

Radar Pulsed Power Transistor, 25W, 1 μ s Pulse, 10% Duty 1.2 - 1.4 GHz

PH1214-25S

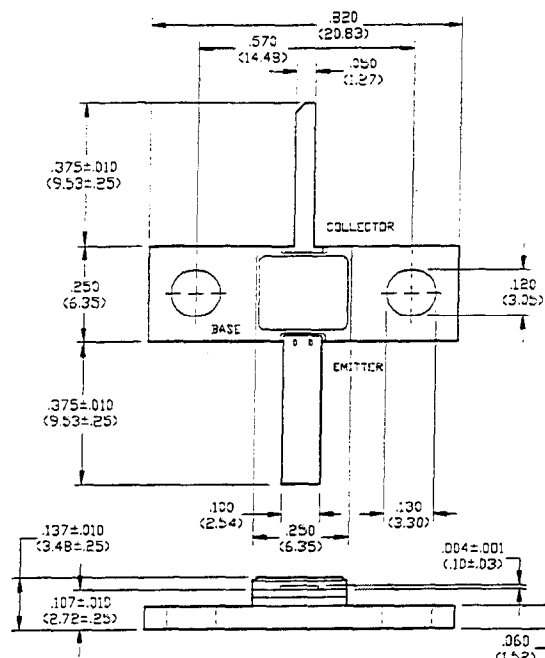
V2.00

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	3.5	A
Total Power Dissipation	P_{TOT}	90	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C



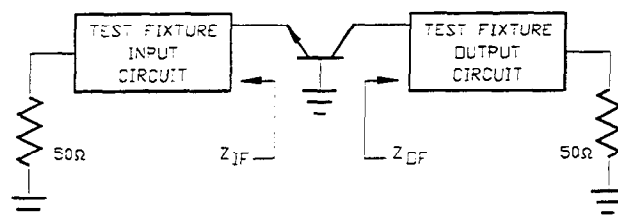
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES = .005" (MILLIMETERS = .13MM)

Electrical Characteristics at 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	70	-	V	$I_C = 25$ mA
Collector-Emitter Leakage Current	I_{CES}	-	3.0	mA	$V_{CE} = 40$ V
Thermal Resistance	$R_{TH(JC)}$	-	1.0	°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

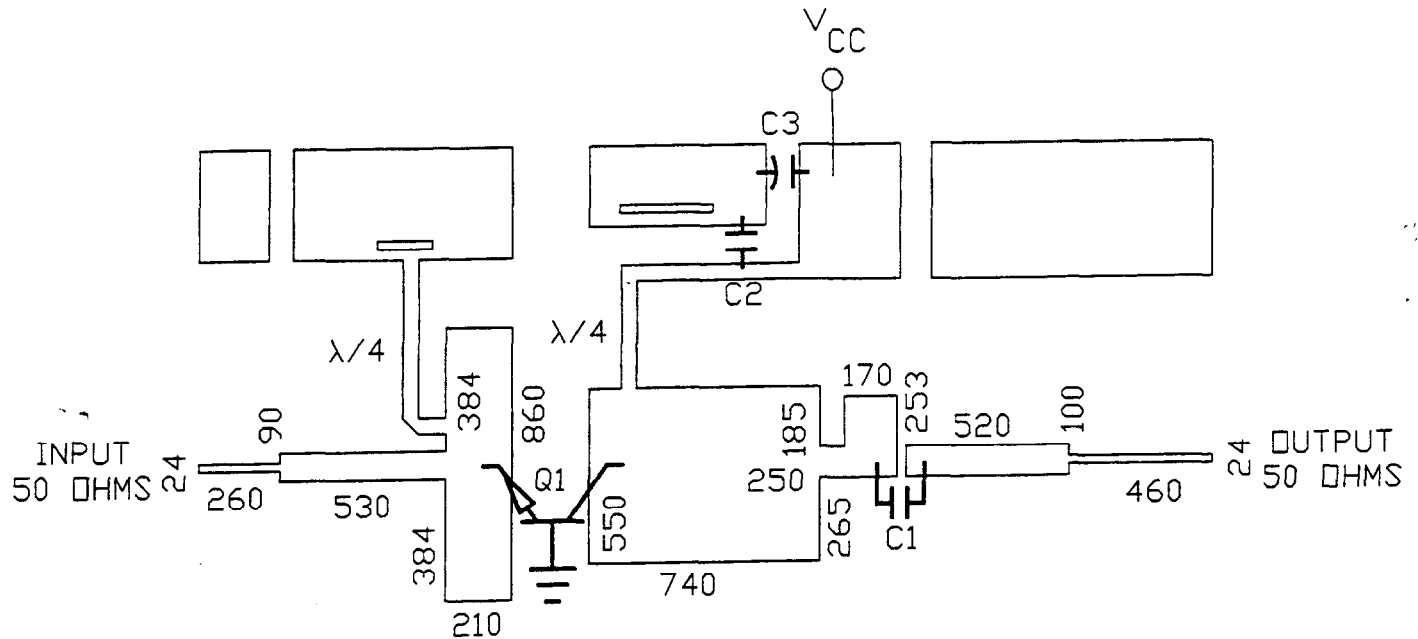
Broadband Test Fixture Impedances

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 μ F 50 VOLTS
 Q1 PH1214-25M
 BOARD TYPE: ROGERS 6010.5 .025" THICK, $E_R = 10.5$