

# Radar Pulsed Power Transistor, 3W, 2ms Pulse, 20% Duty 1.2 - 1.4 GHz

**PH1214-3L**

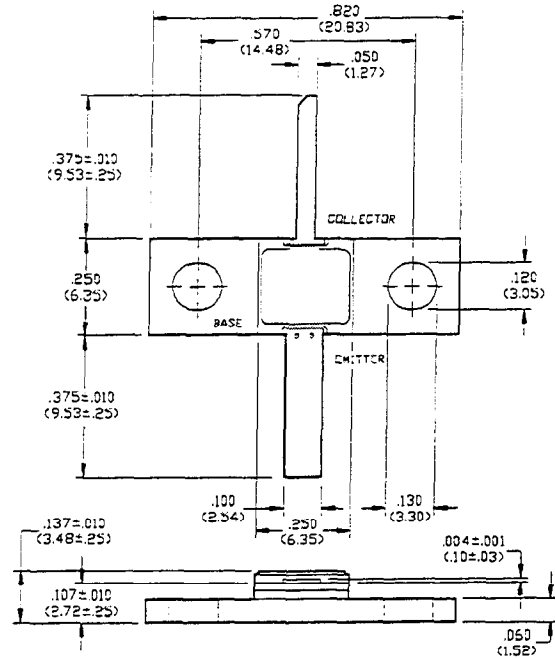
V2.00

## Features

- NPN Silicon Microwave Power Transistor
- Common Base Configuration
- Broadband Class C Operation
- Matrix 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	$V_{CES}$	50	V
Emitter-Base Voltage	$V_{EBO}$	3.5	V
Collector Current (Peak)	$I_C$	1.1	A
Total Power Dissipation	$P_{TOT}$	15.8	W
Junction Temperature	$T_J$	200	°C
Storage Temperature	$T_{STG}$	-65 to +200	°C



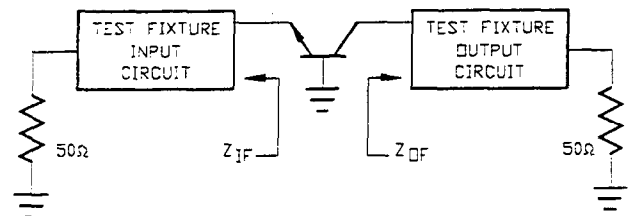
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005\* (MILLIMETERS ±.13MM)

## Electrical Characteristics at 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	$BV_{CES}$	50	-	V	$I_C=20$ mA
Collector-Emitter Leakage Current	$I_{CES}$	-	2.0	mA	$V_{CE}=40$ V
Thermal Resistance	$R_{TH(JC)}$	-	9.4	°C/W	$V_{CC}=16.5$ V, $P_{IN}=800$ mW, F=1.20, 1.30, 1.40 GHz
Output Power	$P_{OUT}$	3.0	-	W	$V_{CC}=16.5$ V, $P_{IN}=800$ mW, F=1.20, 1.30, 1.40 GHz
Power Gain	$G_P$	5.7	-	dB	$V_{CC}=16.5$ V, $P_{IN}=800$ mW, F=1.20, 1.30, 1.40 GHz
Collector Efficiency	$\eta_C$	40	-	%	$V_{CC}=16.5$ V, $P_{IN}=800$ mW, F=1.20, 1.30, 1.40 GHz
Input Return Loss	RL	9	-	dB	$V_{CC}=16.5$ V, $P_{IN}=800$ mW, F=1.20, 1.30, 1.40 GHz
Load Mismatch Tolerance	VSWR-T	-	2:1	-	$V_{CC}=16.5$ V, $P_{IN}=800$ mW, F=1.20, 1.30, 1.40 GHz
Load Mismatch Stability	VSWR-S	-	1.5:1	-	$V_{CC}=16.5$ V, $P_{IN}=800$ mW, F=1.20, 1.30, 1.40 GHz

## Broadband Test Fixture Impedances

F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
1.20	9.4 - j7.8	8.5 + j6.9
1.30	8.8 - j7.3	9.2 + j4.9
1.40	8.1 - j7.2	5.3 + j4.7



Specifications Subject to Change Without Notice.

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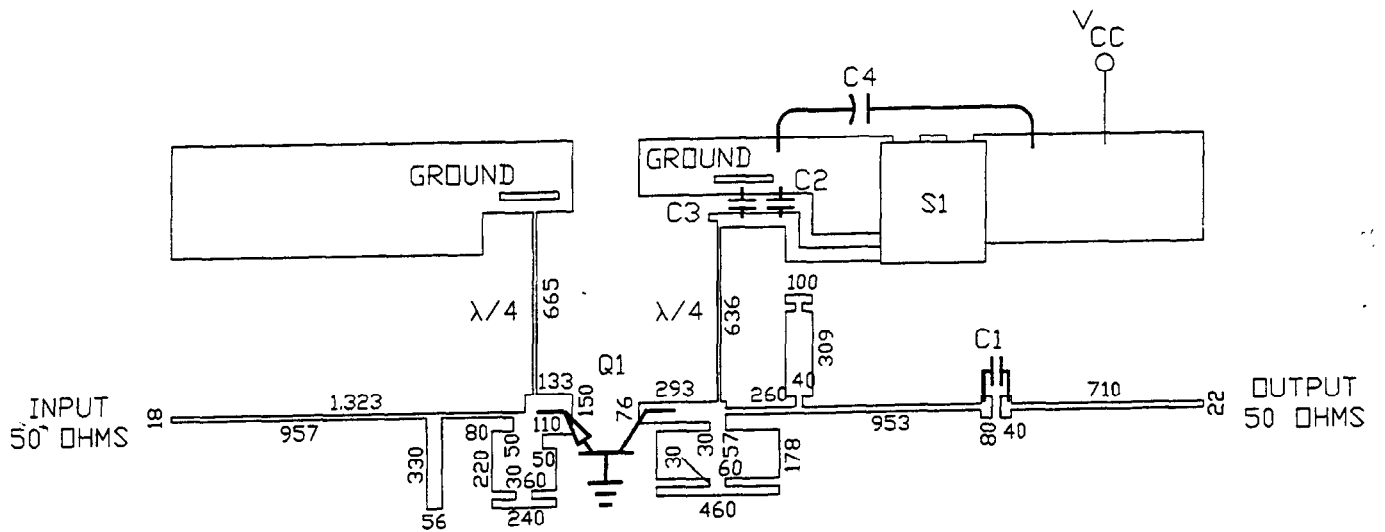
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RF Test Fixture



ARTWORK DIMENSIONS IN MILS

PARTS LIST

- C1 C2      100 pF ATC SIZE A
- C3        470 pF ATC SIZE A
- C4        50 uF 50 VOLTS
- Q1        PH1214-3L
- S1        DPDT
- BOARD TYPE: ROGERS 6010.5 .025" THICK,  $E_R = 10.5$

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