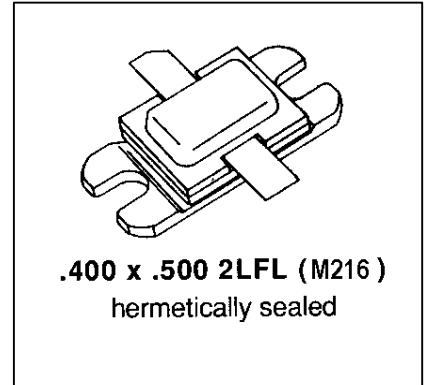


**MS2092**

**RF AND MICROWAVE TRANSISTORS  
AVIONICS APPLICATIONS**

**Features**

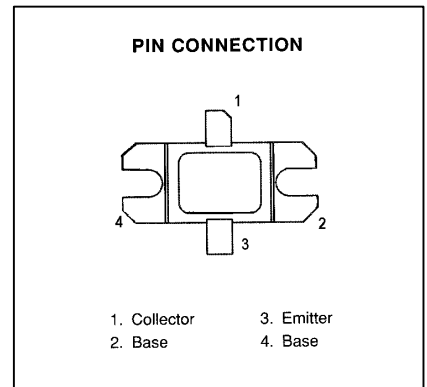
- Refractory/Gold Metallization
- Internal Input Matching
- Metal/Ceramic Hermetic Package
- $P_{OUT} = 440 \text{ W Min.}$
- $G_P = 7.0 \text{ dB Gain}$



**DESCRIPTION:**

The MS2092 is an internally matched, common base silicon bipolar device optimized pulsed application in the 600 – 750 MHz frequency range.

Housed in the industry standard AMPAC™ metal/ceramic package, this device uses a refractory/gold overlay die geometry for ruggedness and long-term reliability.



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

| Symbol     | Parameter                                | Value       | Unit |
|------------|--|-------------|------|
| $P_{DISS}$ | Power Dissipation* (T <sub>c</sub> 75°C) | 1500        | W    |
| $I_C$      | Device Current*                          | 32.0        | A    |
| $V_{CC}$   | Collector-Supply Voltage*                | 55          | V    |
| $T_J$      | Junction Temperature                     | 250         | °C   |
| $T_{STG}$  | Storage Temperature                      | -65 to +200 | °C   |

**Thermal Data**

|               |                                  |      |      |
|---------------|----------------------------------|------|------|
| $R_{TH(j-c)}$ | Junction-Case Thermal Resistance | 0.13 | °C/W |
|---------------|----------------------------------|------|------|

**ELECTRICAL SPECIFICATIONS (Tcase = 25°C)**
**STATIC**

| Symbol                  | Test Conditions                                      | Value      |      |            | Units     |
|-------------------------|--|------------|------|------------|-----------|
|                         |  | Min.       | Typ. | Max.       |           |
| <b>BV<sub>CBO</sub></b> | <b>I<sub>C</sub> = 50 mA    I<sub>E</sub> = 0 mA</b> | <b>65</b>  |      |            | <b>V</b>  |
| <b>BV<sub>EBO</sub></b> | <b>I<sub>E</sub> = 5 mA    I<sub>C</sub> = 0 mA</b>  | <b>3.5</b> |      |            | <b>V</b>  |
| <b>BV<sub>CER</sub></b> | <b>I<sub>C</sub> = 50mA    R<sub>BE</sub> = 10 Ω</b> | <b>65</b>  |      |            | <b>V</b>  |
| <b>I<sub>CES</sub></b>  | <b>V<sub>CE</sub> = 50 V</b>                         |            |      | <b>35</b>  | <b>mA</b> |
| <b>I<sub>CBO</sub></b>  | <b>V<sub>CB</sub> = 50 V</b>                         |            |      | <b>25</b>  | <b>mA</b> |
| <b>h<sub>FE</sub></b>   | <b>V<sub>CE</sub> = 5 V    I<sub>C</sub> = 1 A</b>   | <b>15</b>  |      | <b>300</b> |           |

