GHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

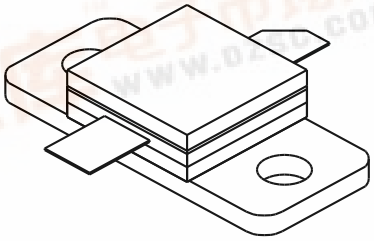
# *DME 150*

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

## GENERAL DESCRIPTION

The DME 150 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 and diffused ballasting for proven highest MTTF. The transistor includes input and ouput prematch for broadband capabilit. Low thermal resistance package reduces junction temperature, extends life.

## CASE OUTLINE
## 55AY, STYLE 1



## ABSOLUTE MAXIMUM RATINGS

| | |
|---|---|
| Maximum Power Dissipation @ 25°C[2] | 290 Watts |
| **Maximum Voltage and Current** | |
| BVces Collector to Base Voltage | 55 Volts |
| BVebo Emitter to Base Voltage | 4.0 Volts |
| Ic Collector Current | 15 Amps |
| **Maximum Temperatures** | |
| Storage Temperature | - 65 to + 150°C |
| Operating Junction Temperature | + 150°C |

## ELECTRICAL CHARACTERISTICS @ 25 °C

| SYMBOL | CHARACTERISTICS | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|
| **Pout** | Power Out | F = 1025-1150 MHz | 150 | | | Watts |
| **Pin** | Power Input | Vcc = 50 Volts | | | 25 | Watts |
| **Pg** | Power Gain | PW = 10 µsec | 7.8 | 8.3 | | dB |
| $\eta_c$ | Collector Efficiency | DF = 1% | | 40 | | % |
| **VSWR** | Load Mismatch Tolerance | F = 1090 MHz | | | 20:1 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **BVebo** | Emitter to Base Breakdown | Ie = 15 mA | 4.0 | | | Volts |
| **BVces** | Collector to Emitter Breakdown | Ic = 25 mA | 55 | | | Volts |
| **Cob** | Capacitance Collector to Base | Vcb = 50 Volts | | | | pF |
| $\mathbf{h_{FE}}$ | DC - Current Gain | Ic = 250 mA, Vce = 5 V | 20 | | | |
| $\theta$**jc**[2] | Thermal Resistance | | | | 0.6 | °C/W |

Note 1: At rated output power and pulse conditions
2: At rated pulse conditions

Initial Issue June 1, 1994



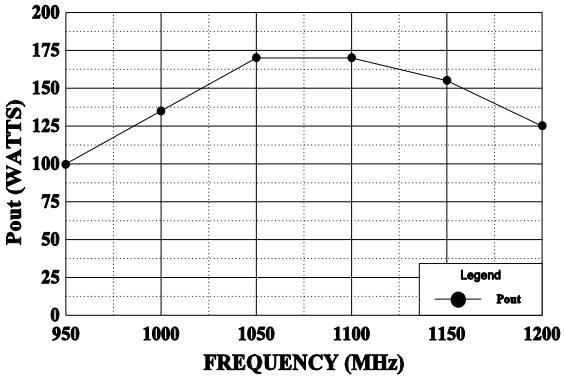
GHz Technology Inc. 3000 Oakmead Village Drive, Santa Clara, CA 95051-0808 Tel. 408 / 986-8031 Fax 408 / 986-8120

