

# Radar Pulsed Power Transistor, 20W, 2ms Pulse, 10% Duty 1.2 - 1.4 GHz

## PH1214-20EL

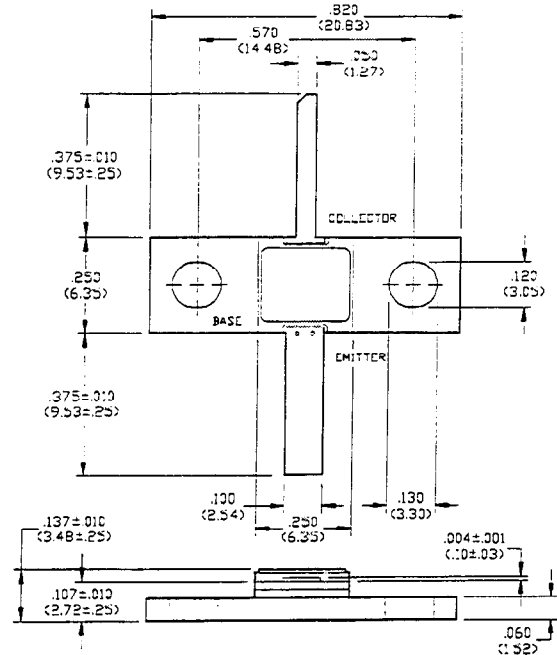
V2.00

### 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)	$I_C$	1.5	A
Total Power Dissipation	$P_{TOT}$	25	W
Junction Temperature	$T_J$	200	°C
Storage Temperature	$T_{STG}$	-65 to +200	°C



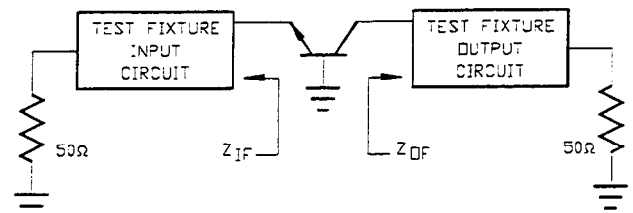
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES = .005" (MILLIMETERS = .13MM)

### Electrical Characteristics at 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	$BV_{CES}$	70	-	V	$I_C=25\text{ mA}$
Collector-Emitter Leakage Current	$I_{CES}$	-	3.0	mA	$V_{CE}=40\text{ V}$
Thermal Resistance	$R_{TH(JC)}$	-	5.8	°C/W	$V_{CC}=28\text{ V}$ , $P_{OUT}=20\text{ W}$ , $F=1.20, 1.30, 1.40\text{ GHz}$
Input Power	$P_{IN}$	-	2.3	W	$V_{CC}=28\text{ V}$ , $P_{OUT}=20\text{ W}$ , $F=1.20, 1.30, 1.40\text{ GHz}$
Power Gain	$G_p$	9.5	-	dB	$V_{CC}=28\text{ V}$ , $P_{OUT}=20\text{ W}$ , $F=1.20, 1.30, 1.40\text{ GHz}$
Collector Efficiency	$\eta_c$	50	-	%	$V_{CC}=28\text{ V}$ , $P_{OUT}=20\text{ W}$ , $F=1.20, 1.30, 1.40\text{ GHz}$
Input Return Loss	RL	6	-	dB	$V_{CC}=28\text{ V}$ , $P_{OUT}=20\text{ W}$ , $F=1.20, 1.30, 1.40\text{ GHz}$
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=28\text{ V}$ , $P_{OUT}=20\text{ W}$ , $F=1.20, 1.30, 1.40\text{ GHz}$
Load Mismatch Stability	VSWR-S	-	1.5:1	-	$V_{CC}=28\text{ V}$ , $P_{OUT}=20\text{ W}$ , $F=1.20, 1.30, 1.40\text{ GHz}$

### 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.

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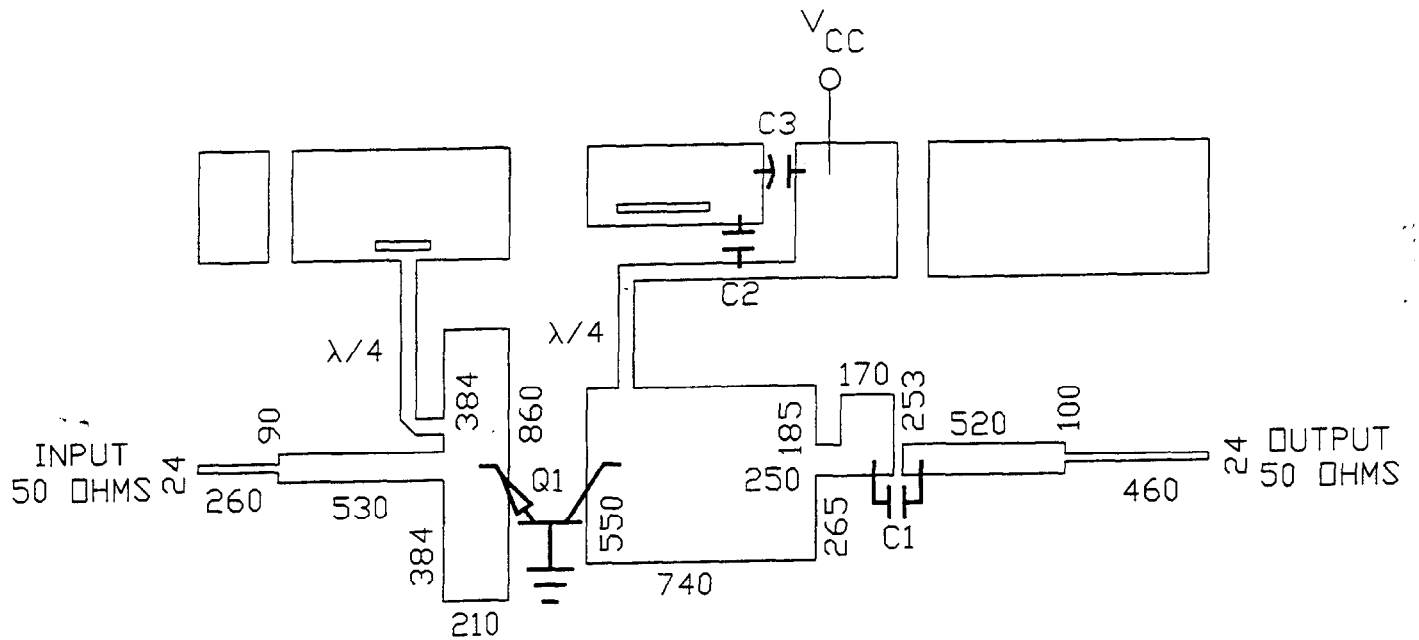
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RF Test Fixture



ARTWORK DIMENSIONS IN MILS

PARTS LIST

- C1 C2      100 pF ATC SIZE A
- C3         50 uF 50 VOLTS
- Q1         PH1214-25M
- BOARD TYPE: ROGERS 6010.5 .025" THICK, E<sub>R</sub> = 10.5

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