

Radar Pulsed Power Transistor, 135W, 20 μ s Pulse, 1% Duty 2.9 - 3.1 GHz PH2931-135S

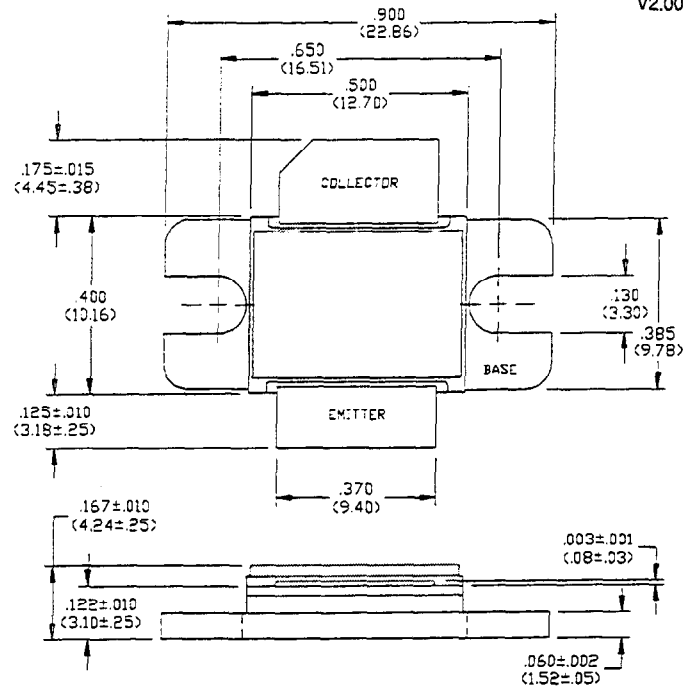
V2.00

Features

- NPN Silicon 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} | 80 | V |
| Emitter-Base Voltage | V_{EBO} | 3.0 | V |
| Collector Current (Peak) | I_C | 12 | A |
| Total Power Dissipation | P_{TOT} | 580 | W |
| Junction Temperature | T_J | 200 | °C |
| Storage Temperature | T_{STG} | -65 to +200 | °C |



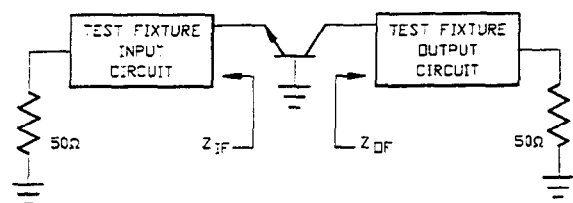
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ± 0.005
(MILLIMETERS ± 0.13 MM)

Electrical Characteristics at 25°C

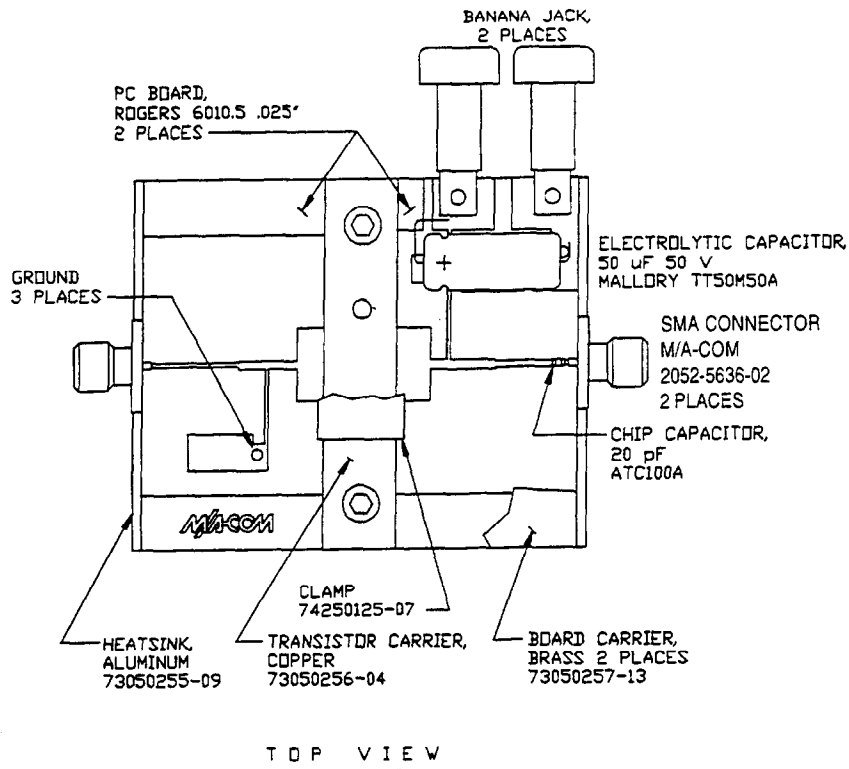
| Parameter | Symbol | Min | Max | Units | Test Conditions |
|-------------------------------------|--------------|-----|-----|-------|---|
| Collector-Emitter Breakdown Voltage | BV_{CES} | 80 | - | V | $I_C = 100$ mA |
| Collector-Emitter Leakage Current | I_{CES} | - | 7.5 | mA | $V_{CE} = 40$ V |
| Thermal Resistance | $R_{TH(JC)}$ | - | 0.3 | °C/W | $V_{CC} = 42$ V, $P_{IN} = 24$ W, $F = 2.9, 3.0, 3.1$ GHz |
| Output Power | P_{OUT} | 135 | - | W | $V_{CC} = 42$ V, $P_{IN} = 24$ W, $F = 2.9, 3.0, 3.1$ GHz |
| Power Gain | G_p | 7.5 | - | dB | $V_{CC} = 42$ V, $P_{IN} = 24$ W, $F = 2.9, 3.0, 3.1$ GHz |
| Collector Efficiency | η_C | 40 | - | % | $V_{CC} = 42$ V, $P_{IN} = 24$ W, $F = 2.9, 3.0, 3.1$ GHz |
| Input Return Loss | RL | 9 | - | dB | $V_{CC} = 42$ V, $P_{IN} = 24$ W, $F = 2.9, 3.0, 3.1$ GHz |
| Load Mismatch Tolerance | VSWR-T | - | 2:1 | - | $V_{CC} = 42$ V, $P_{IN} = 24$ W, $F = 2.9, 3.0, 3.1$ GHz |

Broadband Test Fixture Impedances

| F(GHz) | $Z_{IF}(\Omega)$ | $Z_{OF}(\Omega)$ |
|--------|------------------|------------------|
| 2.90 | 4.0 - j6.0 | 2.3 - j4.3 |
| 3.00 | 4.2 - j5.9 | 2.5 - j3.9 |
| 3.10 | 4.1 - j5.9 | 2.4 - j3.8 |



RF Test Fixture



Test Fixture PC Board Dimensions

