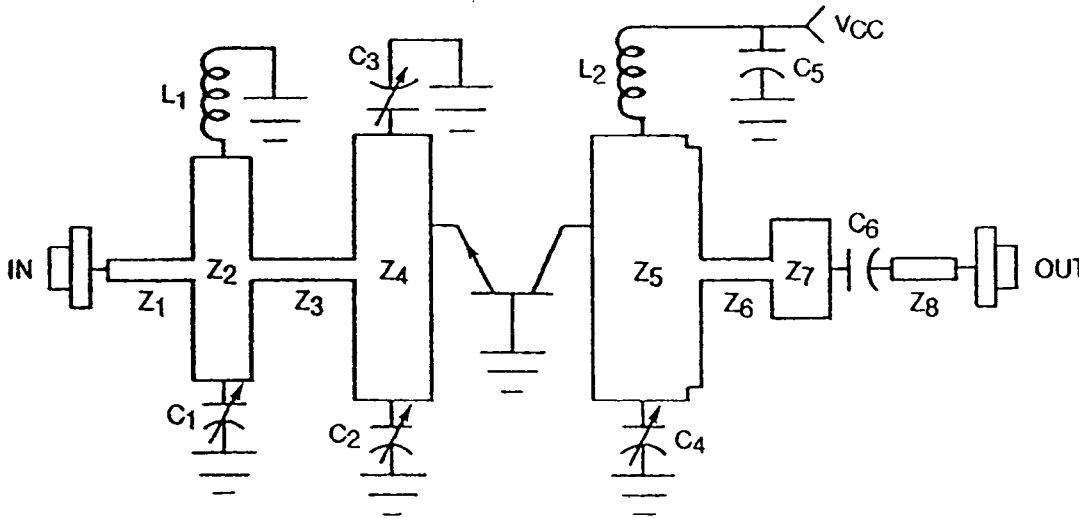
**EFFICIENCY vs FREQUENCY**



**MS2422**

**TEST CIRCUIT**

Teflon Fiberglass  $\epsilon_r = 2.5$  THK .031

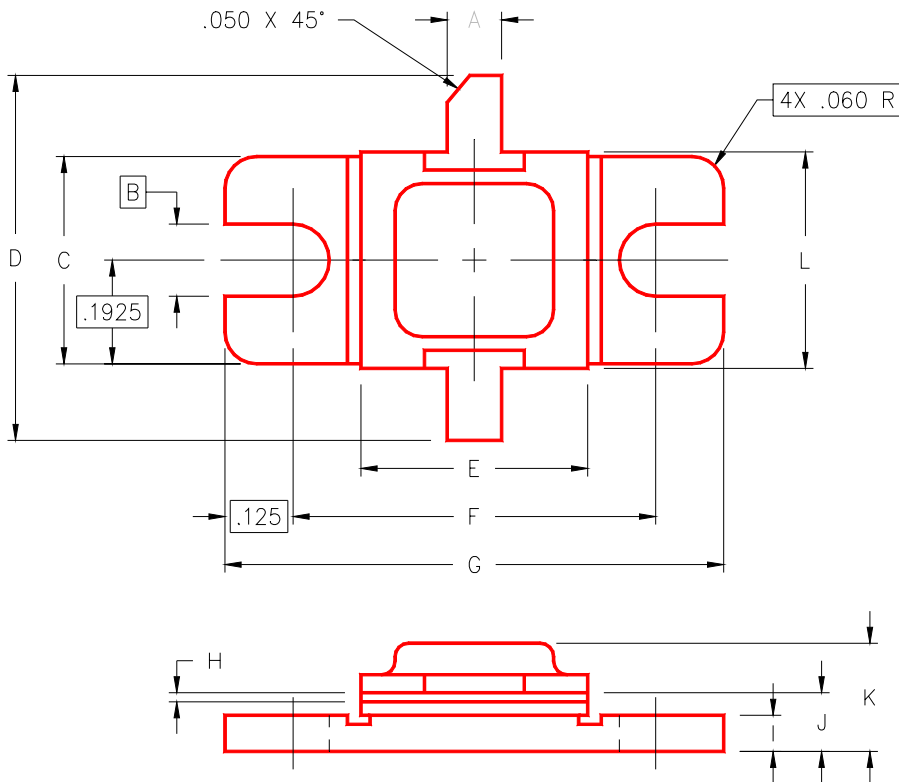


All Dimension are in Inches

C1, C2:	Z1	: .404 x .075
C3, C4 : .6 - 4.5pF JOHANSON Gigatrim	Z2	: .263 x .995
C5 : 1000 $\mu$ F, 63V, Electrolytic	Z3	: .483 x .077
C6 : 100pF Chip Capacitor Across .090 Gap	Z4	: .350 x 1.203
L1 : 2 Turns #24 .12 I.D., Spaced Wire Diameter	Z5	: .505 x 1.200 with Two Notches .05 Long By .068 Wide
L2 : 4 Turns #24, .07 I.D., Spaced Wire Diameter	Z6	: .335 x .076
	Z7	: .260 x .442
	Z8	: .310 x .082

**PACKAGE MECHANICAL DATA**

**PACKAGE STYLE M138**



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.095/2,41	.105/2,67	I	.055/1,40	.065/1,65
B	.125/3,18		J	.105/2,67	.125/3,18
C	.380/9,65	.390/9,91	K		.230/5,84
D	.790/20,07		L	.392/9,96	.402/10,21
E	.392/9,96	.402/10,21			
F	.645/16,38	.655/16,64			
G	.895/22,73	.905/22,99			
H	.002/0,05	.006/0,15			