

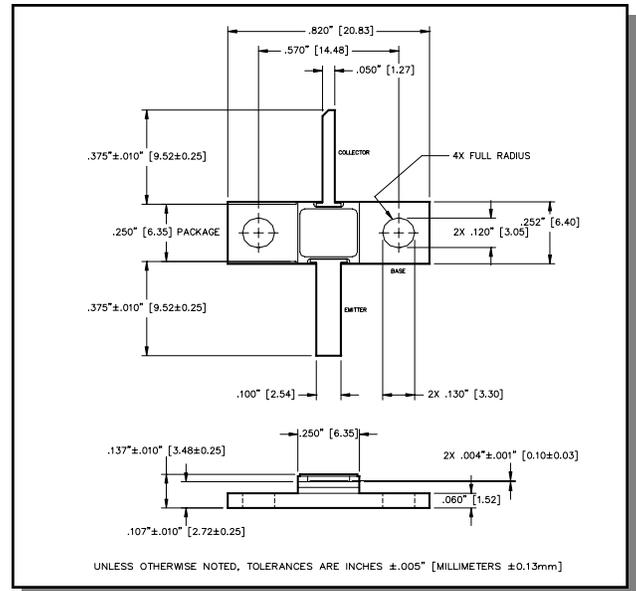
Radar Pulsed Power Transistor
30W, 1.2-1.4 GHz, 1ms Pulse, 10% Duty

M/A-COM Products
Released, 30 May 07

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



Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	56	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current (Peak)	I_C	3.0	A
Power Dissipation @ +25°C	P_{TOT}	115	W
Storage Temperature	T_{STG}	-65 to +200	°C
Junction Temperature	T_J	200	°C

Electrical Specifications: $T_C = 25 \pm 5^\circ\text{C}$ (Room Ambient)

Parameter	Test Conditions	Frequency	Symbol	Min	Max	Units
Collector-Emitter Breakdown Voltage	$I_C = 60\text{mA}$		BV_{CES}	56	-	V
Collector-Emitter Leakage Current	$V_{CE} = 28\text{V}$		I_{CES}	-	3.0	mA
Thermal Resistance	$V_{CC} = 28\text{V}$, $P_{out} = 30\text{W}$	F = 1.2, 1.3, 1.4 GHz	$R_{TH(JC)}$	-	1.5	°C/W
Output Power	$V_{CC} = 28\text{V}$, $P_{out} = 30\text{W}$	F = 1.2, 1.3, 1.4 GHz	P_{IN}	-	4.9	W
Power Gain	$V_{CC} = 28\text{V}$, $P_{out} = 30\text{W}$	F = 1.2, 1.3, 1.4 GHz	G_P	7.8	-	dB
Collector Efficiency	$V_{CC} = 28\text{V}$, $P_{out} = 30\text{W}$	F = 1.2, 1.3, 1.4 GHz	η_C	50	-	%
Input Return Loss	$V_{CC} = 28\text{V}$, $P_{out} = 30\text{W}$	F = 1.2, 1.3, 1.4 GHz	RL	-	-10	dB
Load Mismatch Tolerance	$V_{CC} = 28\text{V}$, $P_{out} = 30\text{W}$	F = 1.2, 1.3, 1.4 GHz	VSWR-T	-	3:1	-
Load Mismatch Stability	$V_{CC} = 28\text{V}$, $P_{out} = 30\text{W}$	F = 1.2, 1.3, 1.4 GHz	VSWR-S	-	1.5:1	-

