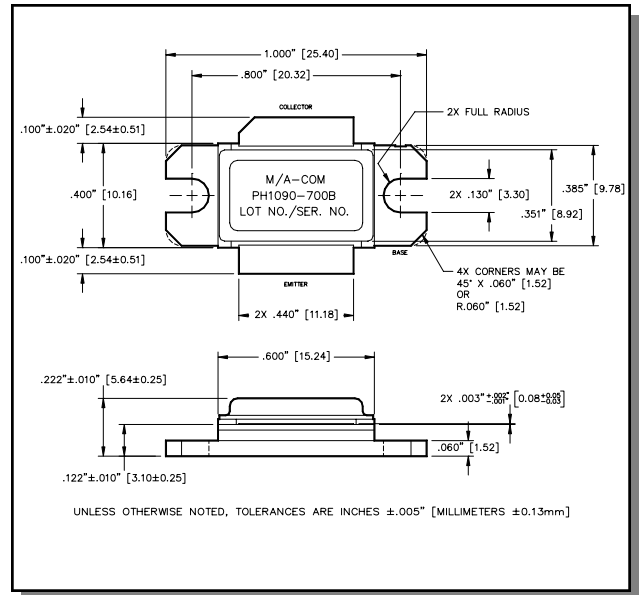


## Features

- 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)	$I_C$	70	A
Power Dissipation @ +25°C	$P_{TOT}$	2.9	kW
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	$V_{CE} = 50\text{V}$		$I_{CES}$	-	25	mA
Thermal Resistance	$V_{CC} = 50\text{V}$ , $P_{out} = 700\text{W}$	$F = 1030, 1090\text{ MHz}$	$R_{TH(JC)}$	-	0.06	°C/W
Input Power	$V_{CC} = 50\text{V}$ , $P_{out} = 700\text{W}$	$F = 1030, 1090\text{ MHz}$	$P_{IN}$	-	125	W
Power Gain	$V_{CC} = 50\text{V}$ , $P_{out} = 700\text{W}$	$F = 1030, 1090\text{ MHz}$	$G_P$	7.5	-	dB
Collector Efficiency	$V_{CC} = 50\text{V}$ , $P_{out} = 700\text{W}$	$F = 1030, 1090\text{ MHz}$	$\eta_C$	50	-	%
Input Return Loss	$V_{CC} = 50\text{V}$ , $P_{out} = 700\text{W}$	$F = 1030, 1090\text{ MHz}$	RL	-	-10	dB
Load Mismatch Tolerance	$V_{CC} = 50\text{V}$ , $P_{out} = 700\text{W}$	$F = 1030, 1090\text{ MHz}$	VSWR-T	-	5:1	-
Load Mismatch Stability	$V_{CC} = 50\text{V}$ , $P_{out} = 700\text{W}$	$F = 1030, 1090\text{ MHz}$	VSWR-S	-	1.5:1	-

## Typical RF Performance

Freq. (MHz)	Pin (W)	Pout (W)	Gain (dB)	Ic (A)	Eff (%)	RL (dB)	VSWR-S (1.5:1)	VSWR-T (5:1)
1030	96	700	8.66	25.4	55.3	-17.5	S	P
1090	101	700	8.42	25.7	54.5	-16.7	S	P

