

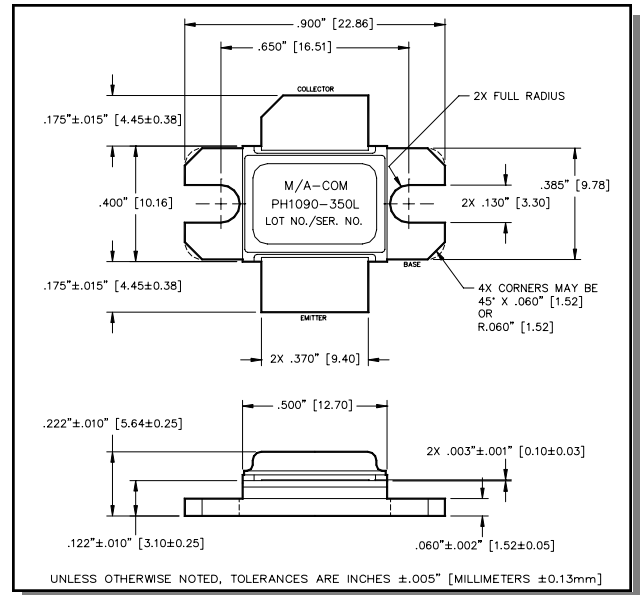
Avionics Pulsed Power Transistor
350W, 1090 MHz, 250µs Pulse, 10% Duty

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}	80	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current (Peak)	I_C	17	A
Power Dissipation @ +25°C	P_{TOT}	875	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	$I_C = 250\text{mA}$		BV_{CES}	80	-	V
Collector-Emitter Leakage Current	$V_{CE} = 45\text{V}$		I_{CES}	-	25	mA
Thermal Resistance	$V_{CC} = 45\text{V}$, $P_{out} = 350\text{W}$	$F = 1090\text{ MHz}$	$R_{TH(JC)}$	-	0.2	°C/W
Input Power	$V_{CC} = 45\text{V}$, $P_{out} = 350\text{W}$	$F = 1090\text{ MHz}$	P_{IN}	35	55	W
Power Gain	$V_{CC} = 45\text{V}$, $P_{out} = 350\text{W}$	$F = 1090\text{ MHz}$	G_P	8.0	10.0	dB
Collector Efficiency	$V_{CC} = 45\text{V}$, $P_{out} = 350\text{W}$	$F = 1090\text{ MHz}$	η_C	55	-	%
Input Return Loss	$V_{CC} = 45\text{V}$, $P_{out} = 350\text{W}$	$F = 1090\text{ MHz}$	RL	-	-9	dB
Load Mismatch Tolerance	$V_{CC} = 45\text{V}$, $P_{out} = 350\text{W}$	$F = 1090\text{ MHz}$	VSWR-T	-	2:1	-
Load Mismatch Stability	$V_{CC} = 45\text{V}$, $P_{out} = 350\text{W}$	$F = 1090\text{ MHz}$	VSWR-S	-	1.5:1	-

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.

Avionics Pulsed Power Transistor
350W, 1090 MHz, 250µs Pulse, 10% Duty

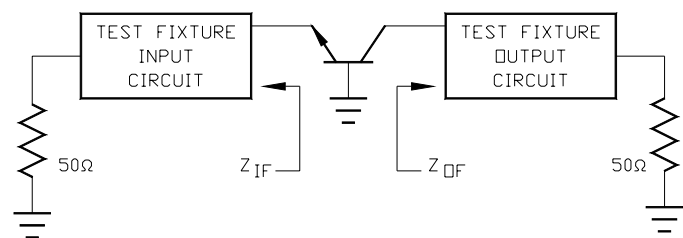
M/A-COM Products
Released, 30 May 07

Typical RF Performance

Freq. (MHz)	Pin (W)	Pout (W)	Gain (dB)	Ic (A)	Eff (%)	RL (dB)	VSWR-S (1.5:1)	VSWR-T (2:1)
1090	51.6	350	8.32	12.8	61.0	-15.0	S	P

RF Test Fixture Impedance

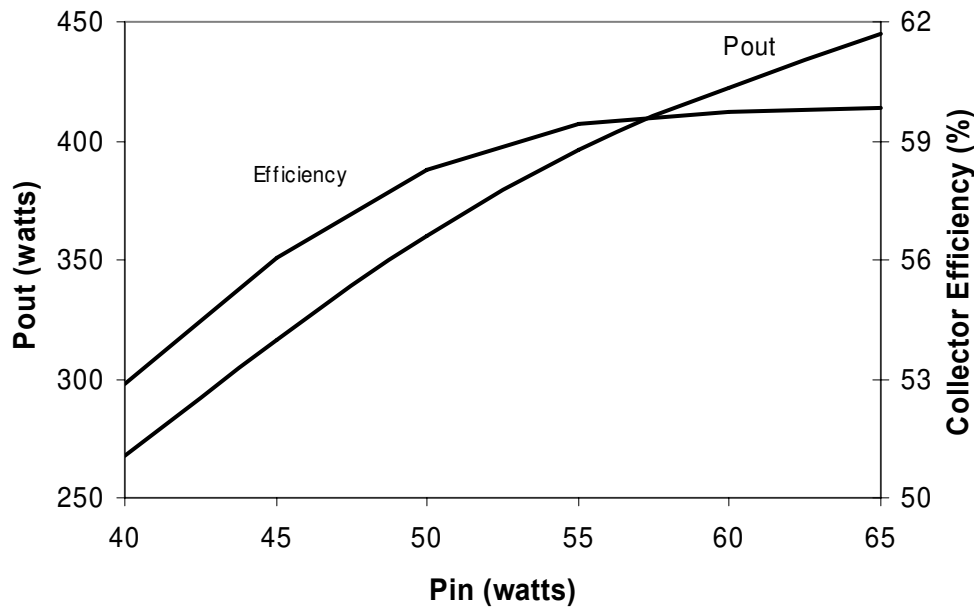
F (MHz)	Z _{IF} (Ω)	Z _{OF} (Ω)
1090	2.5 - j1.5	1.0 - j0.9