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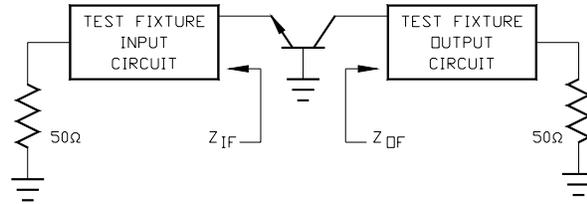
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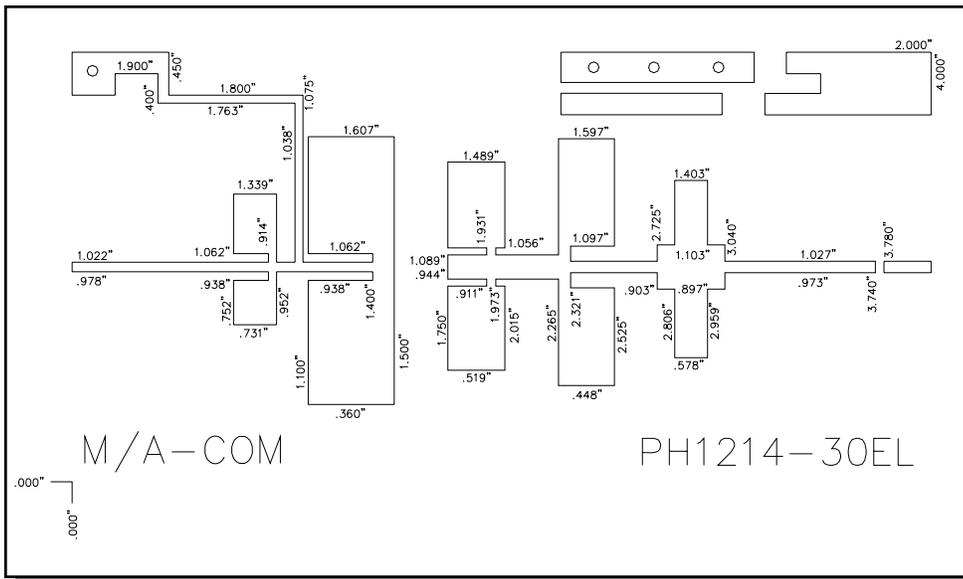
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RF Test Fixture Impedance

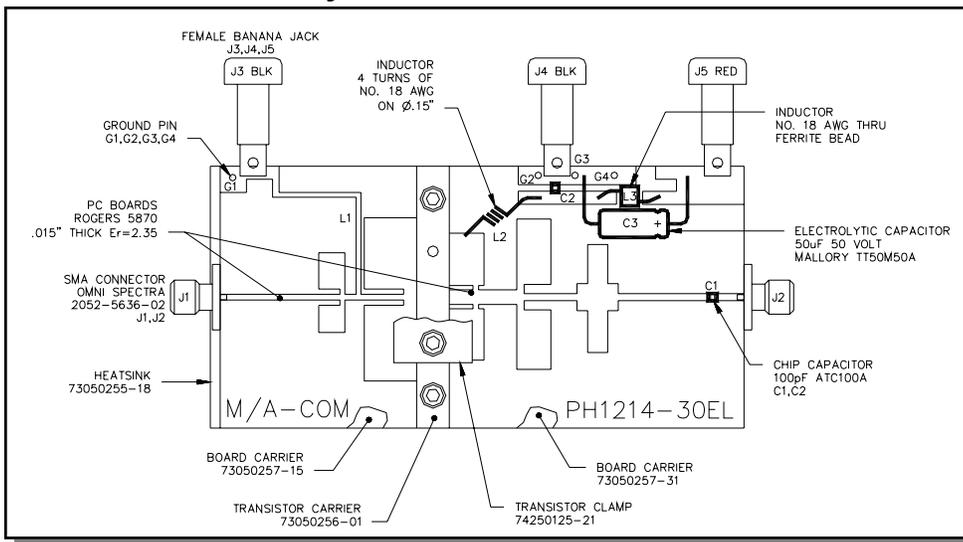
F (GHz)	Z _{IF} (Ω)	Z _{OF} (Ω)
1.2	2.5 - j3.5	10.5 + j2.0
1.3	2.7 - j2.7	6.3 + j2.0
1.4	3.5 - j3.5	5.3 + j1.5



Test Fixture Circuit Dimensions



Test Fixture Assembly



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