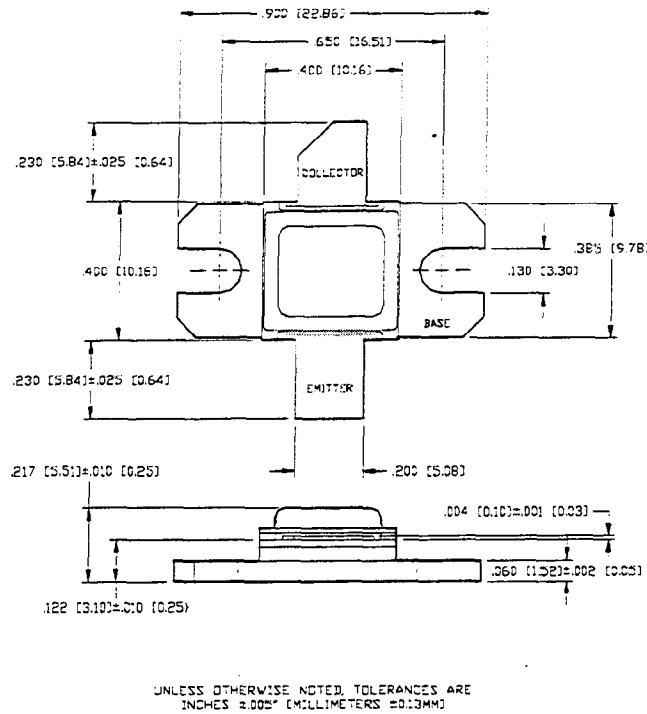
Radar Pulsed Power Transistor, 100W, 2ms Pulse, 20% Duty
1.2 - 1.4 GHz PH1214-100EL

V2.01

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

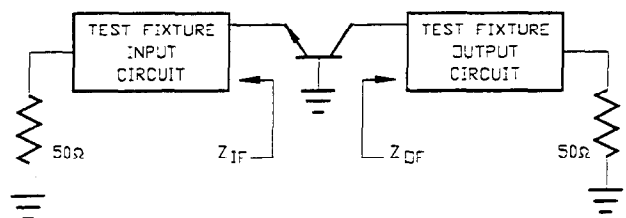
Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	75	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current (Peak)	I_C	14.1	A
Total Power Dissipation	P_{TOT}	214	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C

Electrical Characteristics at 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	75	-	V	I_C=50 mA
Collector-Emitter Leakage Current	I_{CES}	-	10	mA	V_{CE}=28 V
Thermal Resistance	$R_{TH(JC)}$	-	0.7	°C/W	V_{CC}=28 V, P_{IN}=25 W, F=1.20, 1.30, 1.40 GHz
Output Power	P_{OUT}	100	-	W	V_{CC}=28 V, P_{IN}=25 W, F=1.20, 1.30, 1.40 GHz
Power Gain	G_P	6.0	-	dB	V_{CC}=28 V, P_{IN}=25 W, F=1.20, 1.30, 1.40 GHz
Collector Efficiency	η_C	52	-	%	V_{CC}=28 V, P_{IN}=25 W, F=1.20, 1.30, 1.40 GHz
Input Return Loss	RL	8	-	dB	V_{CC}=28 V, P_{IN}=25 W, F=1.20, 1.30, 1.40 GHz
Overdrive Stability	OD-S	-	+1.0	dB	V_{CC}=28 V, P_{IN}=25 W, F=1.20, 1.30, 1.40 GHz
Load Mismatch Tolerance	VSWR-T	-	3:1	-	V_{CC}=28 V, P_{IN}=25 W, F=1.20, 1.30, 1.40 GHz
Load Mismatch Stability	VSWR-S	-	1.5:1	-	V_{CC}=28 V, P_{IN}=25 W, F=1.20, 1.30, 1.40 GHz

Broadband Test Fixture Impedances

F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
1.20	2.6 - j3.8	3.0 - j2.7
1.30	3.0 - j3.4	2.4 - j2.6
1.40	3.4 - j3.1	1.9 - j2.5