CHz TECHNOLOGY
RF·MICROWAVE SILICON POWER TRANSISTORS

# *DME150*

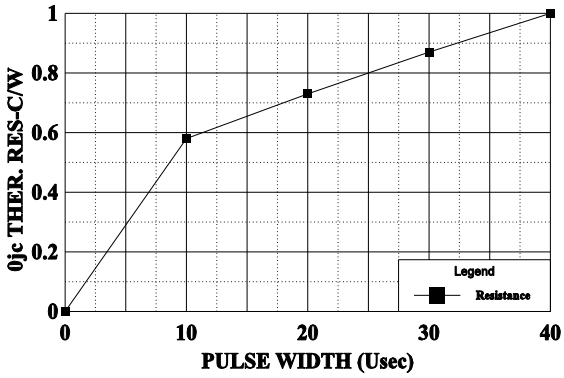
**POWER OUTPUT**

**Vcc = 50 V, Pin = 25 W**



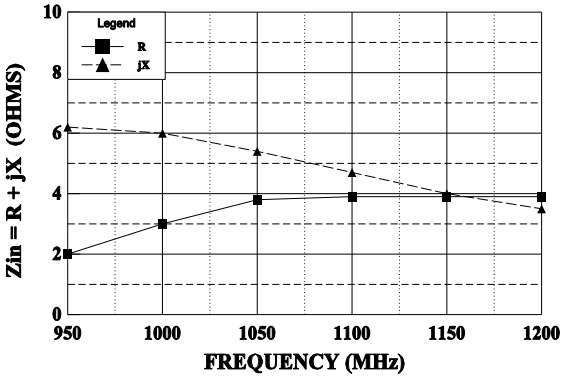

***THERMAL RESISTANCE vs PULSE WIDTH***

**Vcc=50V, DF=1%, Tf=30C**



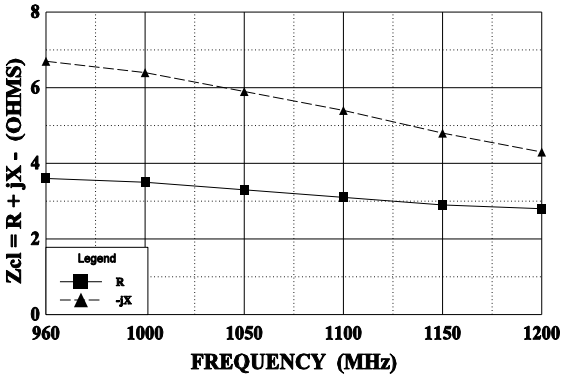

***SERIES INPUT IMPEDANCE vs FREQUENCY***

Vcc = 50 V, Po = 150 W

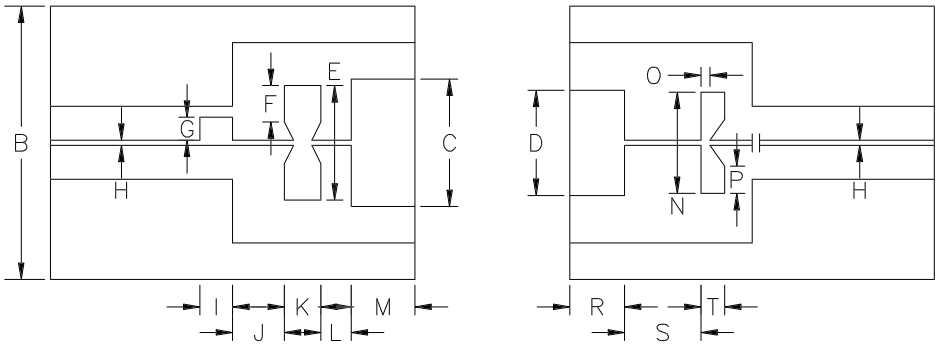



***SERIES LOAD IMPEDANCE vs FREQUENCY***

Vcc = 50 V, Po = 150 W

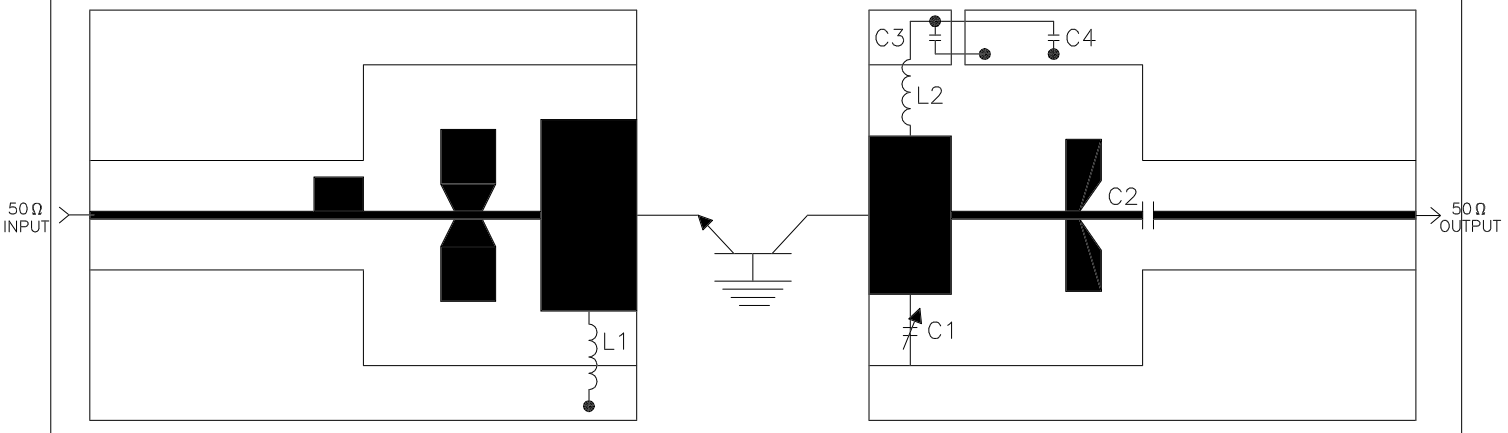


| REVISIONS | | | | |
|---|---|---|---|---|
| ZONE | REV | DESCRIPTION | DATE | APPROVED |




| DIM | INCHES |
|---|---|
| A | 2.000 |
| B | 1.500 |
| C | .700 |
| D | .550 |
| E | .628 |
| F | .200 |
| G | .140 |
| H | .028 |
| I | .180 |
| J | .284 |
| K | .200 |
| L | .166 |
| M | .350 |
| N | .528 |
| O | .050 |
| P | .150 |
| Q | .028 |
| R | .300 |
| S | .419 |
| T | .130 |

# 1025/1150 MHz TEST AMPLIFIER




Material=.010" Duroid Er=2.3

L1= 1" No. 20 wire
L2= 7 turns No. 20 wire, closewound 1/8" dia.
C1= Johanson No. 5701, 6–6PF
C2= A.T.C. Chip cap. 82PF
C3= A.T.C. Chip cap. 92PF
C4= 200 MFD @ 50V

| GHz TECHNOLOGY | CAGE | DWG NO. | REV |
|---|---|---|---|
| | 0PJR2 | DME 150 | A |
| | | SCALE 1/1 | SHEET |