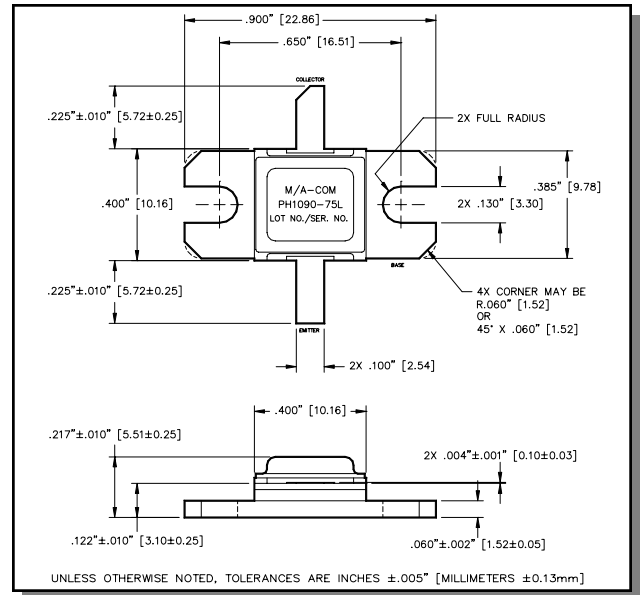


## Features

- 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)	$I_C$	6	A
Power Dissipation @ +25°C	$P_{TOT}$	117	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	$I_C = 35\text{mA}$		$BV_{CES}$	70	-	V
Collector-Emitter Leakage Current	$V_{CE} = 40\text{V}$		$I_{CES}$	-	3.5	mA
Thermal Resistance	$V_{CC} = 45\text{V}$ , $P_{out} = 75\text{W}$	$F = 1030, 1090\text{ MHz}$	$R_{TH(JC)}$	-	1.5	°C/W
Input Power	$V_{CC} = 45\text{V}$ , $P_{out} = 75\text{W}$	$F = 1030, 1090\text{ MHz}$	$P_{in}$	-	9.4	W
Power Gain	$V_{CC} = 45\text{V}$ , $P_{out} = 75\text{W}$	$F = 1030, 1090\text{ MHz}$	$G_P$	9.0	-	dB
Collector Efficiency	$V_{CC} = 45\text{V}$ , $P_{out} = 75\text{W}$	$F = 1030, 1090\text{ MHz}$	$\eta_C$	45	-	%
Input Return Loss	$V_{CC} = 45\text{V}$ , $P_{out} = 75\text{W}$	$F = 1030, 1090\text{ MHz}$	RL	-	-8	dB
Load Mismatch Tolerance	$V_{CC} = 45\text{V}$ , $P_{out} = 75\text{W}$	$F = 1030, 1090\text{ MHz}$	VSWR-T	-	3:1	-
Load Mismatch Stability	$V_{CC} = 45\text{V}$ , $P_{out} = 75\text{W}$	$F = 1030, 1090\text{ MHz}$	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.

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Avionics Pulsed Power Transistor  
75W, 1030-1090 MHz, 250µs Pulse, 10% Duty

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## Typical RF Performance

Freq. (MHz)	Pin (W)	Pout (W)	Gain (dB)	Ic (A)	Eff (%)	RL (dB)	VSWR-S (1.5:1)	VSWR-T (3:1)
1030	6.39	75	10.70	2.84	58.7	-21.2	S	P
1090	6.22	75	10.81	2.79	59.7	-13.7	S	P

## RF Test Fixture Impedance

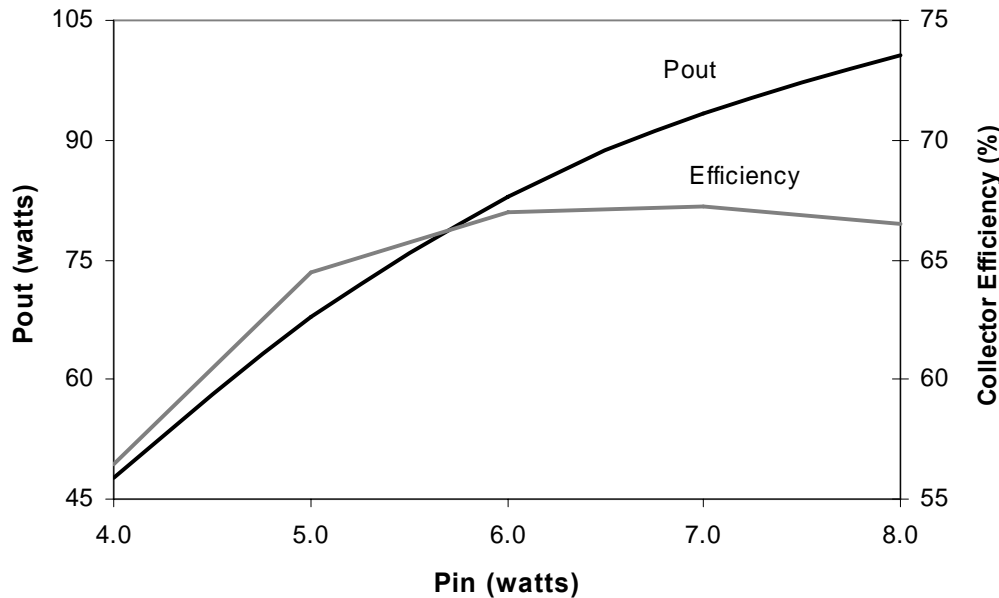
F (MHz)	Z <sub>IF</sub> (Ω)	Z <sub>OF</sub> (Ω)
1030	1.8 - j5.9	8.9 + j0.3
1090	1.4 - j5.3	9.3 - j0.5