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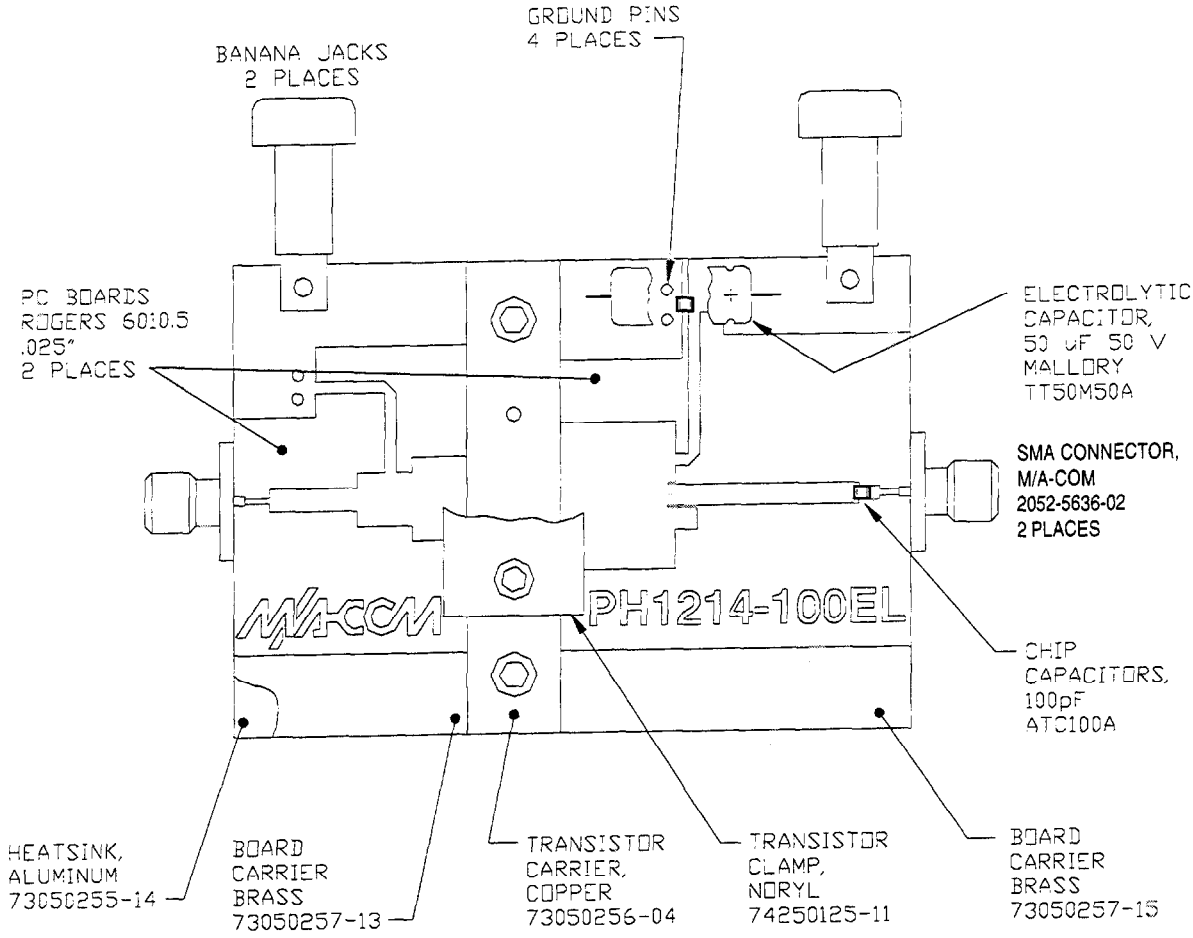
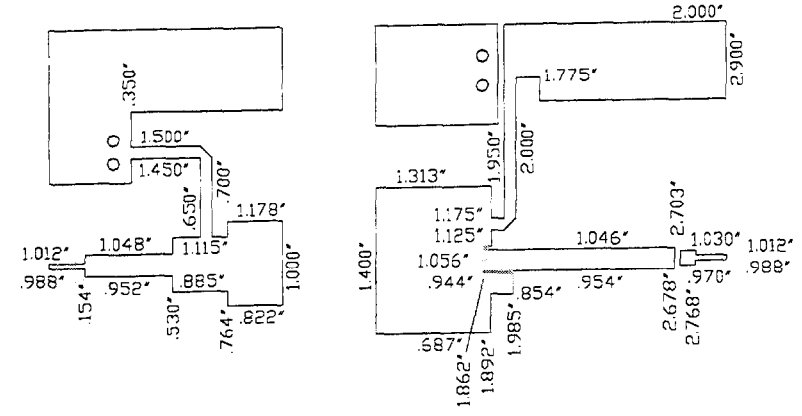
RF Test Fixture





CIRCUIT DIMENSIONS

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