

# Radar Pulsed Power Transistor, 135W, 20 $\mu$ s Pulse, 1% Duty 2.9 - 3.1 GHz PH2931-135S

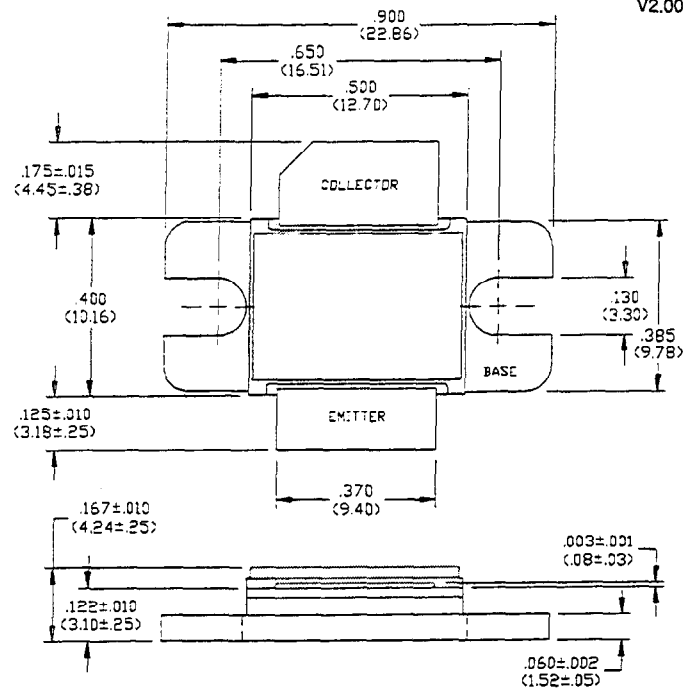
V2.00

## 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  $\pm 0.005$   
(MILLIMETERS  $\pm 0.13$ 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                | $\eta_C$     | 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       |

