

Radar Pulsed Power Transistor, 25W, 300 μ s Pulse, 10% Duty 1.2 - 1.4 GHz PH1214-25L

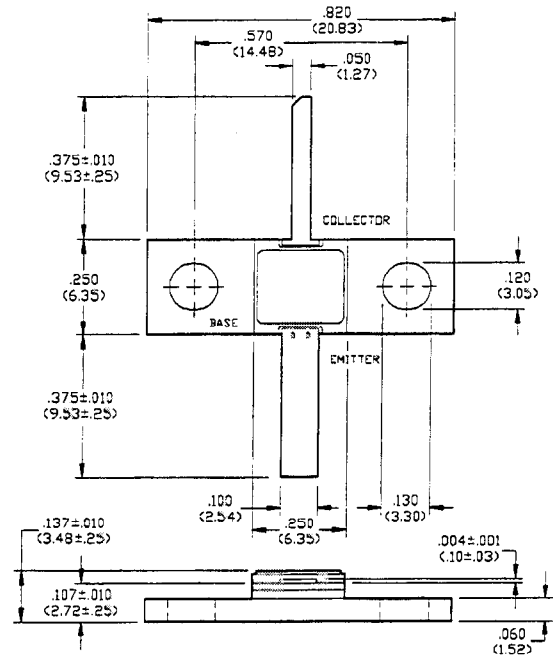
V2.00

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 Impedance Matching
- Hermetic Metal/Ceramic Package

Absolute Maximum Ratings at 25°C

| Parameter | Symbol | Rating | Units |
|---------------------------|-----------|-------------|-------|
| Collector-Emitter Voltage | V_{CES} | 70 | V |
| Emitter-Base Voltage | V_{EBO} | 3.0 | V |
| Collector Current (Peak) | I_C | 1.6 | A |
| Total Power Dissipation | P_{TOT} | 40 | W |
| Junction Temperature | T_J | 200 | °C |
| Storage Temperature | T_{STG} | -65 to +200 | °C |



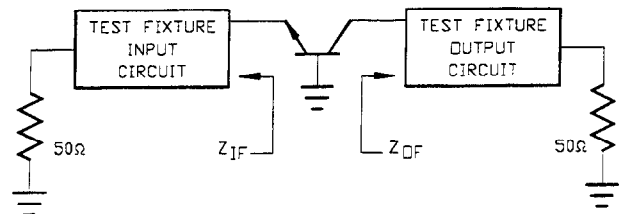
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ± 0.005 (MILLIMETERS ± 0.13 MM)

Electrical Characteristics at 25°C

| Parameter | Symbol | Min | Max | Units | Test Conditions |
|-------------------------------------|--------------|-----|-------|-------|---|
| Collector-Emitter Breakdown Voltage | BV_{CES} | 70 | - | V | $I_C=25$ mA |
| Collector-Emitter Leakage Current | I_{CES} | - | 3.0 | mA | $V_{CE}=40$ V |
| Thermal Resistance | $R_{TH(JC)}$ | - | 3.6 | °C/W | $V_{CC}=28$ V, $P_{OUT}=25$ W, $F=1.20, 1.30, 1.40$ GHz |
| Input Power | P_{IN} | - | 2.8 | W | $V_{CC}=28$ V, $P_{OUT}=25$ W, $F=1.20, 1.30, 1.40$ GHz |
| Power Gain | G_P | 9.5 | - | dB | $V_{CC}=28$ V, $P_{OUT}=25$ W, $F=1.20, 1.30, 1.40$ GHz |
| Collector Efficiency | η_C | 50 | - | % | $V_{CC}=28$ V, $P_{OUT}=25$ W, $F=1.20, 1.30, 1.40$ GHz |
| Input Return Loss | RL | 6 | - | dB | $V_{CC}=28$ V, $P_{OUT}=25$ W, $F=1.20, 1.30, 1.40$ GHz |
| Load Mismatch Tolerance | VSWR-T | - | 3:1 | - | $V_{CC}=28$ V, $P_{OUT}=25$ W, $F=1.20, 1.30, 1.40$ GHz |
| Load Mismatch Stability | VSWR-S | - | 1.5:1 | - | $V_{CC}=28$ V, $P_{OUT}=25$ W, $F=1.20, 1.30, 1.40$ GHz |

