

Radar Pulsed Power Transistor, 3W, 2ms Pulse, 20% Duty

1.2 - 1.4 GHz

PH1214-3L

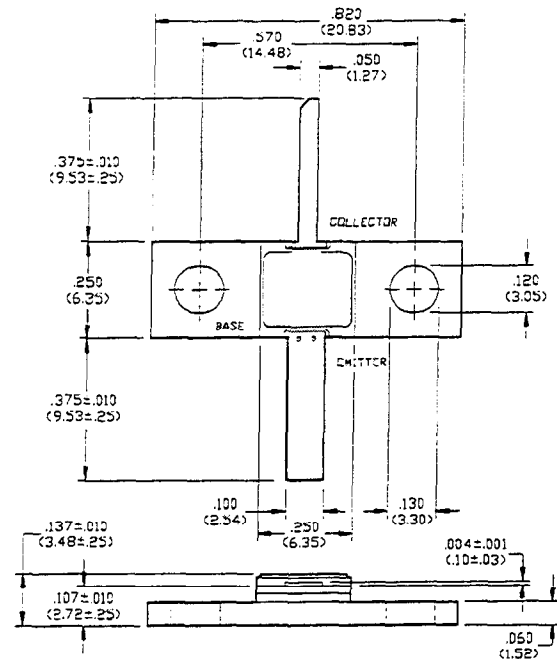
V2.00

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_{EB0}	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



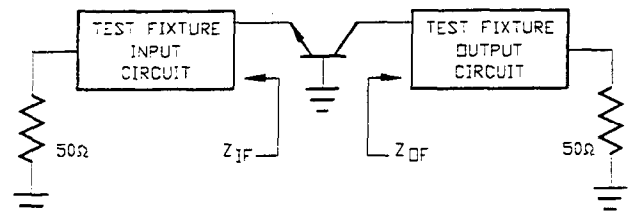
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005*
(MILLIMETERS ±.13MM)

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

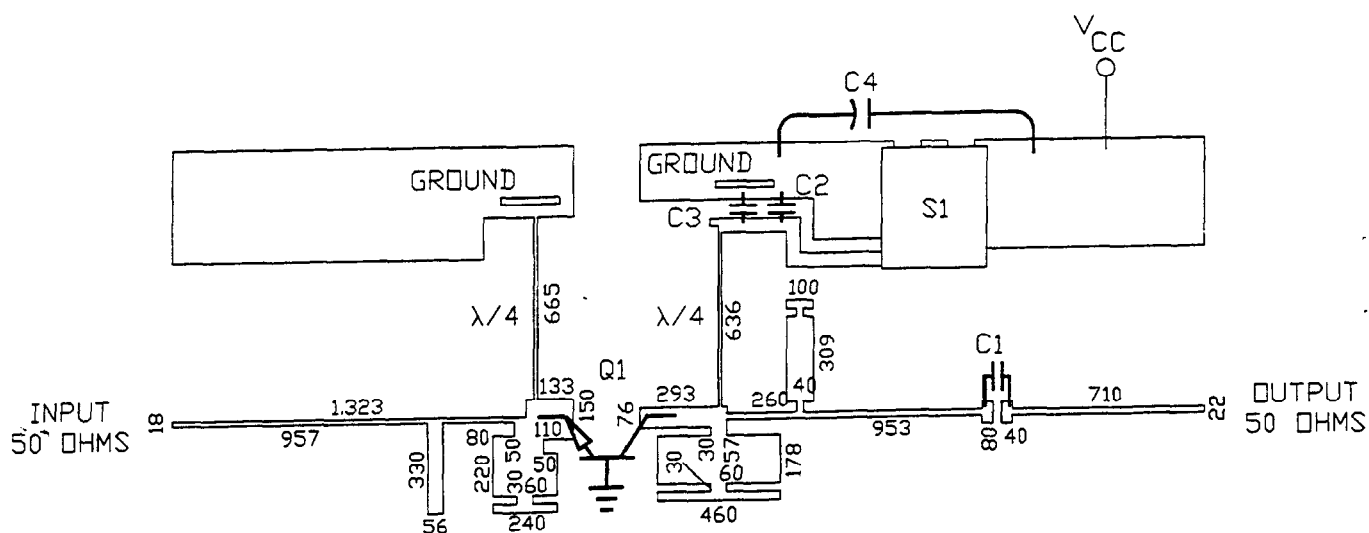
Broadband Test Fixture Impedances

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.

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, $E_R = 10.5$	