

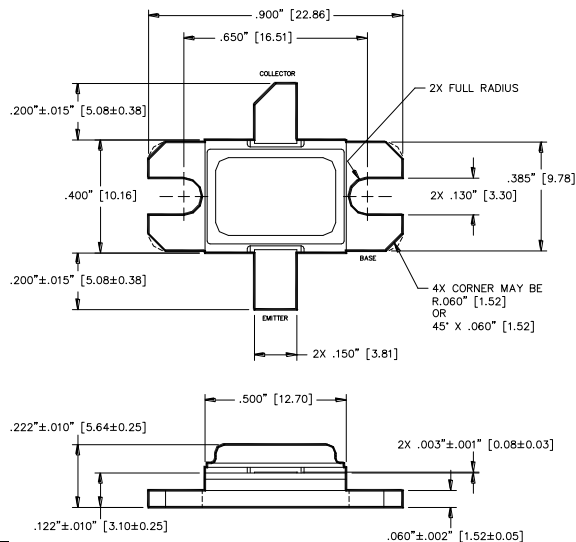
Radar Pulsed Power Transistor 110W, 1.2-1.4 GHz, 150µs Pulse, 10% Duty

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}	70	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current (Peak)	I_C	10.5	A
Power Dissipation @ +25°C	P_{TOT}	350	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)

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Parameter	Test Conditions	Frequency	Symbol	Min	Max	Units
Collector-Emitter Breakdown Voltage	$I_C = 100\text{mA}$		BV_{CES}	70	-	V
Collector-Emitter Leakage Current	$V_{CE} = 40\text{V}$		I_{CES}	-	5.5	mA
Thermal Resistance	$V_{CC} = 40\text{V}$, $P_{in} = 20\text{W}$	F = 1.2, 1.3, 1.4 GHz	$R_{TH(JC)}$	-	0.5	°C/W
Output Power	$V_{CC} = 40\text{V}$, $P_{in} = 20\text{W}$	F = 1.2, 1.3, 1.4 GHz	P_{OUT}	110	-	W
Power Gain	$V_{CC} = 40\text{V}$, $P_{in} = 20\text{W}$	F = 1.2, 1.3, 1.4 GHz	G_P	7.4	-	dB
Collector Efficiency	$V_{CC} = 40\text{V}$, $P_{in} = 20\text{W}$	F = 1.2, 1.3, 1.4 GHz	η_C	50	-	%
Input Return Loss	$V_{CC} = 40\text{V}$, $P_{in} = 20\text{W}$	F = 1.2, 1.3, 1.4 GHz	RL	-	-9	dB
Load Mismatch Tolerance	$V_{CC} = 40\text{V}$, $P_{in} = 20\text{W}$	F = 1.2, 1.3, 1.4 GHz	VSWR-T	-	3:1	-
Load Mismatch Stability	$V_{CC} = 40\text{V}$, $P_{in} = 20\text{W}$	F = 1.2, 1.3, 1.4 GHz	VSWR-S	-	1.5:1	-

- **MACOM** 通过为光学、无线和卫星网络提供突破性半导体技术，来满足社会对信息的无止境需求，从而实现全面连通且更加安全的世界。如今，**MACOM** 推动着各种基础设施的建设，让数百万人在生活中每时每刻都能方便地沟通、交易、旅行、获取信息和参与娱乐活动。我们的技术提高了移动互联网的速度和覆盖率，让光纤网络得以向企业、家庭和数据中心传输以往无法想象的巨大通信量。**MACOM** 技术支持下一代雷达，可用于空中交通管制和天气预报，从而保卫所有人的安全。**MACOM** 是世界领先通信基础设施的首选合作伙伴，借助我们的顶尖团队和丰富的模拟射频、微波、毫米波和光子半导体产品，可帮助这些公司解决网络容量、信号覆盖、能源效率和现场可靠性等领域内的最复杂挑战。**MACOM** 是半导体行业的支柱型企业，在 60 多年的蓬勃发展历程中，公司敢于采用大胆的技术手段，为客户提供真正的竞争优势并为投资者带来卓越的价值，致力于构筑更加美好的世界。

射频功率产品

- 光电子
- 光波组件
- 放大器
- 二极管
- 网络连接解决方案
- 交叉点和信号调理器
- 频率转换
- 控制产品
- 无源器件
- SDI 产品
- 频率生成
- HDcctv 设备
- 通信处理器