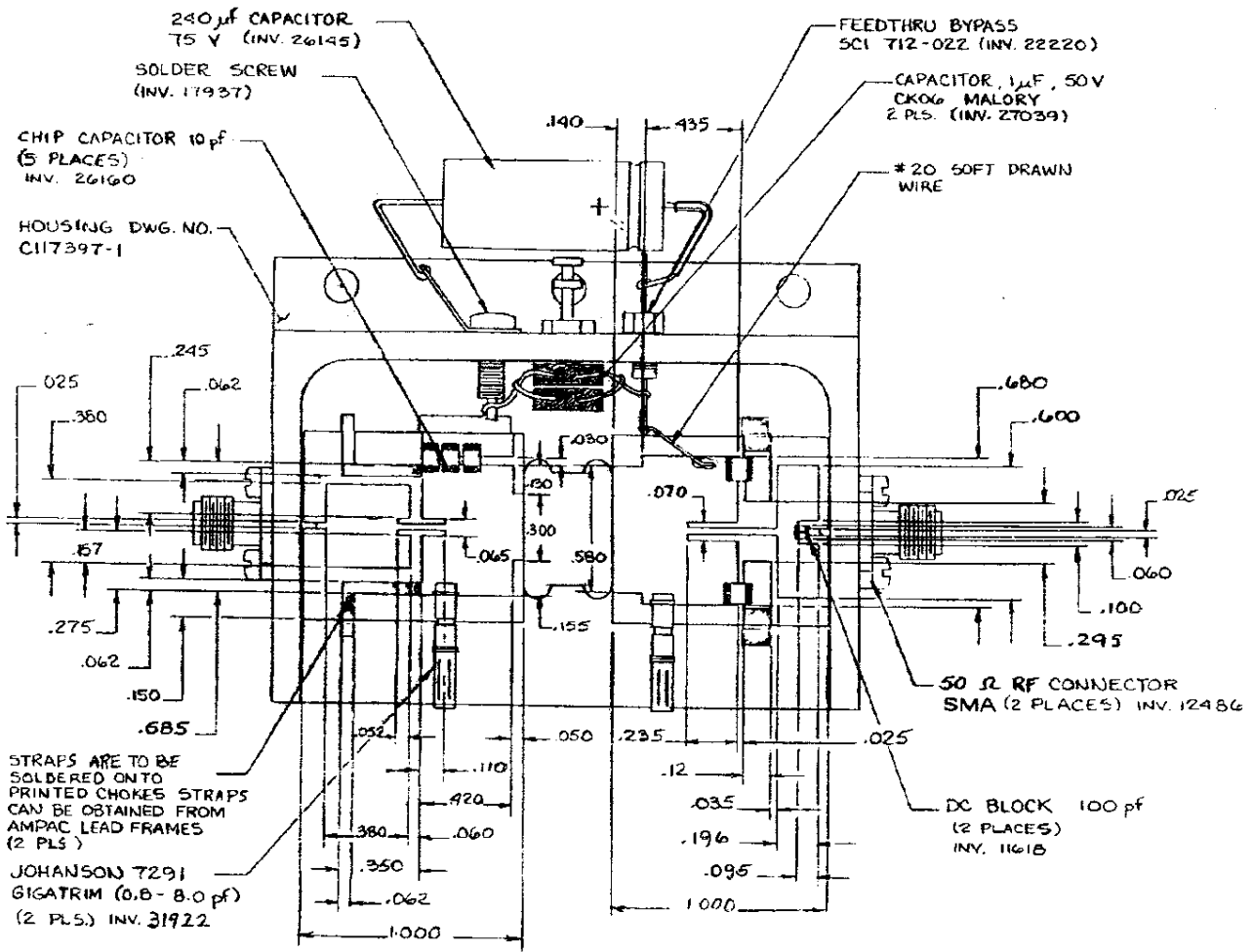
**DYNAMIC**

| Symbol                 | Test Conditions  | Value      |      |      | Units     |
|------------------------|--|------------|------|------|-----------|
|                        |  | Min.       | Typ. | Max. |           |
| <b>P<sub>OUT</sub></b> | <b>f = 600 – 750 MHz    P<sub>IN</sub> = 90 W    V<sub>CC</sub> = 50 V</b> | <b>445</b> |      |      | <b>W</b>  |
| <b>η<sub>C</sub></b>   | <b>f = 600 – 750 MHz    P<sub>IN</sub> = 90 W    V<sub>CC</sub> = 50 V</b> | <b>35</b>  |      |      | <b>%</b>  |
| <b>G<sub>P</sub></b>   | <b>f = 600 – 750 MHz    P<sub>IN</sub> = 90 W    V<sub>CC</sub> = 50 V</b> | <b>7.0</b> |      |      | <b>dB</b> |

**Note:**    Pulse width = 10μSec  
               Duty Cycle = 1%

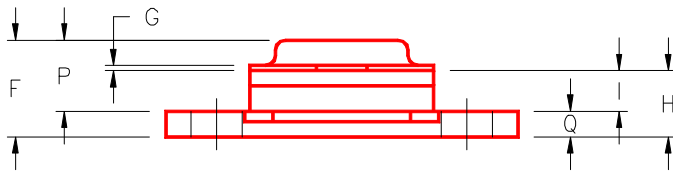
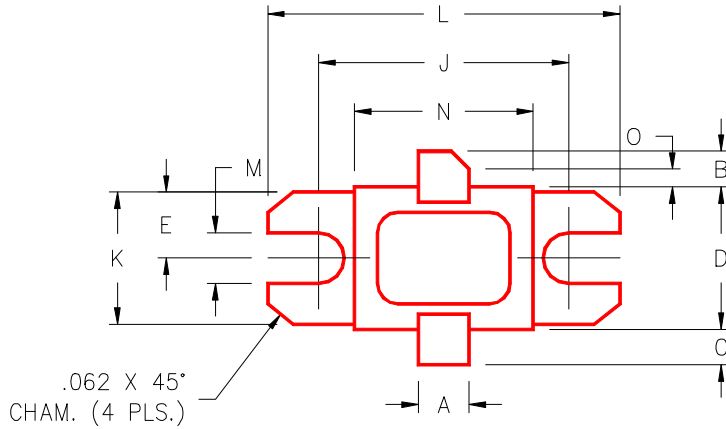
**MS2092**

**TEST CIRCUIT**



**PACKAGE MECHANICAL DATA**

**PACKAGE STYLE M216**



|   | MINIMUM<br>INCHES/MM | MAXIMUM<br>INCHES/MM |   | MINIMUM<br>INCHES/MM | MAXIMUM<br>INCHES/MM |
|---|----------------------|----------------------|---|----------------------|----------------------|
| A | .140/3,56            |                      | J | .700/17,78           |                      |
| B | .110/2,80            |                      | K | .386/9,80            |                      |
| C | .110/2,80            |                      | L | .900/22,86           |                      |
| D | .395/10,03           | .407/10,34           | M | .120/3,05            |                      |
| E | .193/4,90            |                      | N | .500/12,70           |                      |
| F |                      | .230/5,84            | O | .050/1,27            |                      |
| G | .003/0,08            | .006/0,15            | P |                      | .170/4,32            |
| H | .118/3,00            | .131/3,33            | Q | .062/1,58            |                      |
| I | .063/1,60            |                      |   |                      |                      |