

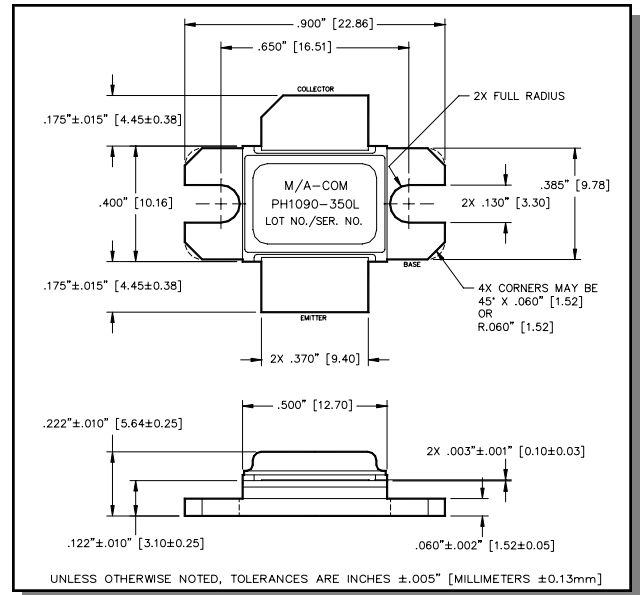
Avionics Pulsed Power Transistor  
350W, 1090 MHz, 250µs Pulse, 10% Duty

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	$V_{CC} = 45\text{V}$ , $P_{out} = 350\text{W}$	$F = 1090\text{ MHz}$	$\eta_C$	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](http://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

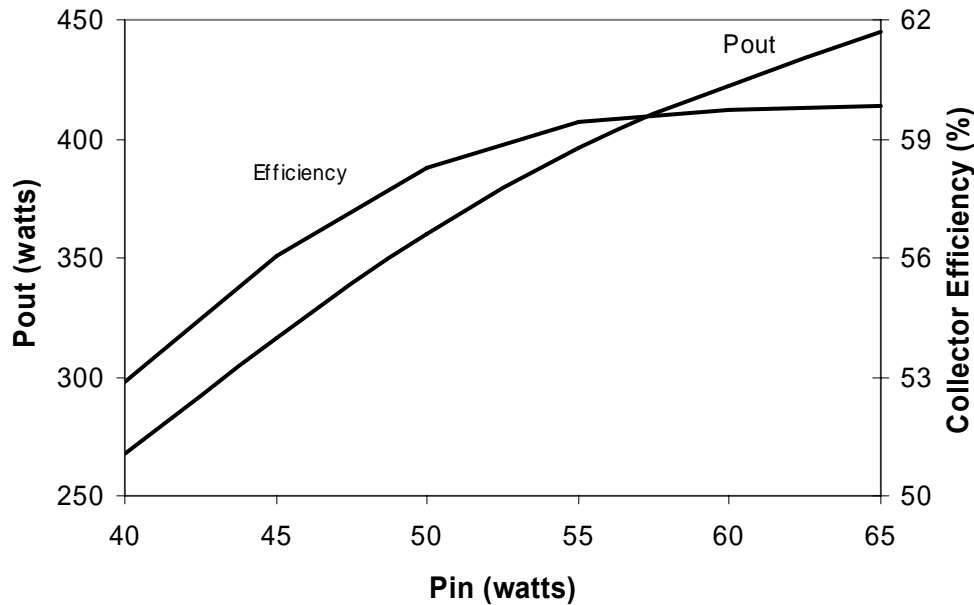
F (MHz)	Z <sub>IF</sub> (Ω)	Z <sub>OF</sub> (Ω)
1090	2.5 - j1.5	1.0 - j0.9



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

