

DME 500

500 Watts, 50 Volts, Pulsed Avionics 1025 - 1150 MHz

GENERAL DESCRIPTION

The DME 500 is a high power COMMON BASE bipolar transistor. It is designed for pulsed systems in the frequency band 1025-1150 MHz. The device has gold thin-film metallization for proven highest MTTF. The transistor includes input and output prematch for broadband capability. Low thermal resistance package reduces junction temperature, extends life.

ABSOLUTE MAXIMUM RATINGS

Maximum Power Dissipation @ 25°C² 1700 Watts

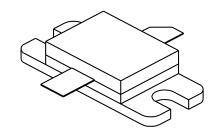
Maximum Voltage and Current

BVces Collector to Base Voltage 55 Volts
BVebo Emitter to Base Voltage 3.5 Volts
Ic Collector Current 40 Amps

Maximum Temperatures

Storage Temperature $-65 \text{ to} + 200^{\circ}\text{C}$ Operating Junction Temperature $+200^{\circ}\text{C}$

CASE OUTLINE 55KT, STYLE 1



ELECTRICAL CHARACTERISTICS @ 25 °C

| SYMBOL | CHARACTERISTICS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|---|---|--|------------|-----------|-------------|---------------------------|
| Pout Pin Pg η _c VSWR | Power Out Power Input Power Gain Collector Efficiency Load Mismatch Tolerance | F = 1025-1150 MHz Vcc = 50 Volts PW = 10 µsec DF = 1% F = 1090 MHz | 500 6.0 | 6.5 35 | 125 10:1 | Watts Watts dB % |

| BVebo BVces h _{FE} θjc ² | Emitter to Base Breakdown Collector to Emitter Breakdown DC - Current Gain Thermal Resistance | Ie = 30 mA Ic = 40 mA Ic = 500 mA, Vce = 5 V | 3.5 55 10 | 100 0.1 | Volts Volts °C/W |
|---|--|--|-----------------|------------|------------------------|
| ojc | Thermar Resistance | | | 0.1 | C/ // |

Note 1: At rated output power and pulse conditions

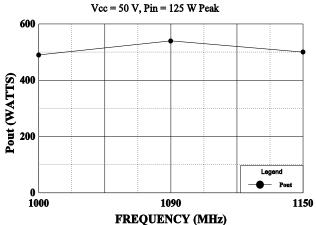
2: At rated pulse conditions

Initial Issue June, 1994

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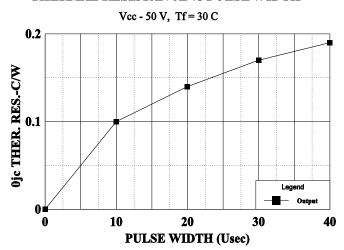


F-MICROWAVE SILICON POWER TRANSISTORS **POWER OUTPUT**

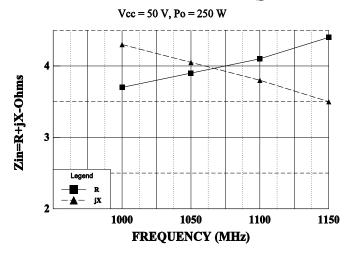


THERMAL RESISTANCE vs PULSE WIDTH

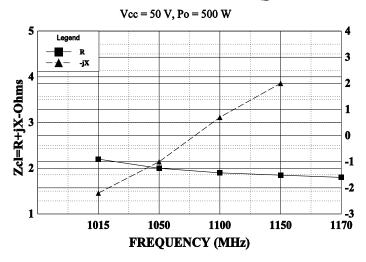
DME 500



SERIES INPUT IMPEDANCE vs FREQUENCY

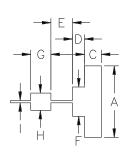


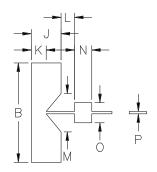
SERIES LOAD IMPEDANCE vs FREQUENCY





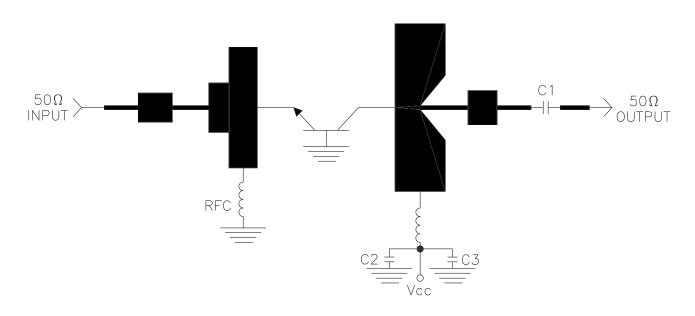
| REVISIONS | | | | |
|-----------------------------------|--|----------|--|--|
| ZONE REV DESCRIPTION DATE APPROVE | | APPROVED | | |





| DIM | INCHES |
|-----|--------|
| А | .745 |
| В | 1.035 |
| С | .175 |
| D | .125 |
| E | .225 |
| F | .305 |
| G | .210 |
| Н | .180 |
| 1 | .025 |
| J | .310 |
| K | .155 |
| L | .140 |
| М | .400 |
| N | .180 |
| 0 | .210 |
| Р | .025 |

1025/1150 MHz TEST AMPLIFIER



= Microstrip line on E_{10} , t=0.025" C1, C2 = 82PF chip capacitor C3 = 500μ FDc @ 75V capacitor



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CAGE DWG NO. DME 500 Α OPJR2 1/1SCALE SHEET