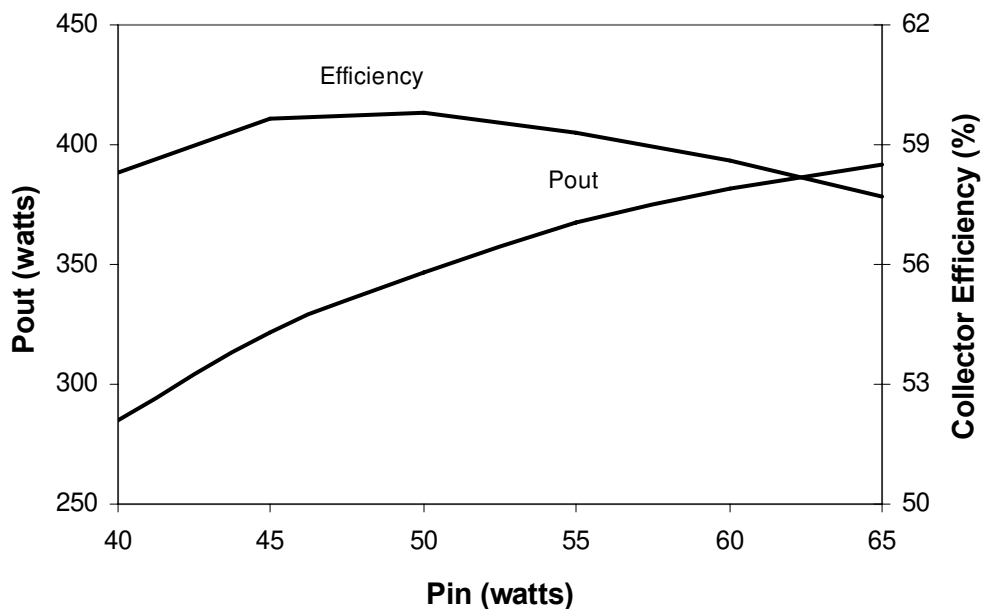
Avionics Pulsed Power Transistor
 350W, 1090 MHz, 250µs Pulse, 10% Duty

M/A-COM Products
 Released, 30 May 07

RF Power Transfer Curve 1030 MHz, Output Power & Efficiency vs. Input Power



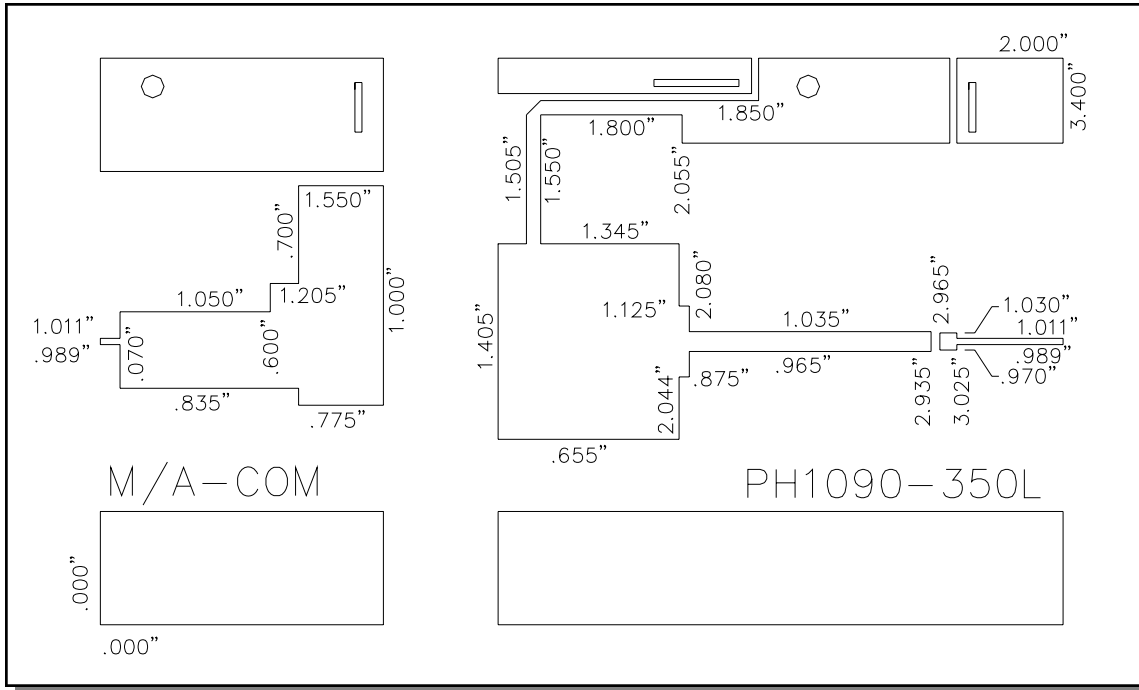
RF Power Transfer Curve 1090 MHz, Output Power & Efficiency vs. Input Power



Avionics Pulsed Power Transistor
350W, 1090 MHz, 250µs Pulse, 10% Duty

M/A-COM Products
Released, 30 May 07

Test Fixture Circuit Dimensions



Test Fixture Assembly