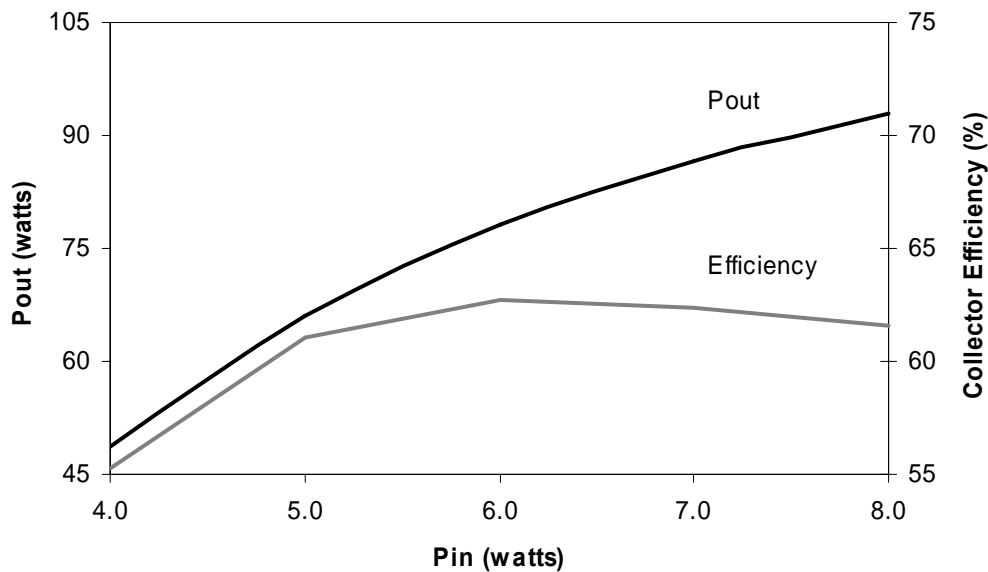
Avionics Pulsed Power Transistor  
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## RF Power Transfer Curve 1030 MHz, Output Power & Efficiency vs. Input Power



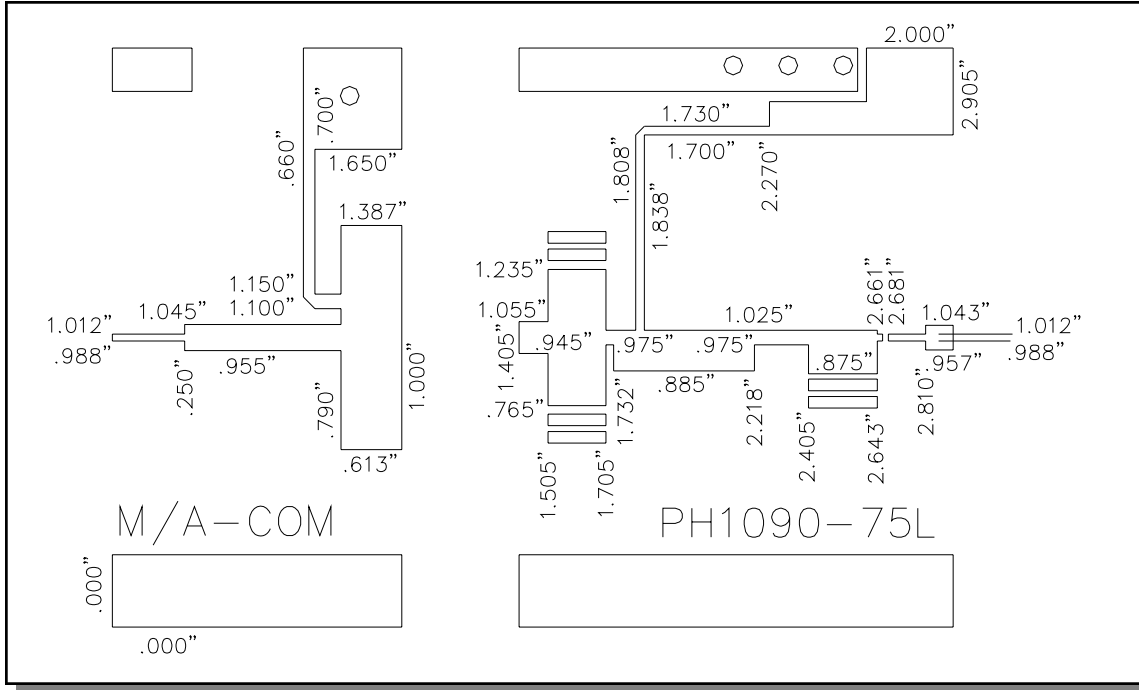
## RF Power Transfer Curve 1090 MHz, Output Power & Efficiency vs. Input Power



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## Test Fixture Circuit Dimensions



## Test Fixture Assembly

