

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

PH1214-3L

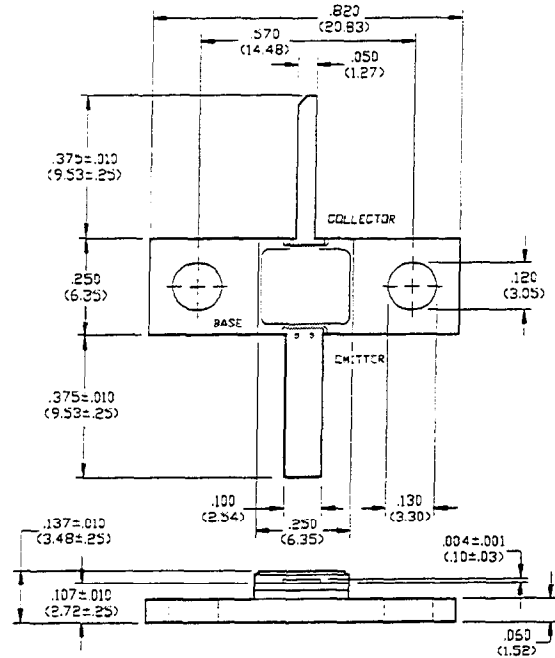
V2.00

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



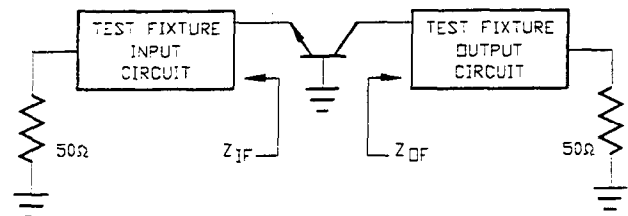
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005* (MILLIMETERS ±.13MM)

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	η_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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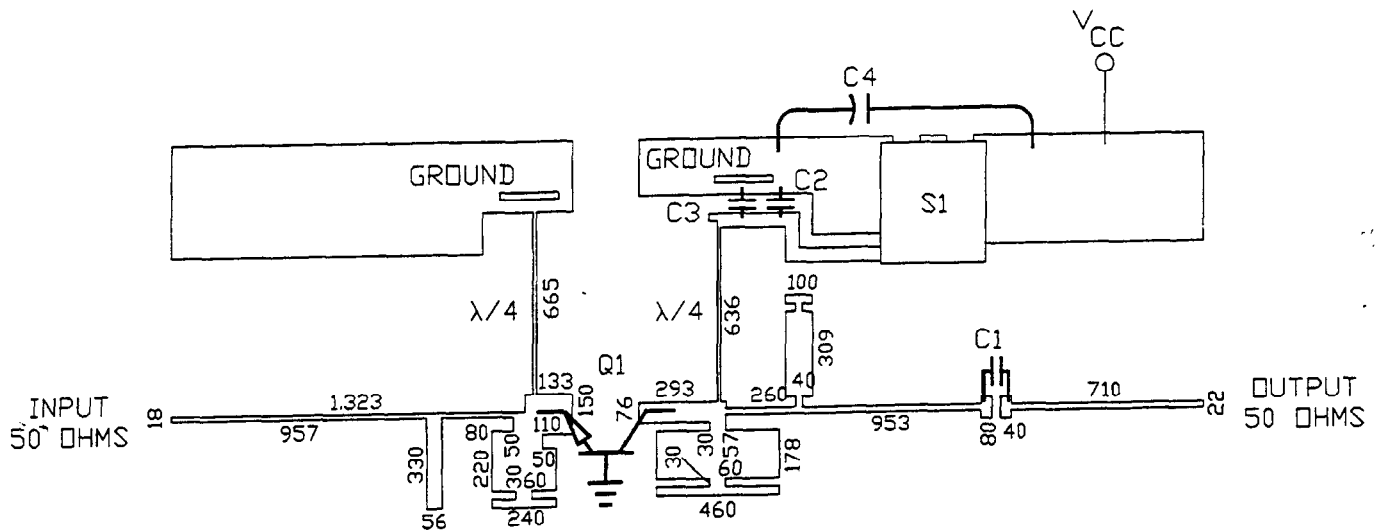
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RF Test Fixture



ARTWORK DIMENSIONS IN MILS

PARTS LIST

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

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