## RF Test Fixture Impedance

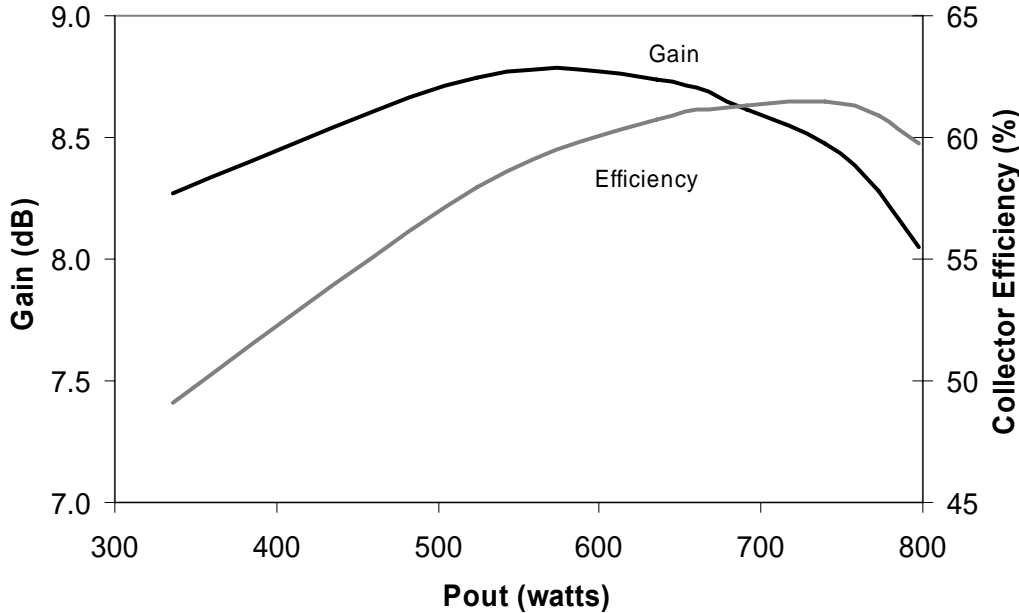
F (MHz)	Z <sub>IF</sub> (Ω)	Z <sub>OF</sub> (Ω)
1030	1.1 - j1.4	1.2 - j0.8
1060	1.1 - j1.2	1.0 - j0.7
1090	1.0 - j1.0	0.8 - j0.7



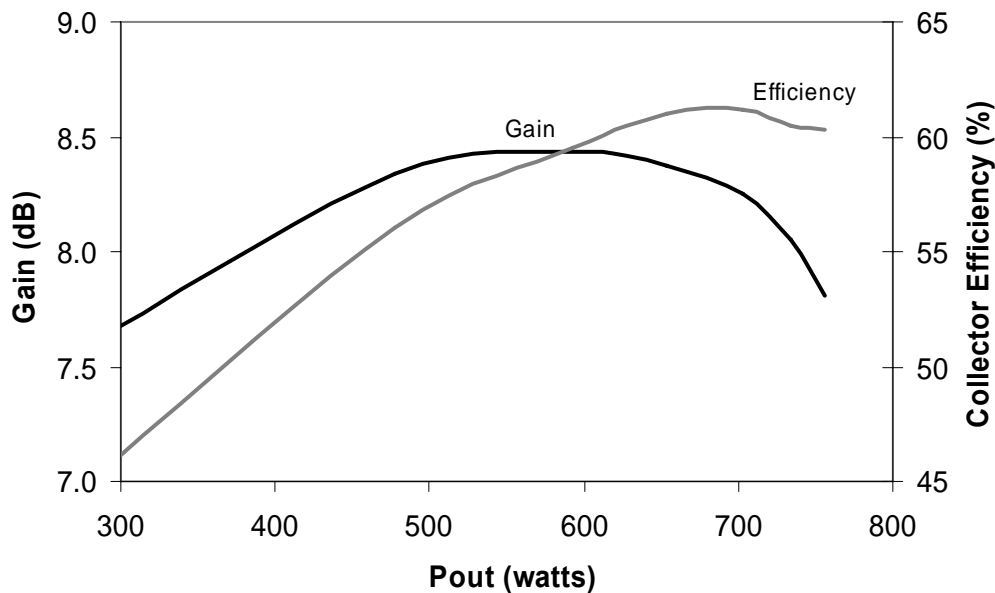
**Avionics Pulsed Power Transistor**  
**700W, 1030-1090 MHz, 32µs Pulse, 2% Duty**

