

Radar Pulsed Power Transistor, 30W, 100 μ s Pulse, 10% Duty 3.1 - 3.5 GHz

PH3135-30M

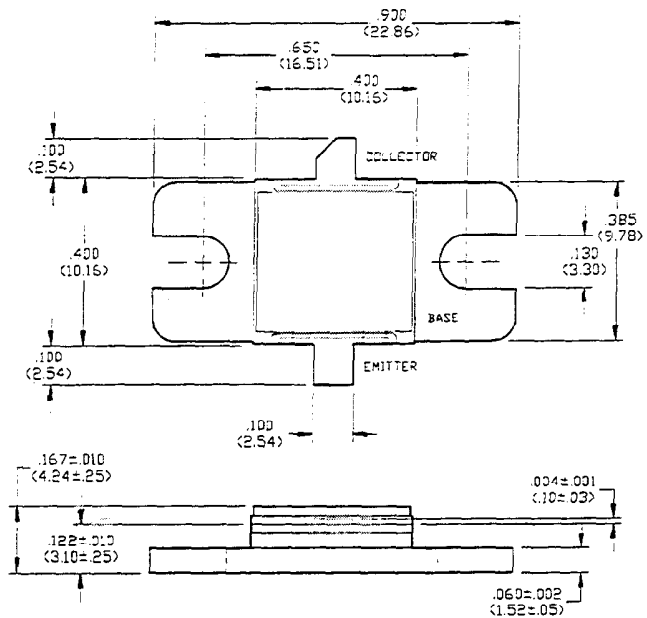
V2.00

Features

- NPN Silicon Microwave Power Transistor
- Common Base Configuration
- Broadband Class C Operation
- High Efficiency Interdigitated Geometry
- Diffused Emitter Ballasting Resistors
- Gold Metalization System
- Internal Input and Output Impedance Matching
- Hermetic Metal/Ceramic Package

Absolute Maximum Ratings at 25°C

| Parameter | Symbol | Rating | Units |
|---------------------------|-----------|-------------|-------|
| Collector-Emitter Voltage | V_{CES} | 65 | V |
| Emitter-Base Voltage | V_{EB0} | 3.0 | V |
| Collector Current (Peak) | I_C | 3.6 | A |
| Total Power Dissipation | P_{TOT} | 250 | W |
| Junction Temperature | T_J | 200 | °C |
| Storage Temperature | T_{STG} | -65 to +200 | °C |



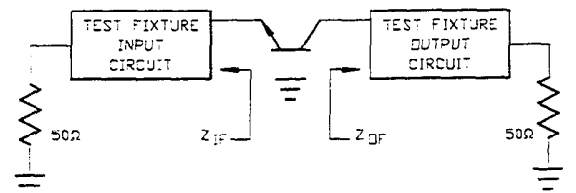
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES = .005" (MILLIMETERS = ±.13MM)

