PH2226-110M

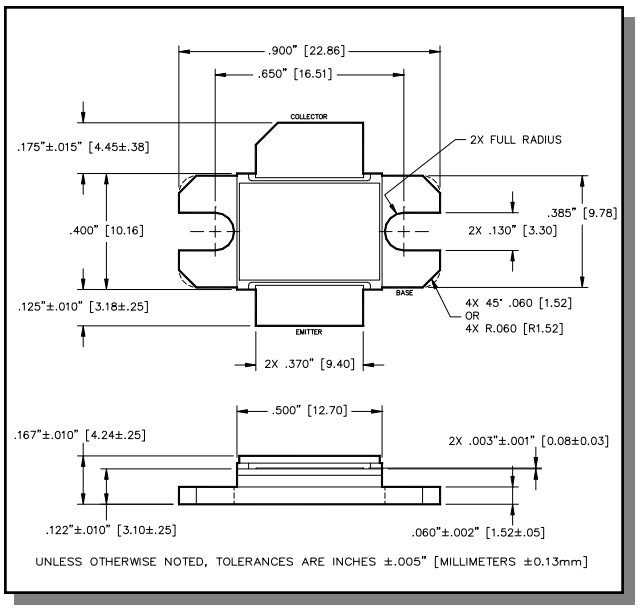
Radar Pulsed Power Transistor
110W, 2.2-2.6GHz, 100µs Pulse, 10% Duty

M/A-COM Products
Released, 22 Feb 08

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}	65	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current (Peak)	I_C	15	A
Power Dissipation @ +25°C	P_{TOT}	583	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 = 40mA		BV_{CES}	65	-	V
Collector-Emitter Leakage Current	V_{CE} = 36V		I_{CES}	-	3.0	mA
Thermal Resistance	Vcc = 36V, Pin = 20W	F = 2.25, 2.55 GHz	$R_{TH(JC)}$	-	0.3	°C/W
Output Power	Vcc = 36V, Pin = 20W	F = 2.25, 2.55 GHz	P_{OUT}	110	-	W
Power Gain	Vcc = 36V, Pin = 20W	F = 2.25, 2.55 GHz	G_P	7.4	-	dB
Collector Efficiency	Vcc = 36V, Pin = 20W	F = 2.25, 2.55 GHz	η_C	40	-	%
Pulse Droop	Vcc = 36V, Pin = 20W	F = 2.25, 2.55 GHz	Droop	-	1.0	dB
Input Return Loss	Vcc = 36V, Pin = 20W	F = 2.25, 2.55 GHz	RL	-	-9	dB
Load Mismatch Tolerance	Vcc = 36V, Pin = 20W	F = 2.25, 2.55 GHz	VSWR-T	-	3:1	-
Load Mismatch Stability	Vcc = 36V, Pin = 20W	F = 2.25, 2.55 GHz	VSWR-S	-	1.5:1	-

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.
PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

- **North America** Tel: 800.366.2266 / Fax: 978.366.2266
- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
- **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

Visit www.macomtech.com for additional data sheets and product information.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

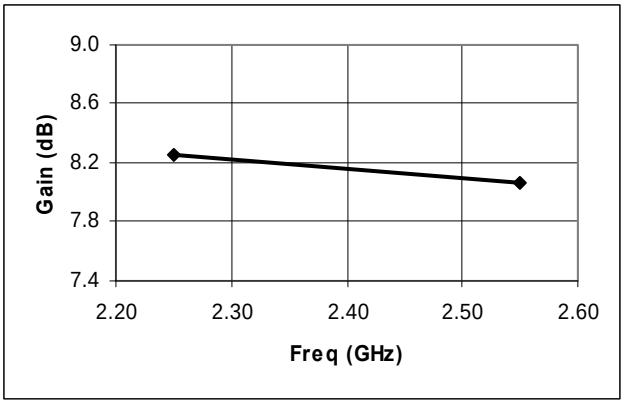
Radar Pulsed Power Transistor
110W, 2.2-2.6GHz, 100µs Pulse, 10% Duty

