

## GENERAL DESCRIPTION

This device utilizes the most advanced design and process technologies. These features provide the most consistent and reliable chip and package combination designed, built and tested specifically for use in airborne DME.

- Gold thin-film metallization -- proven highest Mean Time to Failure.
- Surface passivation -- eliminates contamination and extends life.
- Eutectic die attach -- reduces junction temperature and extends MTF.
- Gold controlled-loop wire bonding -- consistent RF performance.
- Hermetically sealed low thermal-resistance packages -- reduce junction temperature and extend life.

## ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C Case Temperature 875W

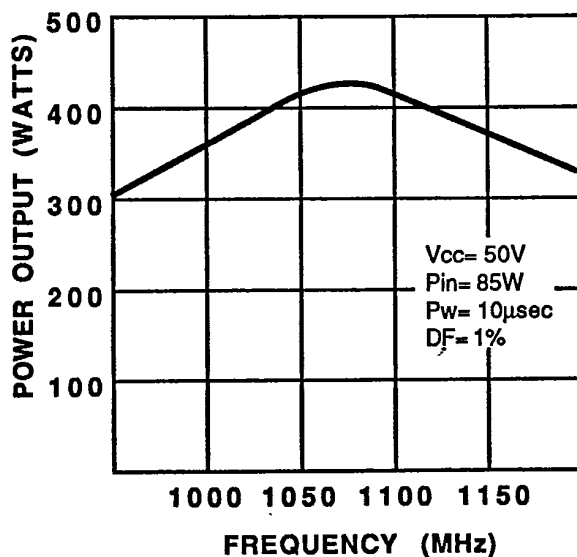
### Maximum Voltage and Current

|       |                              |       |
|-------|------------------------------|-------|
| BVces | Collector to Emitter Voltage | 55 V  |
| BVebo | Emitter to Base Voltage      | 4.0 V |
| Ic    | Collector Current            | 30 A  |

### Maximum Temperatures

|                                |                |
|--------------------------------|----------------|
| Storage Temperature            | -65 to +200 °C |
| Operating Junction Temperature | +200 °C        |

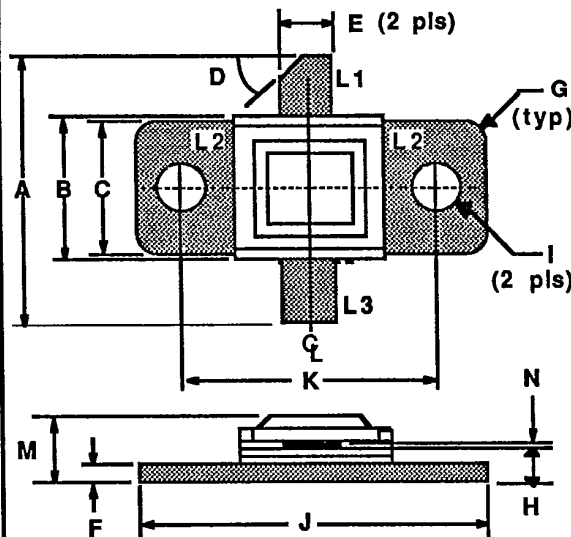
## (TYPICAL) POWER OUTPUT



## DME 375A

375 WATTS - 50 VOLTS  
1025/1150 MHz

## AVIONICS

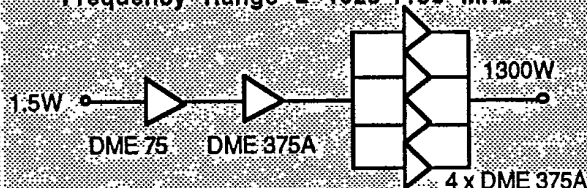


| DIM    | Millimeter | TOL | Inches   | TOL  |
|--------|------------|-----|----------|------|
| L1 : c |            |     |          |      |
| L2 : b |            |     |          |      |
| L3 : e |            |     |          |      |
| A      | 20.32      | .76 | .800     | .030 |
| B      | 10.16      | .13 | .400     | .005 |
| C      | 9.78       | .13 | .385     | .005 |
| D      | 45 °       | 5 ° | 45 °     | 5 °  |
| E      | 3.81       | .13 | .150     | .005 |
| F      | 1.52       | .13 | .060     | .005 |
| G      | 1.52 R     | .13 | .060 R   | .005 |
| H      | 3.05       | .13 | .120     | .005 |
| I      | 3.30 DIA   | .13 | .130 DIA | .005 |
| J      | 22.86      | .13 | .900     | .005 |
| K      | 16.51      | .13 | .650     | .005 |
| M      | 5.46       | REF | .215     | REF  |
| N      | 0.13       | .02 | .005     | .001 |