Electrical Characteristics at 25°C

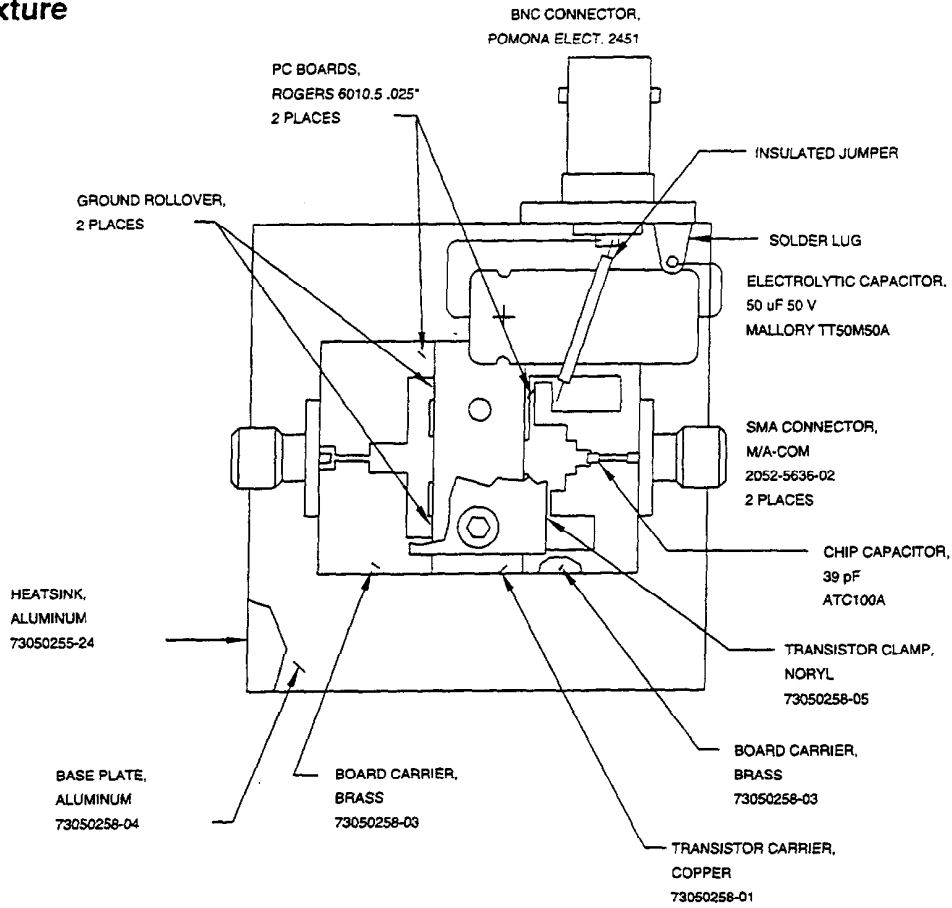
| Parameter | Symbol | Min | Max | Units | Test Conditions |
|-------------------------------------|--------------|-----|-----|-------|--|
| Collector-Emitter Breakdown Voltage | BV_{CES} | 65 | - | V | $I_C=20$ mA |
| Collector-Emitter Leakage Current | I_{CES} | - | 3.0 | mA | $V_{CE}=40$ V |
| Thermal Resistance | $R_{TH(JC)}$ | - | 0.7 | °C/W | $V_{CC}=36$ V, $P_{IN}=6.0$ W, $F=3.1, 3.3, 3.5$ GHz |
| Output Power | P_{OUT} | 30 | - | W | $V_{CC}=36$ V, $P_{IN}=6.0$ W, $F=3.1, 3.3, 3.5$ GHz |
| Power Gain | G_p | 7.0 | - | dB | $V_{CC}=36$ V, $P_{IN}=6.0$ W, $F=3.1, 3.3, 3.5$ GHz |
| Collector Efficiency | η_C | 35 | - | % | $V_{CC}=36$ V, $P_{IN}=6.0$ W, $F=3.1, 3.3, 3.5$ GHz |
| Input Return Loss | RL | 6 | - | dB | $V_{CC}=36$ V, $P_{IN}=6.0$ W, $F=3.1, 3.3, 3.5$ GHz |
| Load Mismatch Tolerance | VSWR-T | - | 3:1 | - | $V_{CC}=36$ V, $P_{IN}=6.0$ W, $F=3.1, 3.3, 3.5$ GHz |
| Load Mismatch Stability | VSWR-S | - | 2:1 | - | $V_{CC}=36$ V, $P_{IN}=6.0$ W, $F=3.1, 3.3, 3.5$ GHz |

Broadband Test Fixture Impedances

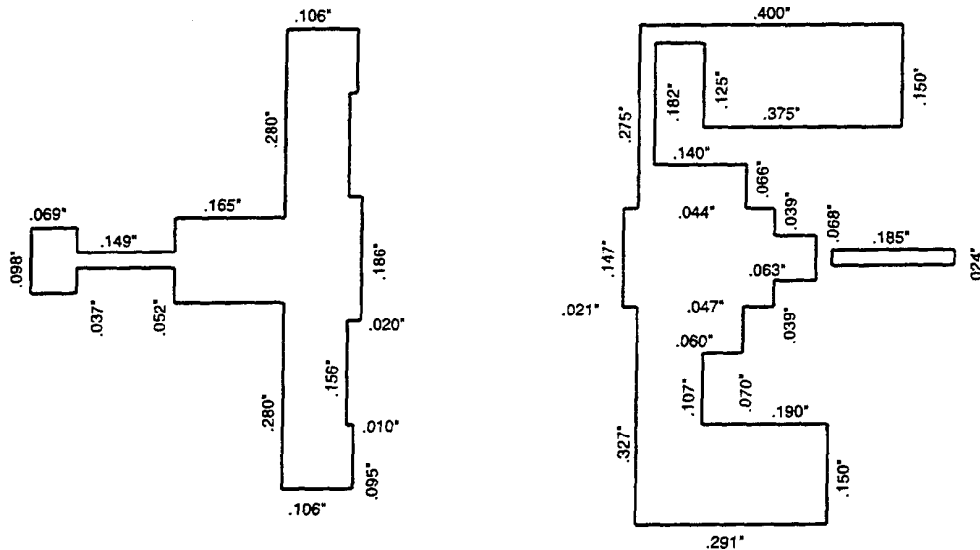
| F(GHz) | $Z_{IF}(\Omega)$ | $Z_{OF}(\Omega)$ |
|--------|------------------|------------------|
| 3.10 | $21 + j2.0$ | $13.8 - j11.7$ |
| 3.30 | $19 - j2.4$ | $7.7 - j8.2$ |
| 3.50 | $16 - j5.1$ | $5.3 - j5.3$ |



RF Test Fixture



Test Fixture PC Board Dimensions



Specifications Subject to Change Without Notice.

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