应用

- 无线网络和通信
- 光网络
- 射频能量
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- 有线宽带
- 广播视频
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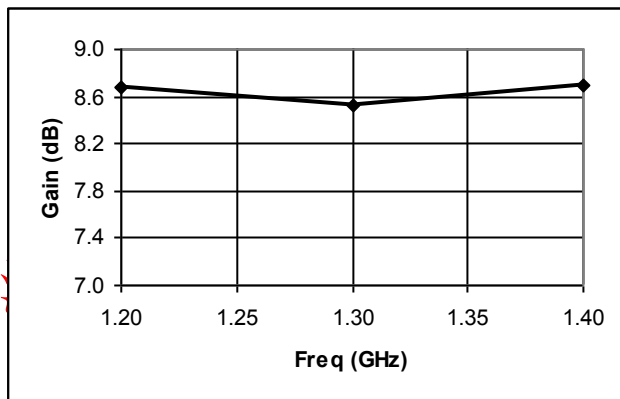
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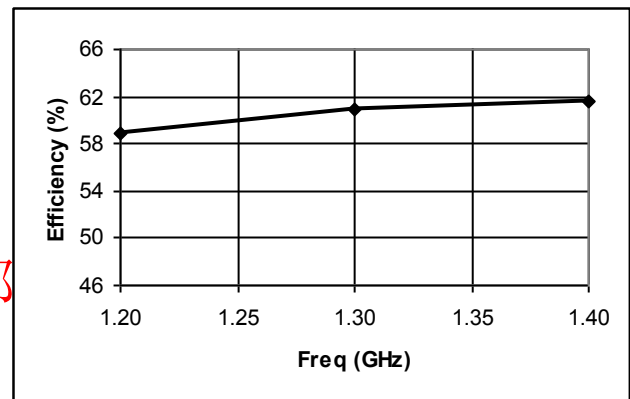
Typical RF Performance

Freq. (GHz)	Pin (W)	Pout (W)	Gain (dB)	Ic (A)	Eff (%)	RL (dB)	VSWR-S (1.5:1)	VSWR-T (3:1)
1.2	20	148	8.68	6.26	59.0	-10.0	S	P
1.3	20	143	8.53	5.86	60.8	-11.0	S	P
1.4	20	148	8.69	6.00	61.7	-25.6	S	P

