



Radar Pulsed Power Transistor, 2W, 100μs Pulse, 10% Duty 1.2 - 1.4 GHz PH1214-2M

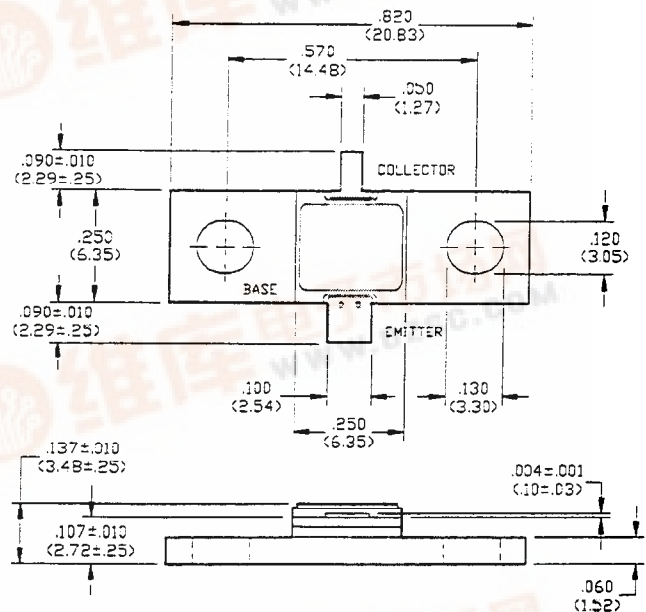
V2.00

Features

- NPN Silicon Microwave Power Transistor
- Common Base Configuration
- Broadband Class C Operation
- 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}	65	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current (Peak)	I_C	450	A
Total Power Dissipation	P_{TOT}	8.8	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C



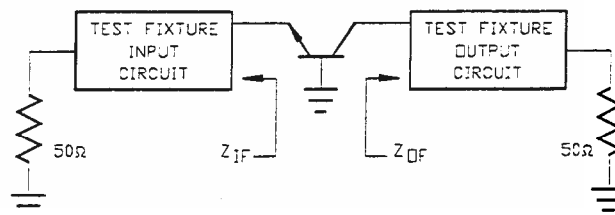
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005* (MILLIMETERS ±.13MM)

Electrical Characteristics at 25°C

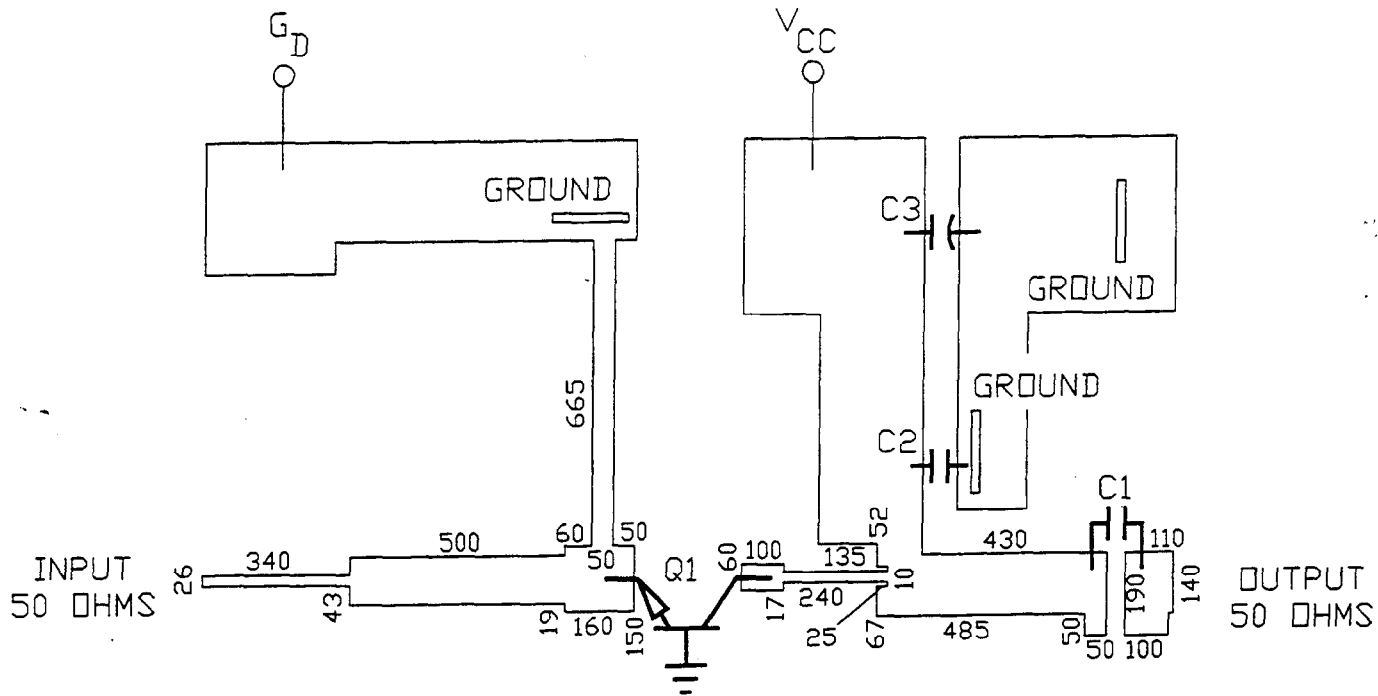
Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	65	-	V	$I_C=4\text{ mA}$
Collector-Emitter Leakage Current	I_{CES}	-	500	μA	$V_{CE}=40\text{ V}$
Thermal Resistance	$R_{TH(JC)}$	-	17	°C/W	$V_{CC}=28\text{ V}$, $P_{IN}=400\text{ mW}$, $F=1.20, 1.30, 1.40\text{ GHz}$
Output Power	P_{OUT}	2.0	-	W	$V_{CC}=28\text{ V}$, $P_{IN}=400\text{ mW}$, $F=1.20, 1.30, 1.40\text{ GHz}$
Power Gain	G_P	7.0	-	dB	$V_{CC}=28\text{ V}$, $P_{IN}=400\text{ mW}$, $F=1.20, 1.30, 1.40\text{ GHz}$
Collector Efficiency	η_C	40	-	%	$V_{CC}=28\text{ V}$, $P_{IN}=400\text{ mW}$, $F=1.20, 1.30, 1.40\text{ GHz}$
Input Return Loss	RL	6	-	dB	$V_{CC}=28\text{ V}$, $P_{IN}=400\text{ mW}$, $F=1.20, 1.30, 1.40\text{ GHz}$
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=28\text{ V}$, $P_{IN}=400\text{ mW}$, $F=1.20, 1.30, 1.40\text{ GHz}$
Load Mismatch Stability	VSWR-S	-	1.5:1	-	$V_{CC}=28\text{ V}$, $P_{IN}=400\text{ mW}$, $F=1.20, 1.30, 1.40\text{ GHz}$

Broadband Test Fixture Impedances

F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
1.20	9.5 - j6.3	11.6 + j33
1.30	8.6 - j4.9	12.0 + j34
1.40	8.1 - j3.6	11.4 + j37



RF Test Fixture



ARTWORK DIMENSIONS IN MILS

PARTS LIST

- C1 C2 100 pF ATC SIZE A
- C3 50 uF 50 VOLTS
- Q1 PH1214-2M
- BOARD TYPE: ROGERS 6010.5 .025" THICK, $E_R = 10.5$

Specifications Subject to Change Without Notice.

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