M/A-COM Products
Released, 22 Feb 08

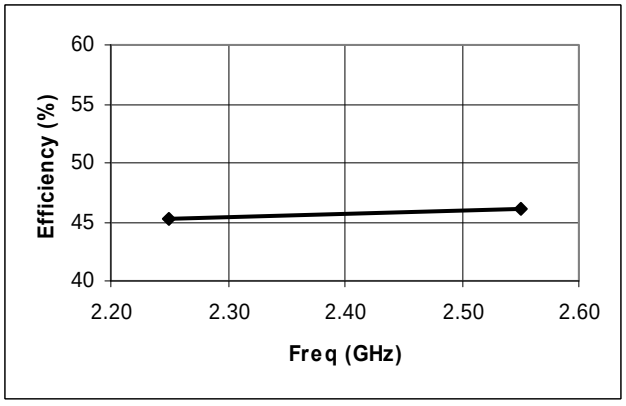
Typical RF Performance

Freq. (GHz)	Pin (W)	Pout (W)	Gain (dB)	Ic (A)	Eff (%)	RL (dB)	Droop (dB)	VSWR-S (1.5:1)	VSWR-T (3:1)
2.25	20.0	134	8.26	0.83	45.3	-14.0	0.33	S	P
2.55	20.0	128	8.07	0.77	46.1	-18.0	0.18	S	P

Gain vs. Frequency

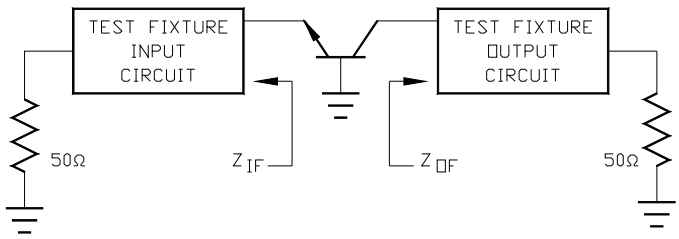


Collector Efficiency vs. Frequency



RF Test Fixture Impedance

F (GHz)	Z_{IF} (Ω)	Z_{OF} (Ω)
2.25	2.8 - j3.4	4.1 - j2.9
2.40	2.9 - j3.0	3.8 - j2.9
2.55	3.1 - j2.6	3.3 - j2.7



ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.
PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

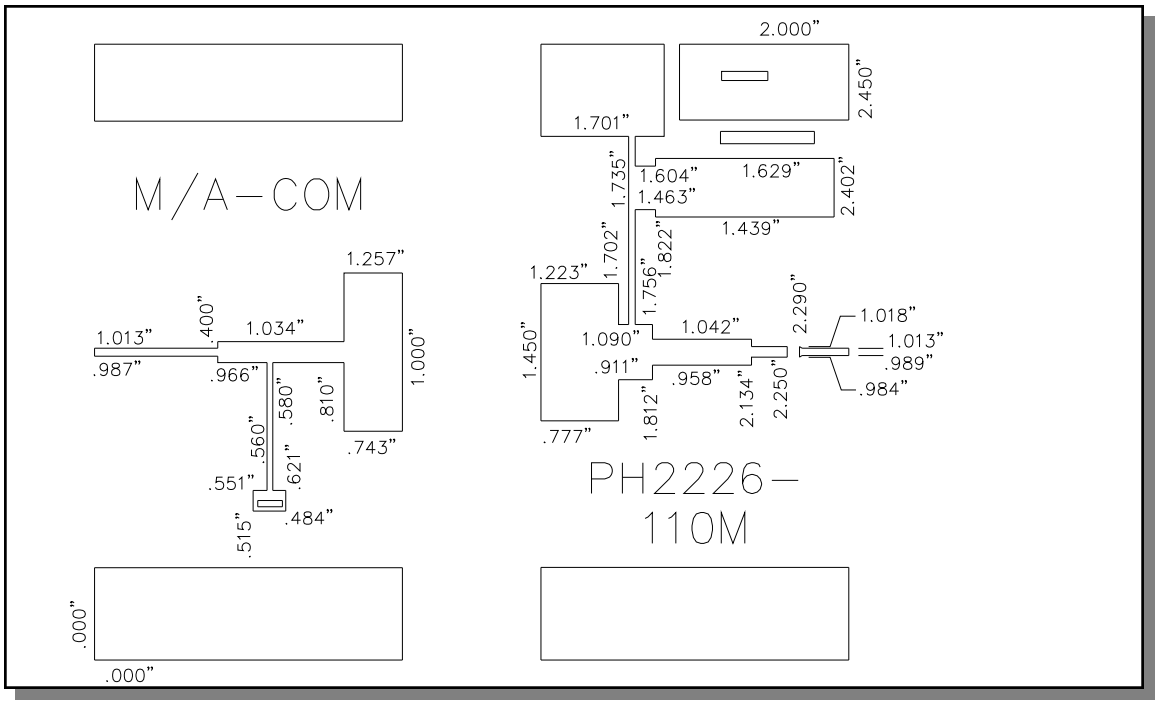
- **North America** Tel: 800.366.2266 / Fax: 978.366.2266
- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
- **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298
Visit www.macomtech.com for additional data sheets and product information.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