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**Released, 30 May 07**

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



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



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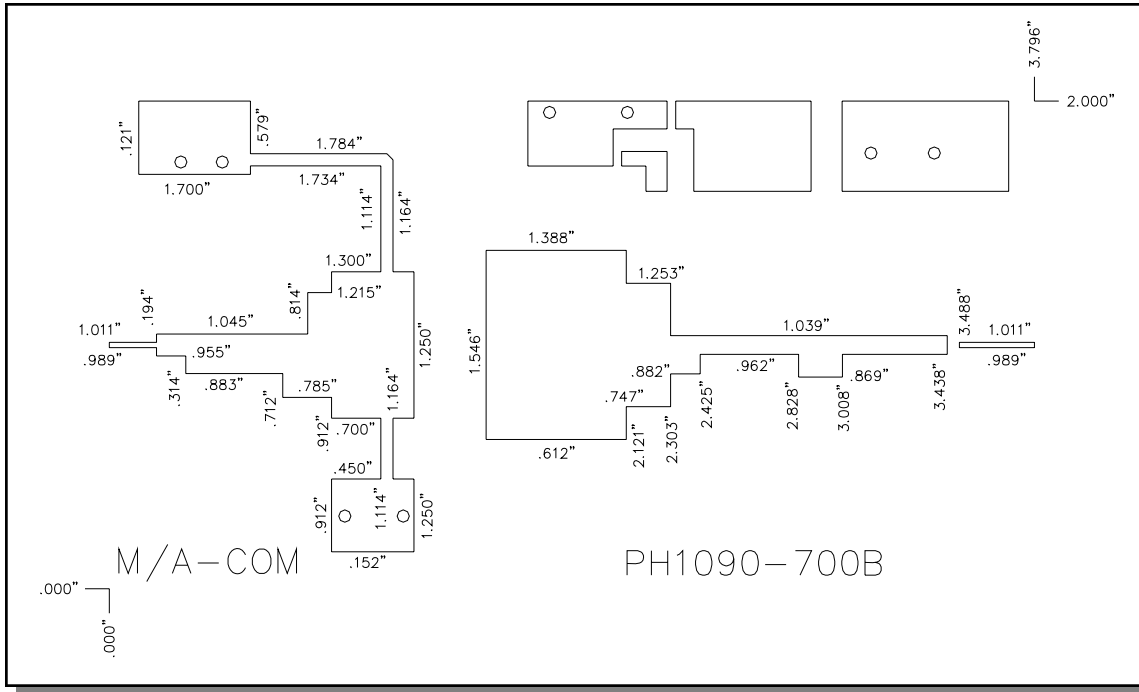
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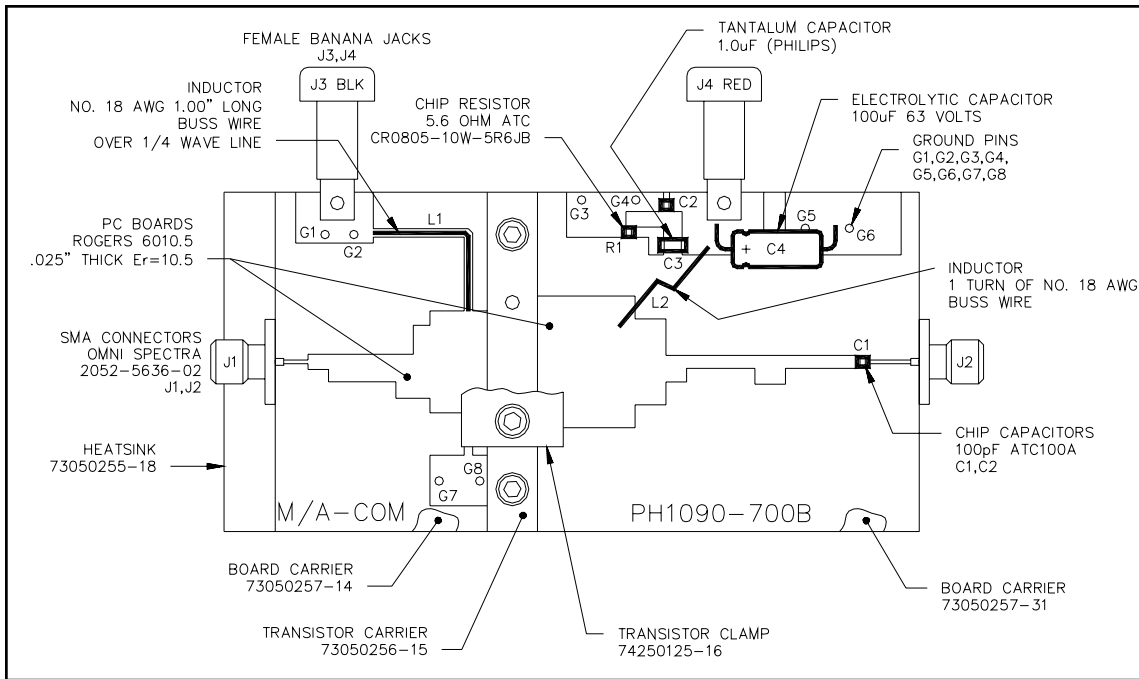
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## Test Fixture Circuit Dimensions



## Test Fixture Assembly



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