PH1214-3L

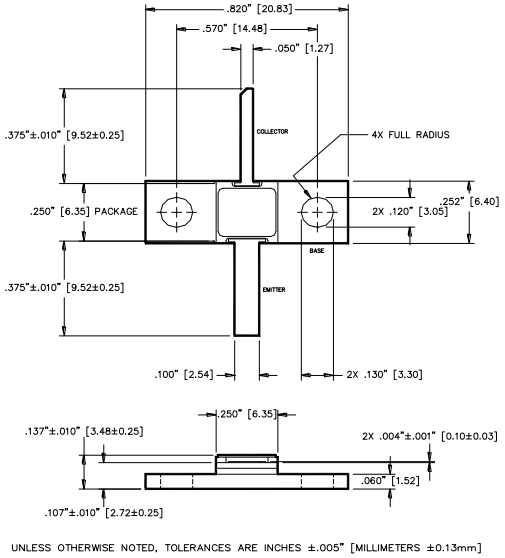
Radar Pulsed Power Transistor
3W, 1.2-1.4 GHz, 2ms Pulse, 20% Duty

Rev. V1

Features

- NPN silicon microwave power transistors
- Common base configuration
- Broadband Class C operation
- High efficiency inter-digitized geometry
- Diffused emitter ballasting resistors
- Gold metallization system
- Internal input and output impedance matching
- Hermetic metal/ceramic package
- RoHS compliant

Outline Drawing



UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005" [MILLIMETERS ±0.13mm]

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	50	V
Emitter-Base Voltage	V_{EBO}	3.5	V
Collector Current (Peak)	I_C	1.1	A
Power Dissipation @ +25°C	P_{TOT}	18.6	W
Storage Temperature	T_{STG}	-65 to +200	°C
Junction Temperature	T_J	200	°C

Electrical Specifications: T_C = 25 ± 5°C (Room Ambient)

Parameter	Test Conditions	Frequency	Symbol	Min	Max	Units
Collector-Emitter Breakdown Voltage	I_C = 20mA		BV_{CES}	50	-	V
Collector-Emitter Leakage Current	V_{CE} = 40V		I_{CES}	-	2.0	mA
Thermal Resistance	Vcc = 16.5V, Pin = 0.8W	F = 1.2, 1.3, 1.4 GHz	$R_{TH(JC)}$	-	9.4	°C/W
Output Power	Vcc = 16.5V, Pin = 0.8W	F = 1.2, 1.3, 1.4 GHz	P_{OUT}	-	3.0	W
Power Gain	Vcc = 16.5V, Pin = 0.8W	F = 1.2, 1.3, 1.4 GHz	G_P	5.7	-	dB
Collector Efficiency	Vcc = 16.5V, Pin = 0.8W	F = 1.2, 1.3, 1.4 GHz	η_C	40	-	%
Input Return Loss	Vcc = 16.5V, Pin = 0.8W	F = 1.2, 1.3, 1.4 GHz	RL	-	-9	dB
Load Mismatch Tolerance	Vcc = 16.5V, Pin = 0.8W	F = 1.2, 1.3, 1.4 GHz	VSWR-T	-	2:1	-
Load Mismatch Stability	Vcc = 16.5V, Pin = 0.8W	F = 1.2, 1.3, 1.4 GHz	VSWR-S	-	1.5:1	-

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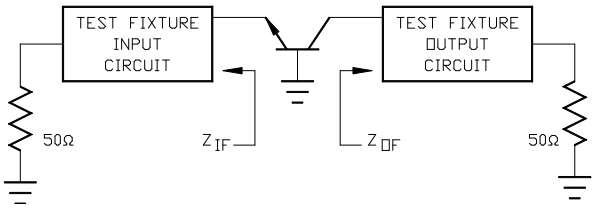
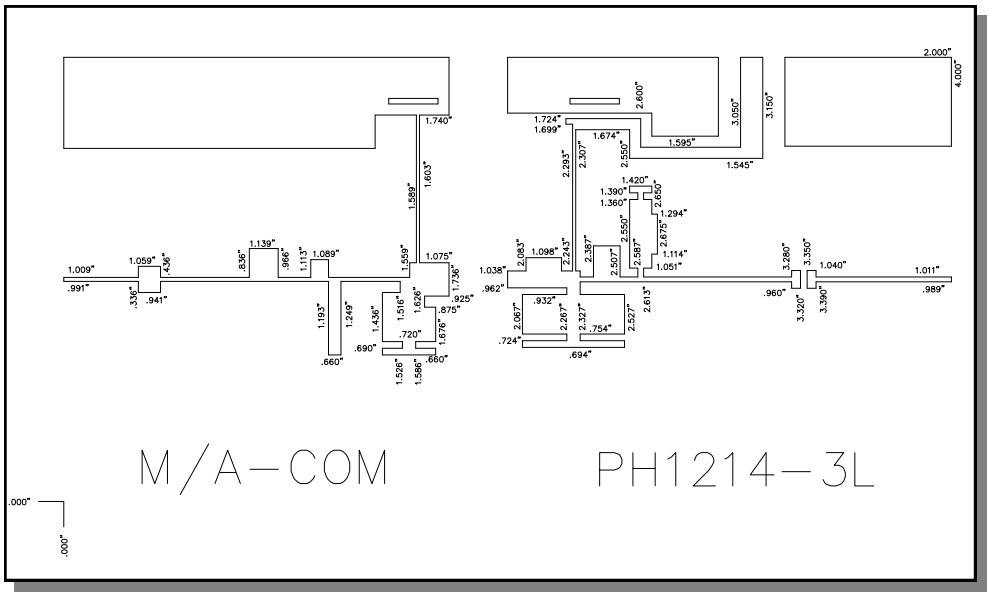
RF Test Fixture Impedance

F (GHz)	Z_{IF} (Ω)	Z_{OF} (Ω)
1.2	9.4 - j7.8	8.5 + j6.9
1.3	8.8 - j7.3	9.2 + j4.9
1.4	8.1 - j7.2	5.3 + j4.7



Test Fixture Circuit Dimensions



Test Fixture Assembly