

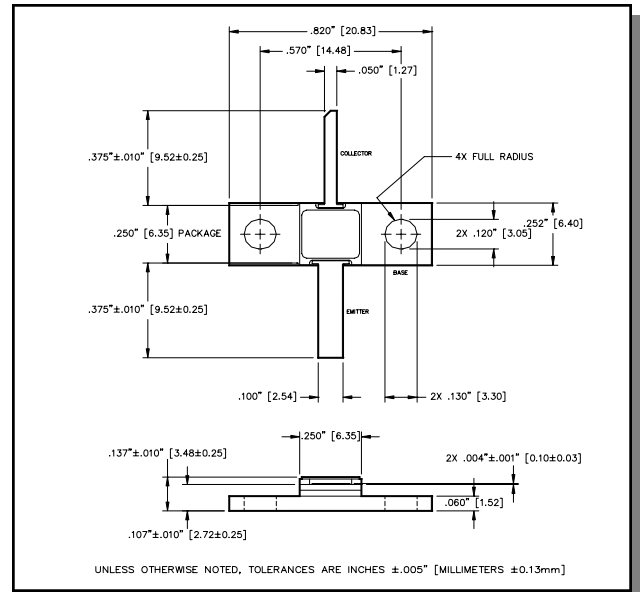
Radar Pulsed Power Transistor  
25W, 1.2-1.4 GHz, 1μs Pulse, 10% Duty

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	$V_{CES}$	70	V
Emitter-Base Voltage	$V_{EBO}$	3.0	V
Collector Current (Peak)	$I_C$	3.5	A
Power Dissipation @ +25°C	$P_{TOT}$	175	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	$I_C = 25\text{mA}$		$BV_{CES}$	60	-	V
Collector-Emitter Leakage Current	$V_{CE} = 40\text{V}$		$I_{CES}$	-	2.5	mA
Thermal Resistance	$V_{CC} = 28\text{V}$ , $P_{out} = 25\text{W}$	$F = 1.2, 1.3, 1.4\text{ GHz}$	$R_{TH(JC)}$	-	1.0	°C/W
Output Power	$V_{CC} = 28\text{V}$ , $P_{out} = 25\text{W}$	$F = 1.2, 1.3, 1.4\text{ GHz}$	$P_{IN}$	-	2.8	W
Power Gain	$V_{CC} = 28\text{V}$ , $P_{out} = 25\text{W}$	$F = 1.2, 1.3, 1.4\text{ GHz}$	$G_P$	9.5	-	dB
Collector Efficiency	$V_{CC} = 28\text{V}$ , $P_{out} = 25\text{W}$	$F = 1.2, 1.3, 1.4\text{ GHz}$	$\eta_C$	50	-	%
Input Return Loss	$V_{CC} = 28\text{V}$ , $P_{out} = 25\text{W}$	$F = 1.2, 1.3, 1.4\text{ GHz}$	RL	-	-6	dB
Load Mismatch Tolerance	$V_{CC} = 28\text{V}$ , $P_{out} = 25\text{W}$	$F = 1.2, 1.3, 1.4\text{ GHz}$	VSWR-T	-	3:1	-
Load Mismatch Stability	$V_{CC} = 28\text{V}$ , $P_{out} = 25\text{W}$	$F = 1.2, 1.3, 1.4\text{ GHz}$	VSWR-S	-	1.5:1	-

