

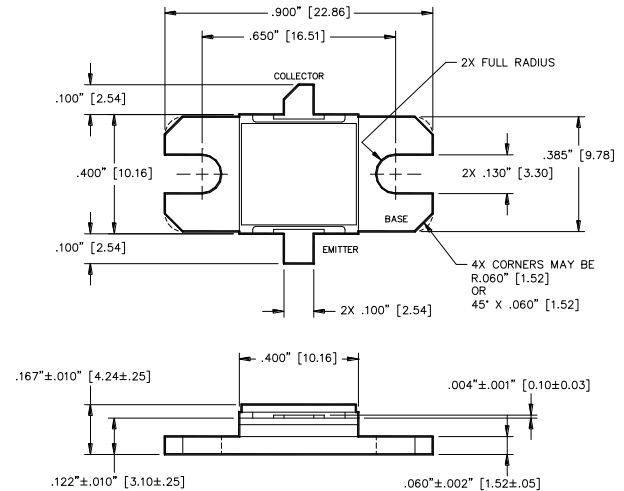
## Radar Pulsed Power Transistor 30W, 3.1-3.4 GHz, 1μs Pulse, 10% Duty

Rev. V1

### 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



UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005" [MILLIMETERS ±0.13MM]

### 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 )

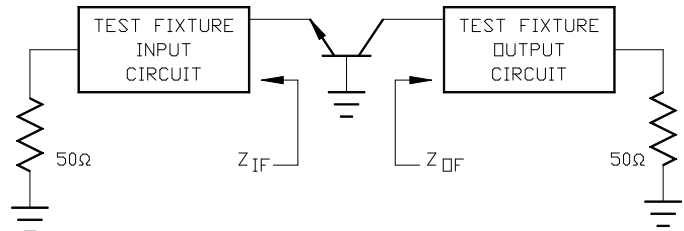
| Parameter                           | Test Conditions                                | Frequency                       | Symbol       | Min | Max  | Units |
|-------------------------------------|--|---------------------------------|--------------|-----|------|-------|
| Collector-Emitter Breakdown 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                | $V_{CC} = 36\text{V}$ , $P_{out} = 30\text{W}$ | $F = 3.1, 3.25, 3.4\text{ GHz}$ | $\eta_C$     | 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  | -     |

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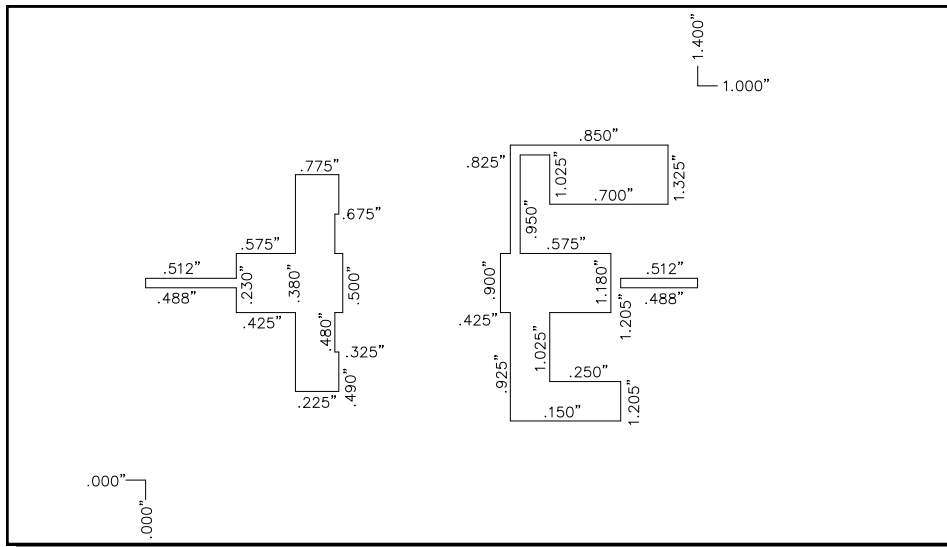
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### RF Test Fixture Impedance

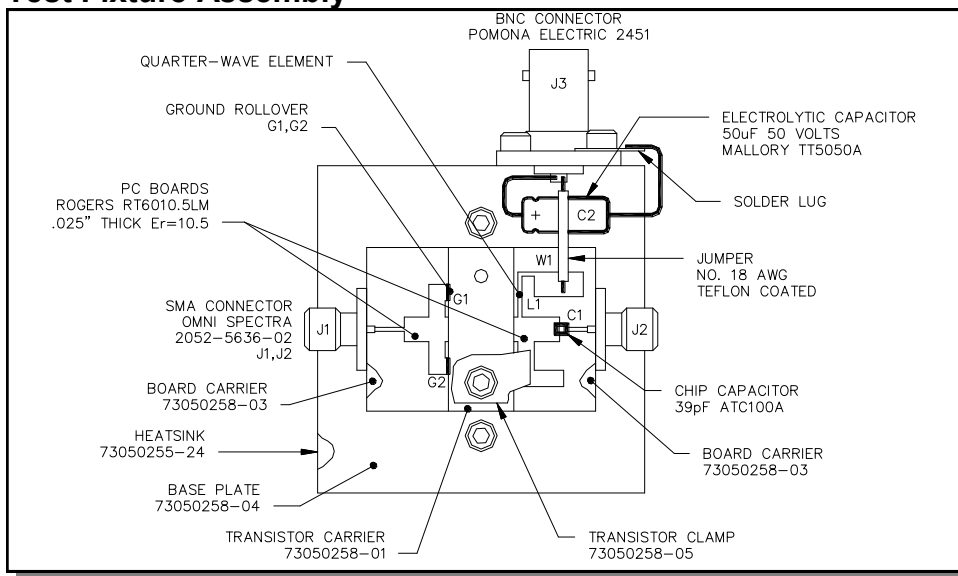
| F (GHz) | Z <sub>IF</sub> (Ω) | Z <sub>OF</sub> (Ω) |
|---------|---------------------|---------------------|
| 3.10    | 16.0 + j5.0         | 19.0 + j3.0         |
| 3.25    | 14.5 + j2.0         | 15.5 - j2.0         |
| 3.40    | 11.5 + j0.0         | 10.0 - j3.5         |



### Test Fixture Circuit Dimensions



### Test Fixture Assembly



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