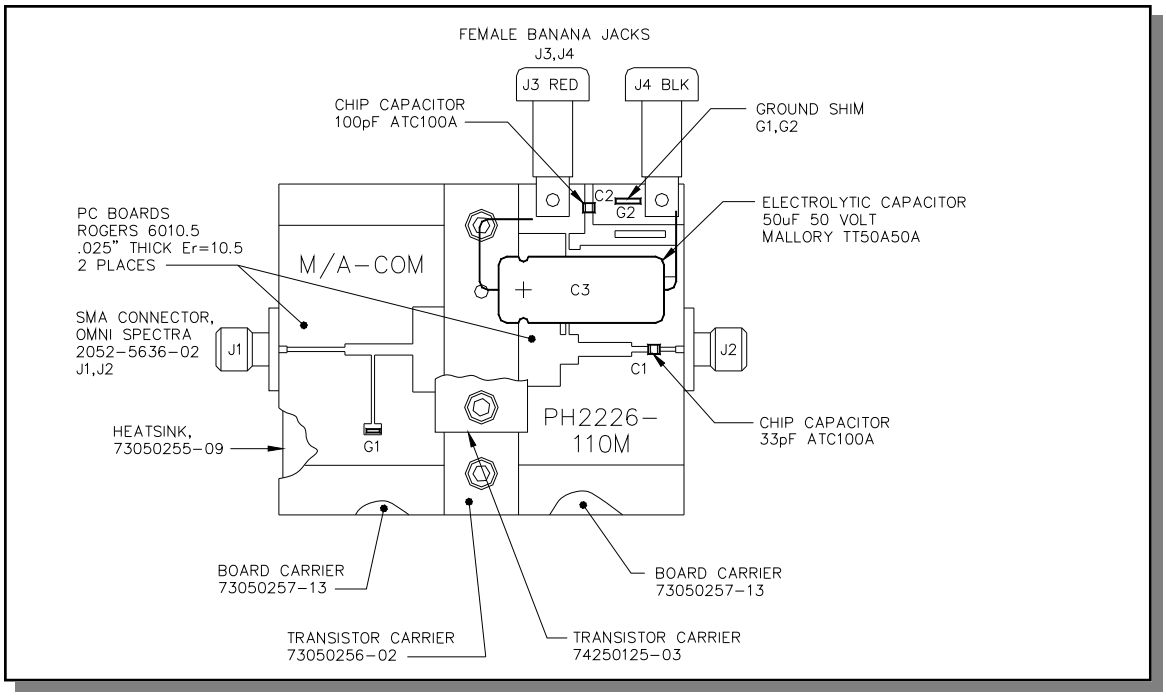
Radar Pulsed Power Transistor
110W, 2.2-2.6GHz, 100µs Pulse, 10% Duty

M/A-COM Products
Released, 22 Feb 08

Test Fixture Circuit Dimensions



Test Fixture Assembly



ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.
PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

- **North America** Tel: 800.366.2266 / Fax: 978.366.2266
- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
- **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298
Visit www.macomtech.com for additional data sheets and product information.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.