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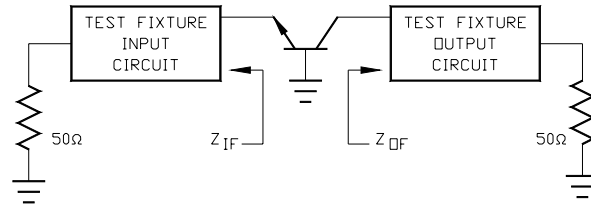
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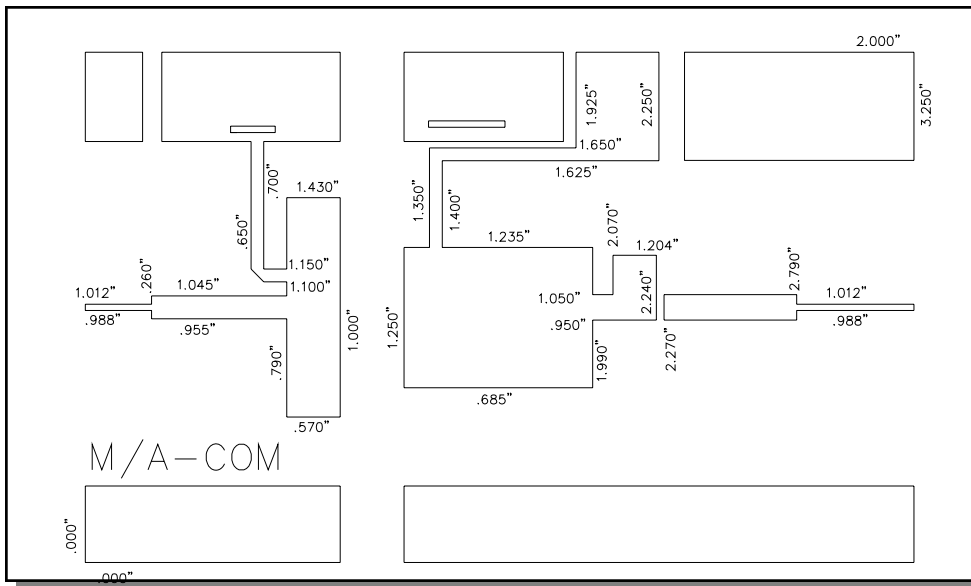
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## RF Test Fixture Impedance

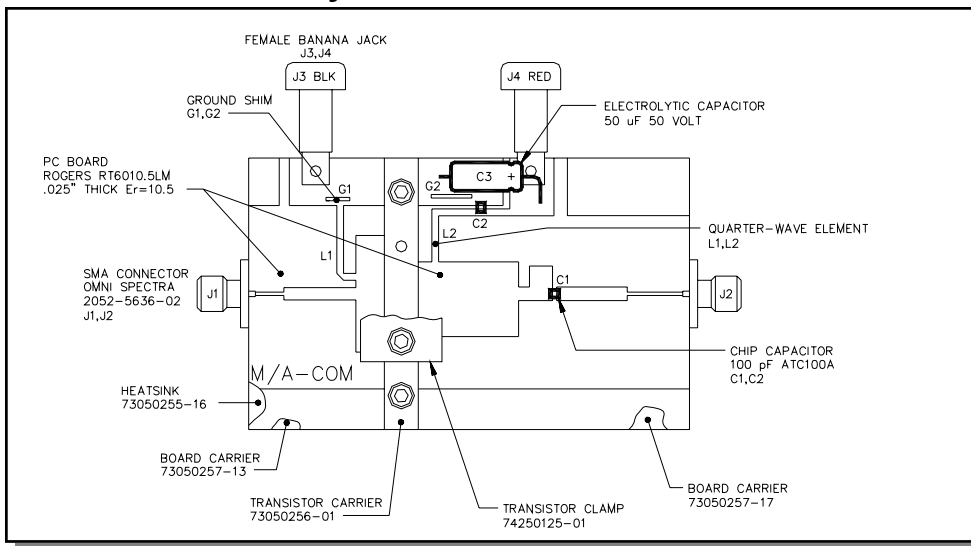
F (GHz)	Z <sub>IF</sub> (Ω)	Z <sub>OF</sub> (Ω)
1.2	2.1 - j4.5	3.7 + j0.9
1.3	2.1 - j3.9	3.6 + j0.4
1.4	2.2 - j3.4	3.0 + j0.2



## Test Fixture Circuit Dimensions



## Test Fixture Assembly



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