

# Radar Pulsed Power Transistor, 25W, 300 $\mu$ s Pulse, 10% Duty 1.2 - 1.4 GHz PH1214-25L

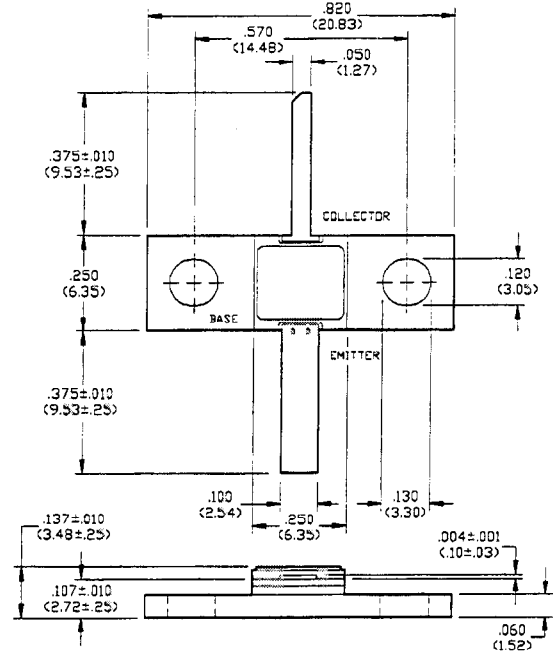
V2.00

## 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)	$I_C$	1.6	A
Total Power Dissipation	$P_{TOT}$	40	W
Junction Temperature	$T_J$	200	°C
Storage Temperature	$T_{STG}$	-65 to +200	°C



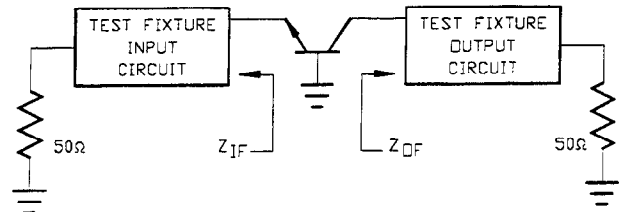
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES  $\pm 0.005$  MILLIMETERS  $\pm 0.13MM$

## 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	$R_{TH(JC)}$	-	3.6	°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	$\eta_C$	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

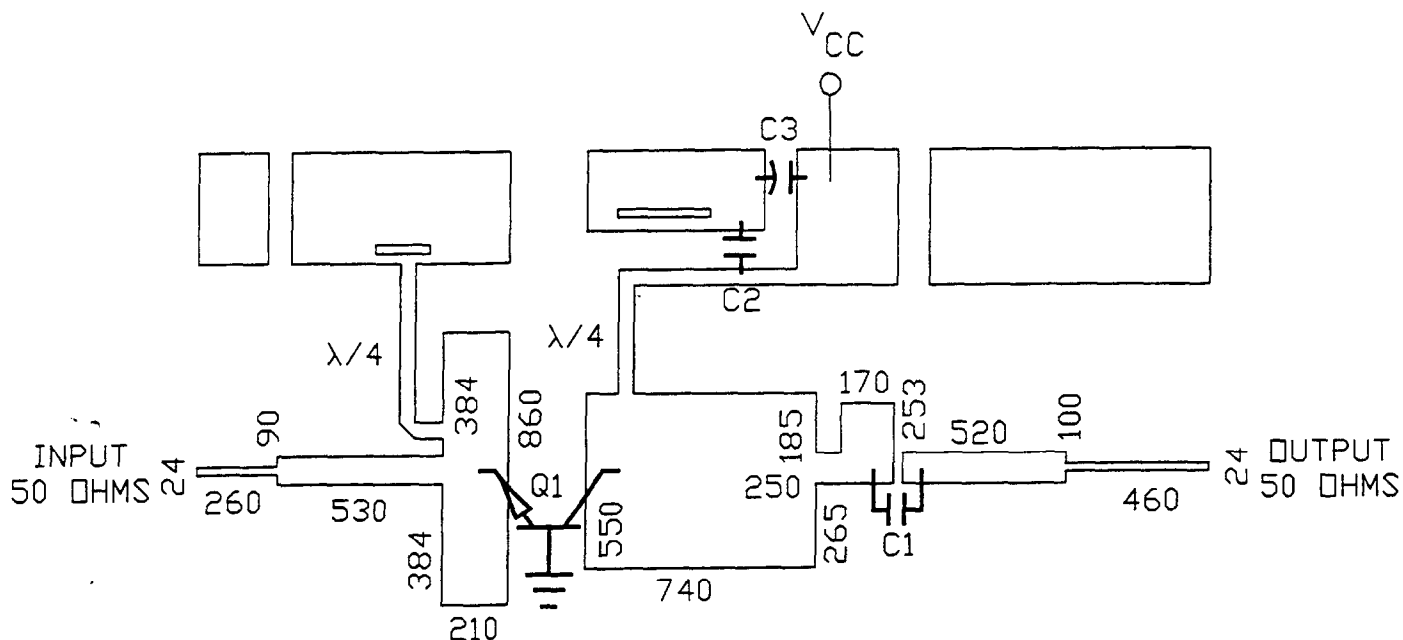
## Broadband Test Fixture Impedances

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

Specifications Subject to Change Without Notice.

M/A-COM, Inc.

9-127

North America: Tel. (800) 366-2266  
Fax (800) 618-8883

Asia/Pacific: Tel. +81 (03) 3226-1671  
Fax +81 (03) 3226-1451

Europe: Tel. +44 (1344) 869 595  
Fax +44 (1344) 300 020