

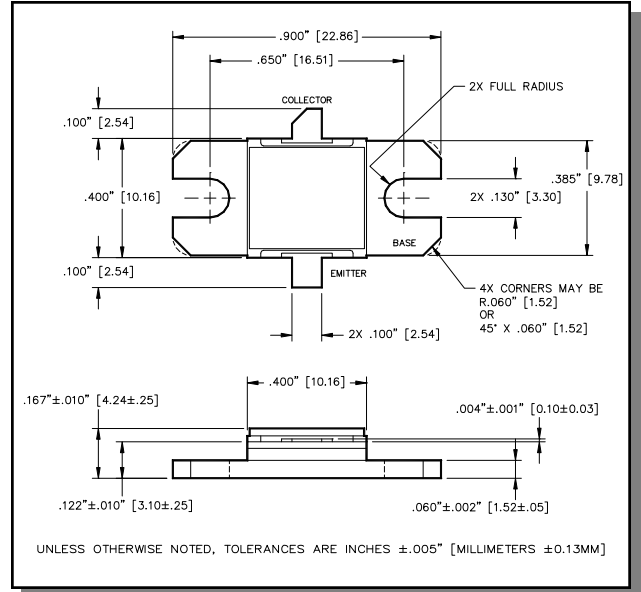
Radar Pulsed Power Transistor
30W, 3.1-3.4 GHz, 1μs Pulse, 10% Duty

M/A-COM Products
Released, 10 Jul 07

Features

- NPN silicon microwave power transistors
- Common base configuration
- Broadband Class C operation
- High efficiency inter-digitized geometry
- Diffused emitter ballasting resistors
- Gold metallization system
- Internal input and output impedance matching
- Hermetic metal/ceramic package
- RoHS compliant

Outline Drawing



Absolute Maximum Ratings at 25°C

| Parameter | Symbol | Rating | Units |
|---------------------------|-----------|-------------|-------|
| Collector-Emitter Voltage | V_{CES} | 65 | V |
| Emitter-Base Voltage | V_{EBO} | 3.0 | V |
| Collector Current (Peak) | I_C | 3.6 | A |
| Power Dissipation @ +25°C | P_{TOT} | 350 | W |
| Storage Temperature | T_{STG} | -65 to +200 | °C |
| Junction Temperature | T_J | 200 | °C |

Electrical Specifications: $T_C = 25 \pm 5^\circ\text{C}$ (Room Ambient)

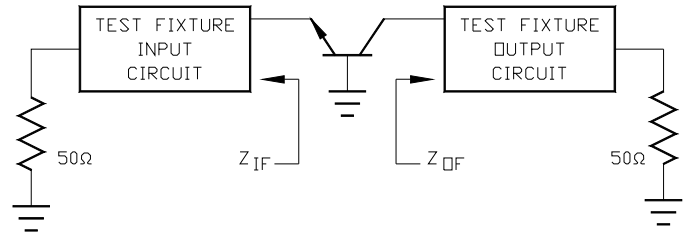
| Parameter | Test Conditions | Frequency | Symbol | Min | Max | Units |
|-------------------------------------|--|---------------------------------|--------------|-----|------|-------|
| Collector-Emitter Breakdown Voltage | $I_C = 10\text{mA}$ | | BV_{CES} | 65 | - | V |
| Collector-Emitter Leakage Current | $V_{CE} = 40\text{V}$ | | I_{CES} | - | 1.5 | mA |
| Thermal Resistance | $V_{CC} = 36\text{V}$, $P_{out} = 30\text{W}$ | $F = 3.1, 3.25, 3.4\text{ GHz}$ | $R_{TH(JC)}$ | - | 0.5 | °C/W |
| Input Power | $V_{CC} = 36\text{V}$, $P_{out} = 30\text{W}$ | $F = 3.1, 3.25, 3.4\text{ GHz}$ | P_{IN} | - | 5.33 | W |
| Power Gain | $V_{CC} = 36\text{V}$, $P_{out} = 30\text{W}$ | $F = 3.1, 3.25, 3.4\text{ GHz}$ | G_P | 7.5 | - | dB |
| Collector Efficiency | $V_{CC} = 36\text{V}$, $P_{out} = 30\text{W}$ | $F = 3.1, 3.25, 3.4\text{ GHz}$ | η_C | 35 | - | % |
| Input Return Loss | $V_{CC} = 36\text{V}$, $P_{out} = 30\text{W}$ | $F = 3.1, 3.25, 3.4\text{ GHz}$ | RL | - | -6 | dB |
| Load Mismatch Tolerance | $V_{CC} = 36\text{V}$, $P_{out} = 30\text{W}$ | $F = 3.25\text{ GHz}$ | VSWR-T | - | 2:1 | - |