## TYPICAL AMPLIFIER LINE UP

Vcc = 50Volts

Frequency Range = 1025-1150 MHz

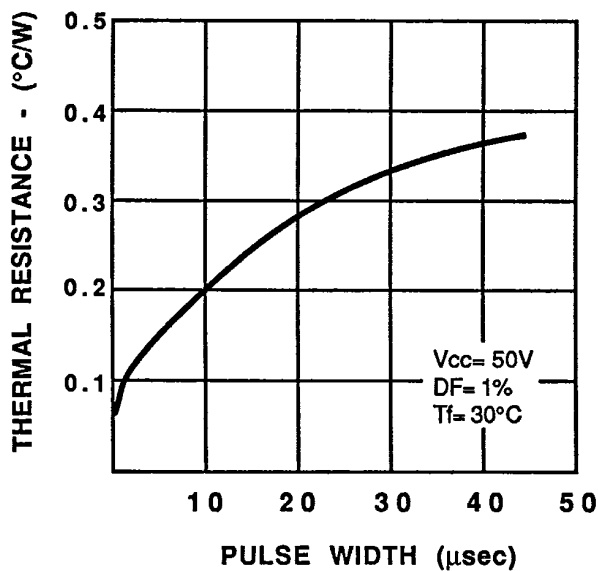


**DME 375A-2****ELECTRICAL CHARACTERISTICS<sup>1</sup>**

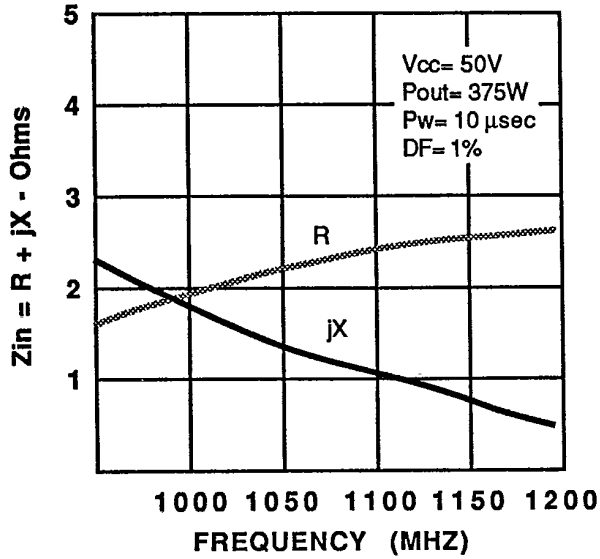
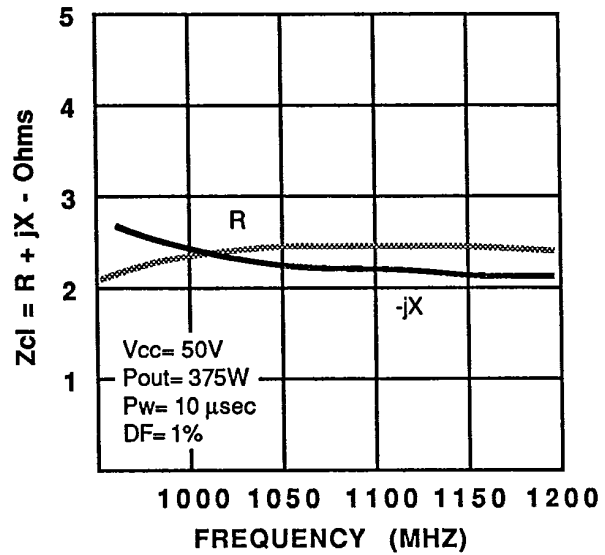
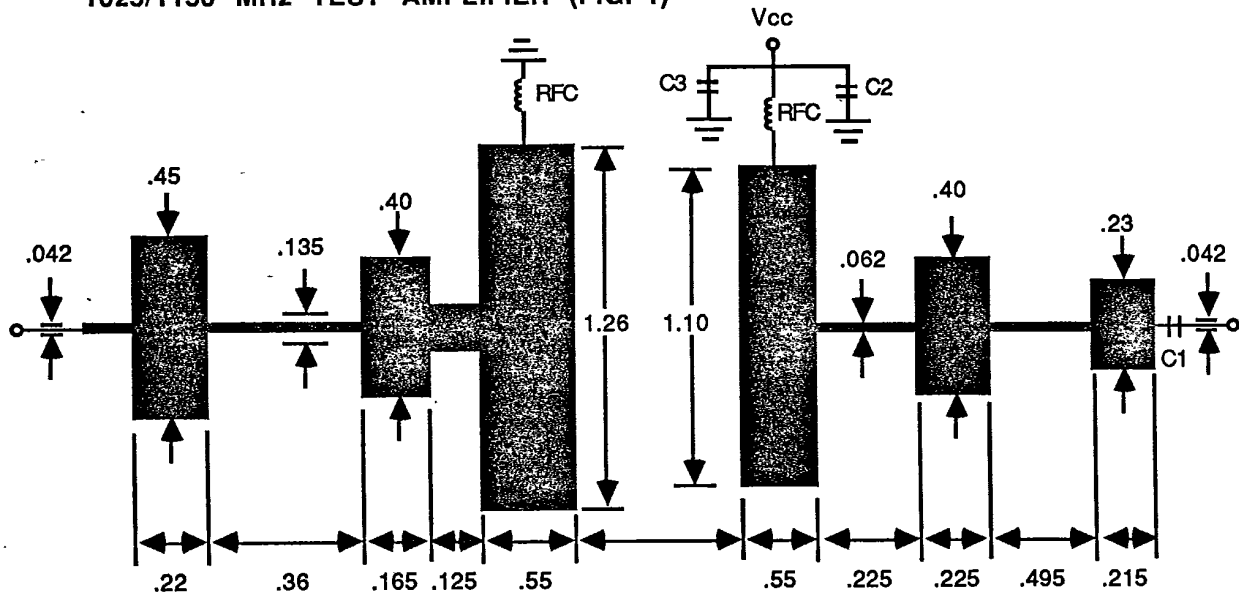
| SYMBOL                      | CHARACTERISTICS                             | TEST CONDITIONS                                                                                      | MIN. | TYP. | MAX. | UNITS |
|-----------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------|------|------|------|-------|
| P <sub>out</sub>            | Power Output                                | f = 1025 to 1150 MHz<br>V <sub>cc</sub> = 50 Volts<br>P <sub>w</sub> = 10μsec<br>D <sub>f</sub> = 1% | 375  |      |      | Watts |
| P <sub>in</sub>             | Power Input                                 |                                                                                                      |      |      | 85   | Watts |
| P <sub>g</sub> <sup>2</sup> | Power Gain                                  |                                                                                                      |      | 6.5  |      | dB    |
| η <sub>c</sub> <sup>2</sup> | Collector Efficiency                        |                                                                                                      |      | 40   |      | %     |
