

Radar Pulsed Power Transistor, 0.85W, 2ms Pulse, 20% Duty 1.2 - 1.4 GHz

PH1214-0.85L

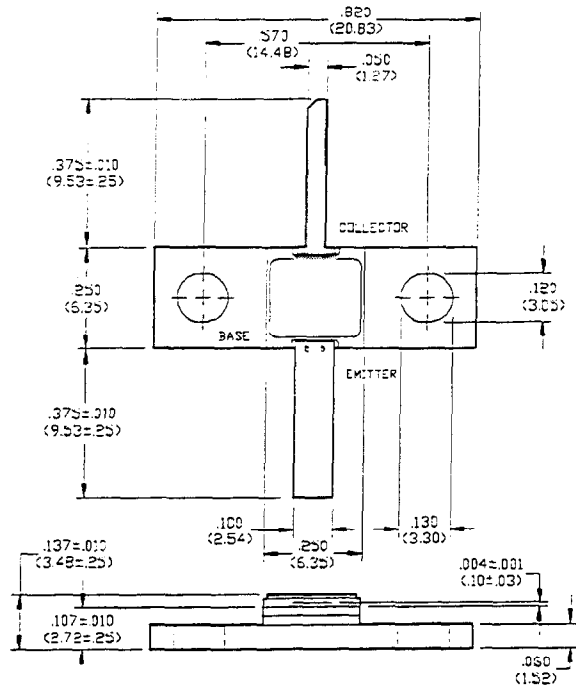
V2.00

Features

- NPN Silicon Microwave Power Transistor
- Common Emitter Configuration
- Broadband Class A 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}	27	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	3.5	V
Collector Current (Peak)	I_C	710	mA
Total Power Dissipation	P_{TOT}	7.8	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C



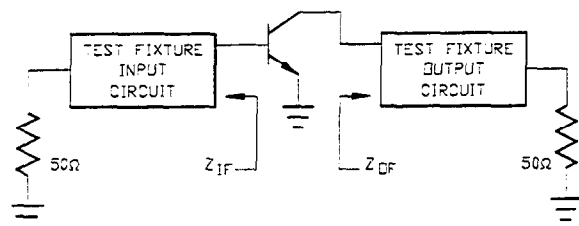
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES = 0.005" (MILLIMETERS = 0.13MM)

Electrical Characteristics at 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	27	-	V	$I_C = 4 \text{ mA}$
Collector-Emitter Breakdown Voltage	BV_{CEO}	20	-	V	$I_C = 10 \text{ mA}$
Collector-Emitter Leakage Current	I_{CES}	-	1.0	mA	$V_{CE} = 15 \text{ V}$
DC Forward Current Gain	h_{FE}	60	250	-	$V_{CE} = 5 \text{ V}, I_C = 100 \text{ mA}$
Thermal Resistance	$R_{TH(JC)}$	-	19	°C/W	
Output Power	P_{OUT}	0.85	-	W	$V_{FIXT} = 22, V_{CE}(typ) = 11.5, I_{CO}(typ) = 200 \text{ mA}$ $P_{IN} = 100 \text{ mW}, F = 1.20, 1.30, 1.40 \text{ GHz}$
Power Gain	G_p	9.3	-	dB	
Collector Efficiency	η_c	30	-	%	
Input Return Loss	RL	9	-	dB	
Load Mismatch Tolerance	VSWR-T	-	2:1	-	
Load Mismatch Stability	VSWR-S	-	1.5:1	-	

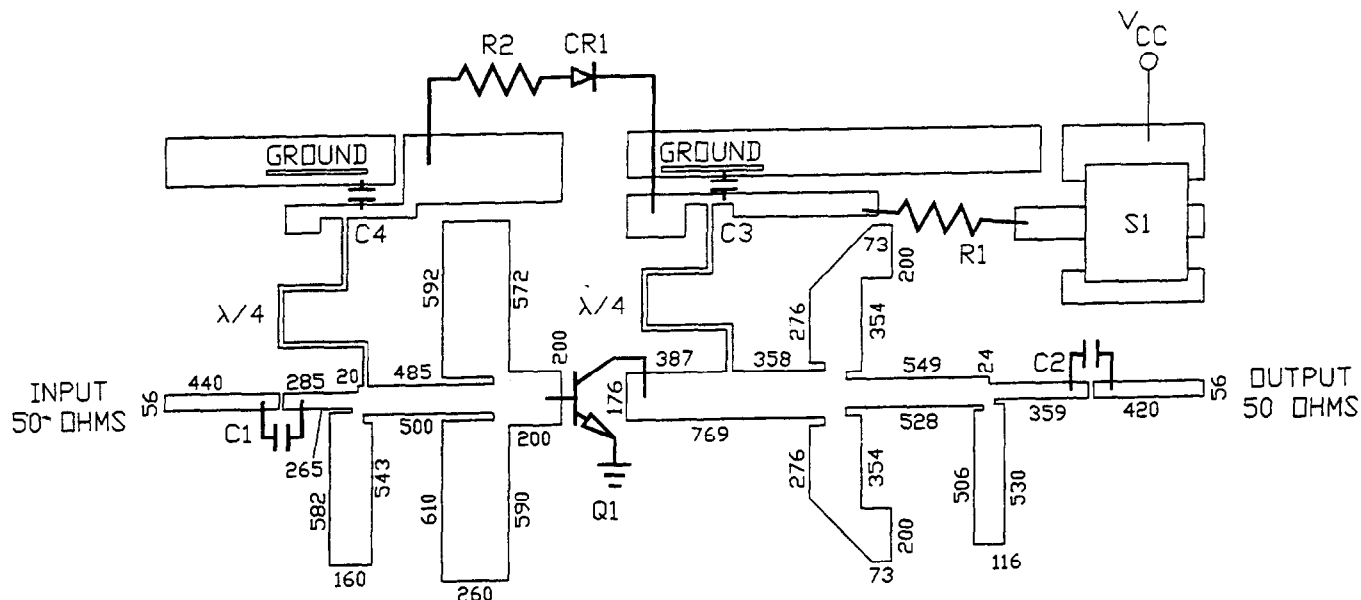
Broadband Test Fixture Impedances

F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
1.20	5.9 - j4.5	7.4 + j6.3
1.30	6.4 - j4.0	7.5 + j7.7
1.40	7.1 - j4.4	7.4 + j8.9



Specifications Subject to Change Without Notice.

RF Test Fixture



ARTWORK DIMENSIONS IN MILS

PARTS LIST

- C1 C2 100 pF ATC SIZE A
- C3 C4 .68 uF 35 VOLTS
- CR1 DIODE ECG5016A
- Q1 PH1214-.85L
- R1 52 OHMS 2 WATTS
- R2 830 OHMS 1/4 WATT
- S1 DPDT
- BOARD TYPE: ROGERS 6010.5 .025' THICK, $\epsilon_R = 10.5$

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