Radar Pulsed Power Transistor
30W, 3.1-3.4 GHz, 1μs Pulse, 10% Duty

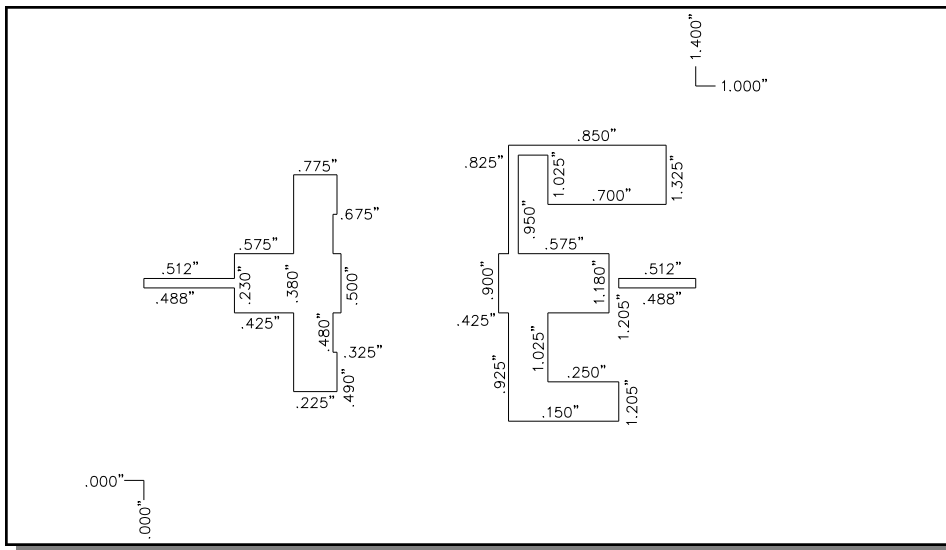
M/A-COM Products
Released, 10 Jul 07

RF Test Fixture Impedance

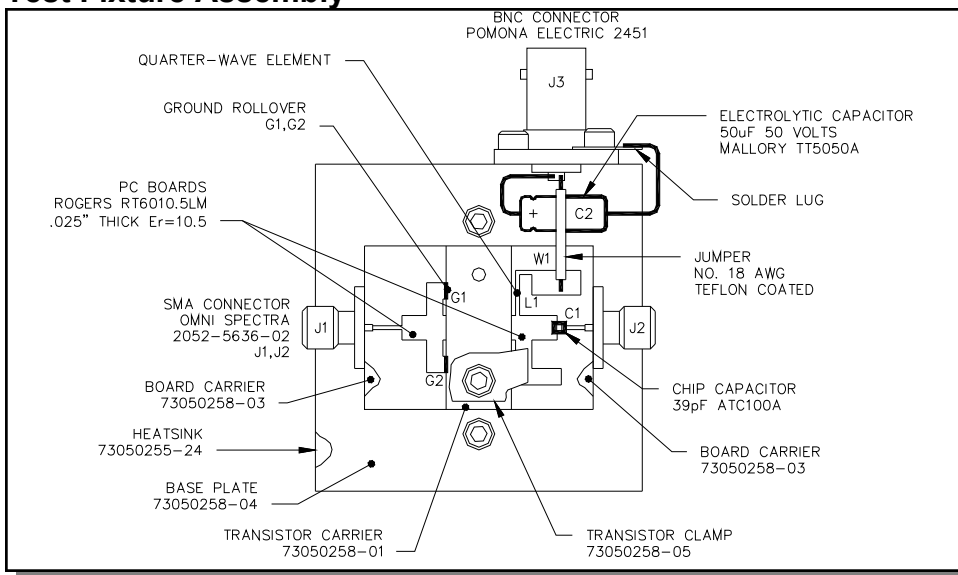
| F (GHz) | Z _{IF} (Ω) | Z _{OF} (Ω) |
|---------|---------------------|---------------------|
| 3.10 | 16.0 + j5.0 | 19.0 + j3.0 |
| 3.25 | 14.5 + j2.0 | 15.5 - j2.0 |
| 3.40 | 11.5 + j0.0 | 10.0 - j3.5 |



Test Fixture Circuit Dimensions



Test Fixture Assembly



ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

- **North America** Tel: 800.366.2266 / Fax: 978.366.2266
 - **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
 - **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298
- Visit www.macomtech.com for additional data sheets and product information.

M/A-COM Technology Solutions, Inc. and its affiliates reserve the right to make changes to the products or information contained herein without notice.