| VSWR <sup>2</sup>           | Load Mismatch Tolerance                     |                                                                                                      |      |      | ∞:1  |       |
| BV <sub>ebo</sub>           | Breakdown Voltage<br>(Emitter to Base)      | I <sub>c</sub> = 0A, I <sub>e</sub> = 20mA                                                           | 4.0  |      |      | Volts |
| BV <sub>ces</sub>           | Breakdown Voltage<br>(Collector to Emitter) | V <sub>be</sub> = 0A, I <sub>c</sub> = 25mA                                                          | 55   |      |      | Volts |
| h <sub>FE</sub>             | DC-Current Gain                             | V <sub>c</sub> = 5V, I <sub>c</sub> = 300mA                                                          | 10   |      |      |       |
| θ <sub>jc</sub>             | Thermal Resistance                          |                                                                                                      |      |      | 0.2  | °C/W  |

Note 1: T<sub>c</sub> = +25°C unless otherwise specified

Note 2: At rated power output

**THERMAL RESISTANCE VS  
PULSE WIDTH**

SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE

**DME375A-3****SERIES INPUT IMPEDANCE VS  
FREQUENCY (TYPICAL)****SERIES LOAD IMPEDANCE VS  
FREQUENCY (TYPICAL)****1025/1150 MHz TEST AMPLIFIER (FIG. 1)**

PCB = .020 TFE, 2 oz., Type "GT"  
 C1, 2 = 82pf Chip  
 C3 = 250 MFD