Gain vs. Frequency

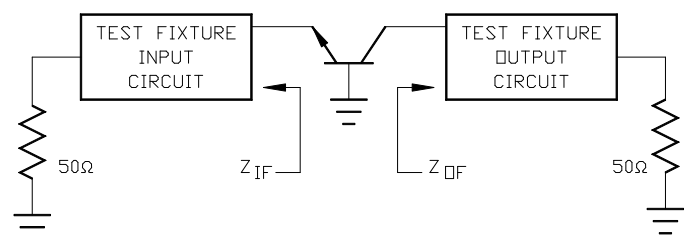


Collector Efficiency vs. Frequency



RF Test Fixture Impedance

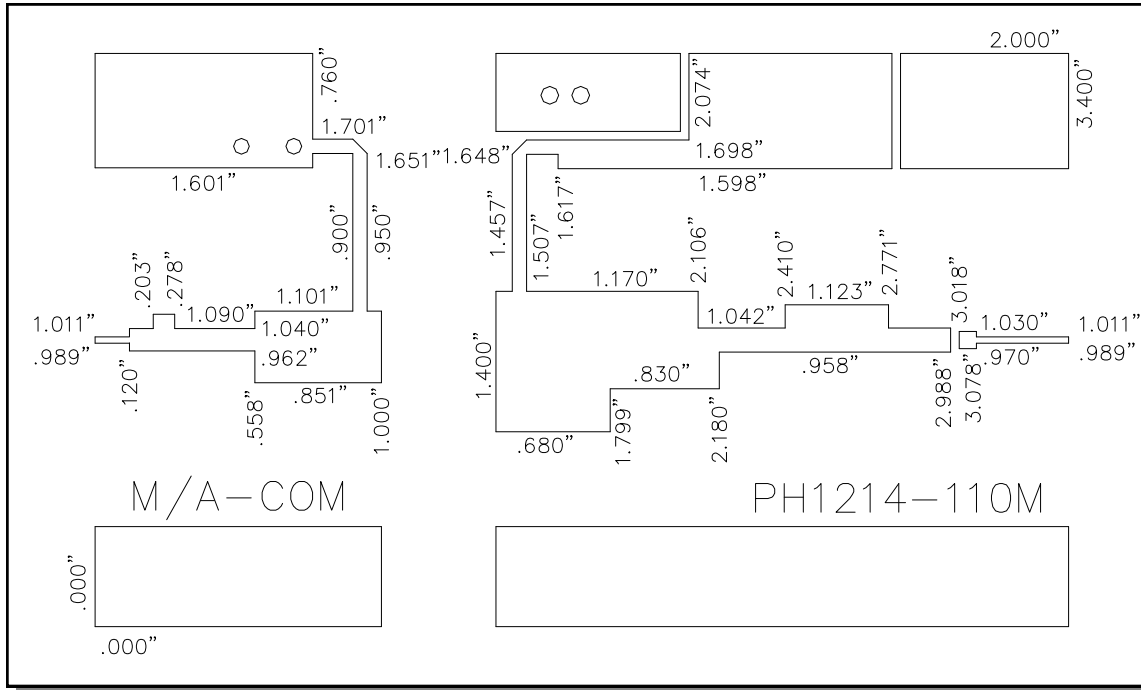
F (GHz)	Z _{IF} (Ω)	Z _{OF} (Ω)
1.2	4.7 - j4.4	4.4 - j3.3
1.3	4.5 - j3.3	3.0 - j2.8
1.4	4.5 - j2.3	2.3 - j1.8



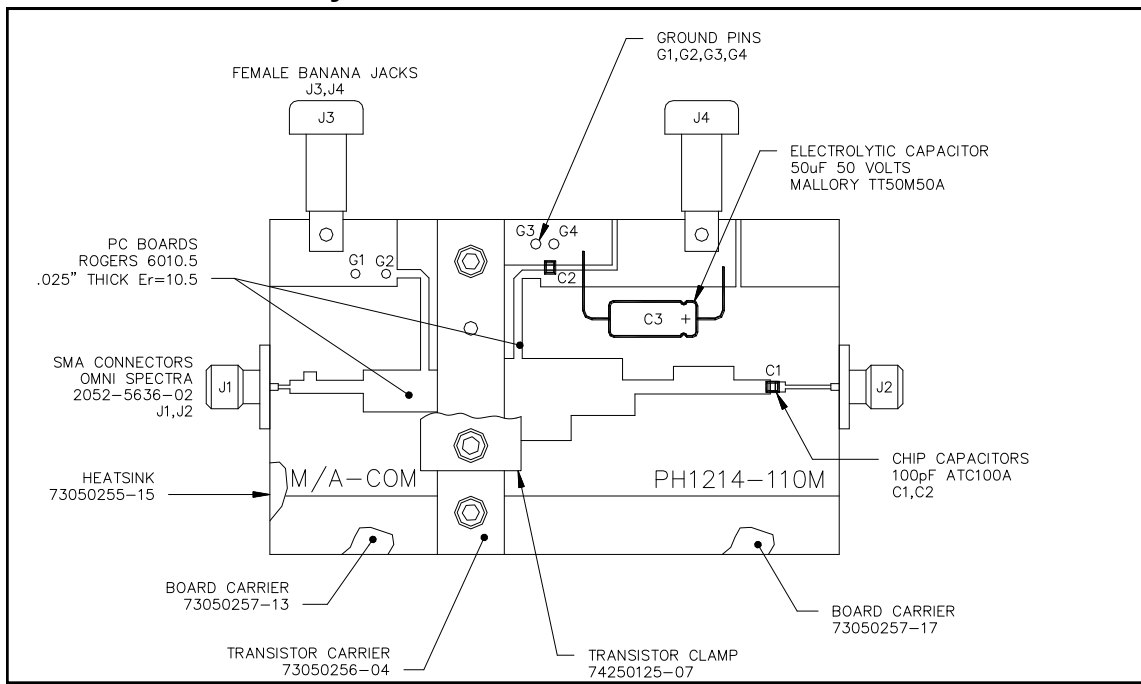
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Test Fixture Circuit Dimensions



Test Fixture Assembly



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