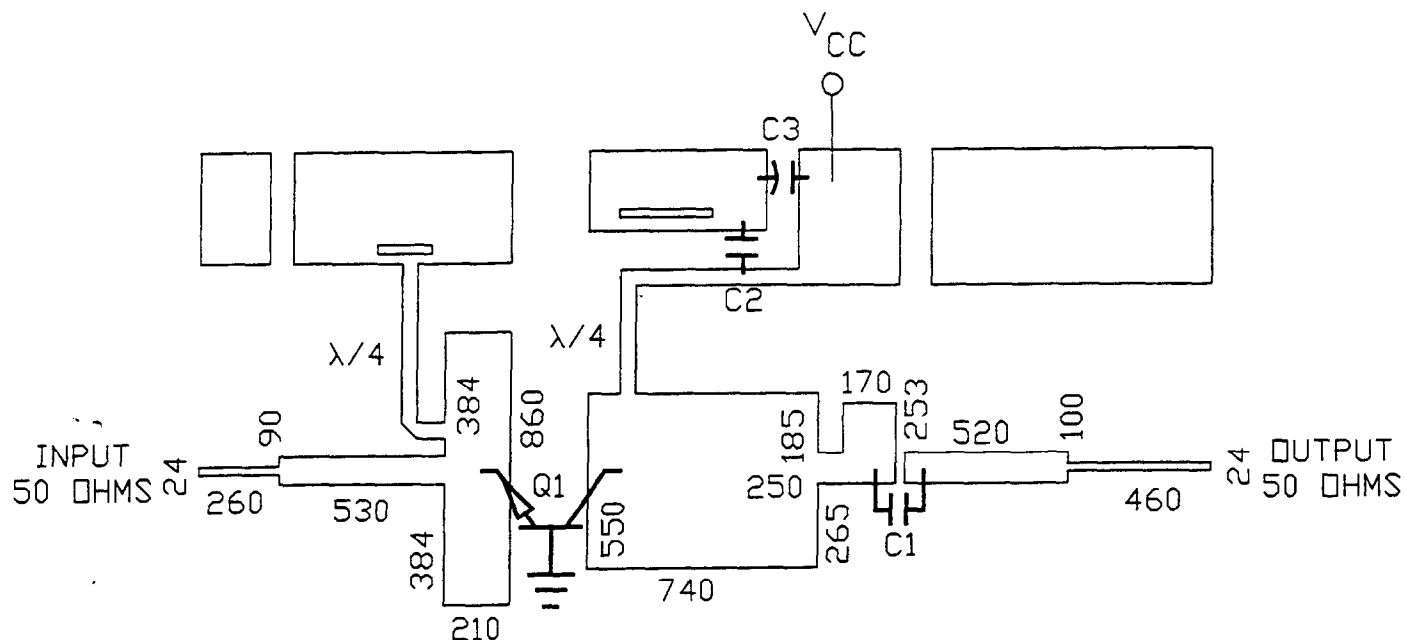
Broadband Test Fixture Impedances

| F(GHz) | $Z_{IF}(\Omega)$ | $Z_{OF}(\Omega)$ |
|--------|------------------|------------------|
| 1.20 | 2.1 - j4.5 | 3.7 + j0.9 |
| 1.30 | 2.1 - j3.9 | 3.6 + j0.4 |
| 1.40 | 2.2 - j3.4 | 3.0 + j0.2 |



Specifications Subject to Change Without Notice.

RF Test Fixture



ARTWORK DIMENSIONS IN MILS

PARTS LIST

- C1 C2 100 pF ATC SIZE A
- C3 50 uF 50 VOLTS
- Q1 PH1214-25M
- BOARD TYPE: ROGERS 6010.5 .025" THICK, $E_R = 10.5$

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