

Radar Pulsed Power Transistor 90W, 3.1-3.5 GHz, 2µs Pulse, 10% Duty

M/A-COM Products Released, 10 Aug 07

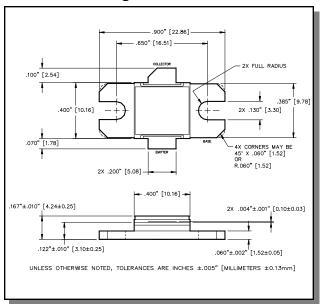
Features

- 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

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) | Ic | 10.7 | А |
| Power Dissipation @ +25°C | P _{TOT} | 580 | W |
| Storage Temperature | T_{STG} | -65 to +200 | °C |
| Junction Temperature | T_J | 200 | °C |

Outline Drawing



Electrical Specifications: T_C = 25 ± 5°C (Room Ambient)

| Parameter | Test Conditions | Frequency | Symbol | Min | Max | Units |
|-------------------------------------|-----------------------|-----------------------|---------------------|-----|-----|-------|
| Collector-Emitter Breakdown Voltage | I _C = 40mA | | BV_CES | 65 | - | V |
| Collector-Emitter Leakage Current | V _{CE} = 40V | | I _{CES} | - | 7.5 | mA |
| Thermal Resistance | Vcc = 36V, Pout = 90W | F = 3.1, 3.3, 3.5 GHz | R _{TH(JC)} | - | 0.3 | °C/W |
| Output Power | Vcc = 36V, Pout = 90W | F = 3.1, 3.3, 3.5 GHz | P _{IN} | - | 16 | W |
| Power Gain | Vcc = 36V, Pout = 90W | F = 3.1, 3.3, 3.5 GHz | G_P | 7.5 | - | dB |
| Collector Efficiency | Vcc = 36V, Pout = 90W | F = 3.1, 3.3, 3.5 GHz | ης | 35 | - | % |
| Input Return Loss | Vcc = 36V, Pout = 90W | F = 3.1, 3.3, 3.5 GHz | RL | - | -6 | dB |
| Load Mismatch Tolerance | Vcc = 36V, Pout = 90W | F = 3.1, 3.3, 3.5 GHz | VSWR-T | - | 2:1 | - |

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.

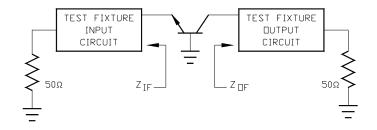


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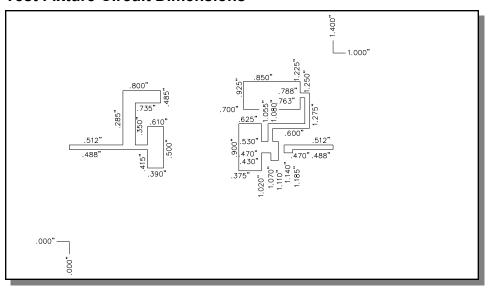
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RF Test Fixture Impedance

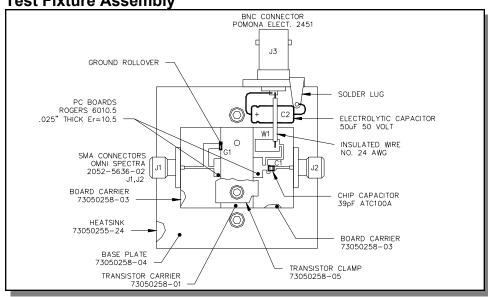
| F (GHz) | Z _{IF} (Ω) | Z _{OF} (Ω) |
|---------|---------------------|---------------------|
| 3.1 | 8.9 - j11.2 | 5.2 - j11.0 |
| 3.3 | 8.7 - j8.6 | 4.2 - j8.8 |
| 3.5 | 8.6 - j6.0 | 4.7 - j7.0 |



Test Fixture Circuit Dimensions



Test Fixture Assembly



2

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