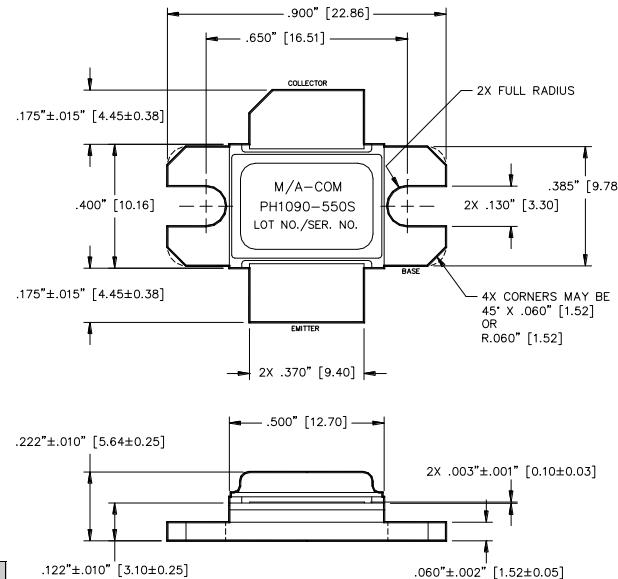


**Avionics Pulsed Power Transistor**  
**550 W, 1090 MHz, 10  $\mu$ s Pulse, 1% Duty**

Rev. V1

**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)	$I_C$	28	A
Power Dissipation @ +25°C	$P_{TOT}$	3.5	kW
Storage Temperature	$T_{STG}$	-65 to +200	°C
Junction Temperature	$T_J$	200	°C

UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES  $\pm .005"$  [MILLIMETERS  $\pm .13$ mm]**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	$V_{CC} = 50\text{V}$ , $P_{out} = 550\text{W}$	$F = 1090\text{ MHz}$	$R_{TH(JC)}$	-	0.05	°C/W
Input Power	$V_{CC} = 50\text{V}$ , $P_{out} = 550\text{W}$	$F = 1090\text{ MHz}$	$P_{IN}$	-	100	W
Power Gain	$V_{CC} = 50\text{V}$ , $P_{out} = 550\text{W}$	$F = 1090\text{ MHz}$	$G_P$	7.4	-	dB
Collector Efficiency	$V_{CC} = 50\text{V}$ , $P_{out} = 550\text{W}$	$F = 1090\text{ MHz}$	$\eta_C$	50	-	%
Input Return Loss	$V_{CC} = 50\text{V}$ , $P_{out} = 550\text{W}$	$F = 1090\text{ MHz}$	$RL$	-	-9	dB
Load Mismatch Tolerance	$V_{CC} = 50\text{V}$ , $P_{out} = 550\text{W}$	$F = 1090\text{ MHz}$	$VSWR-T$	-	10:1	-
Load Mismatch Stability	$V_{CC} = 50\text{V}$ , $P_{out} = 550\text{W}$	$F = 1090\text{ MHz}$	$VSWR-S$	-	1.5:1	-

## Avionics Pulsed Power Transistor 550 W, 1090 MHz, 10 $\mu$ s Pulse, 1% Duty

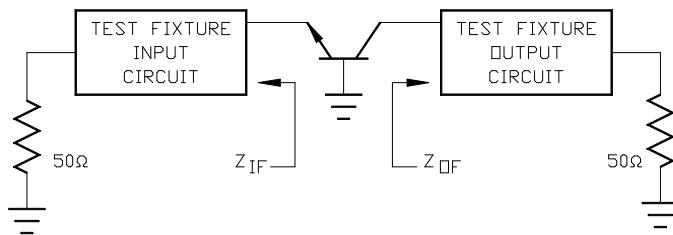
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### Typical RF Performance

Freq. ( MHz)	Pin (W)	Pout (W)	Gain (dB)	I <sub>c</sub> (A)	Eff (%)	RL (dB)	VSWR-S (1.5:1)	VSWR-T (10:1)
1090	86	550	8.06	19.6	56.1	-27.7	S	P

### RF Test Fixture Impedance

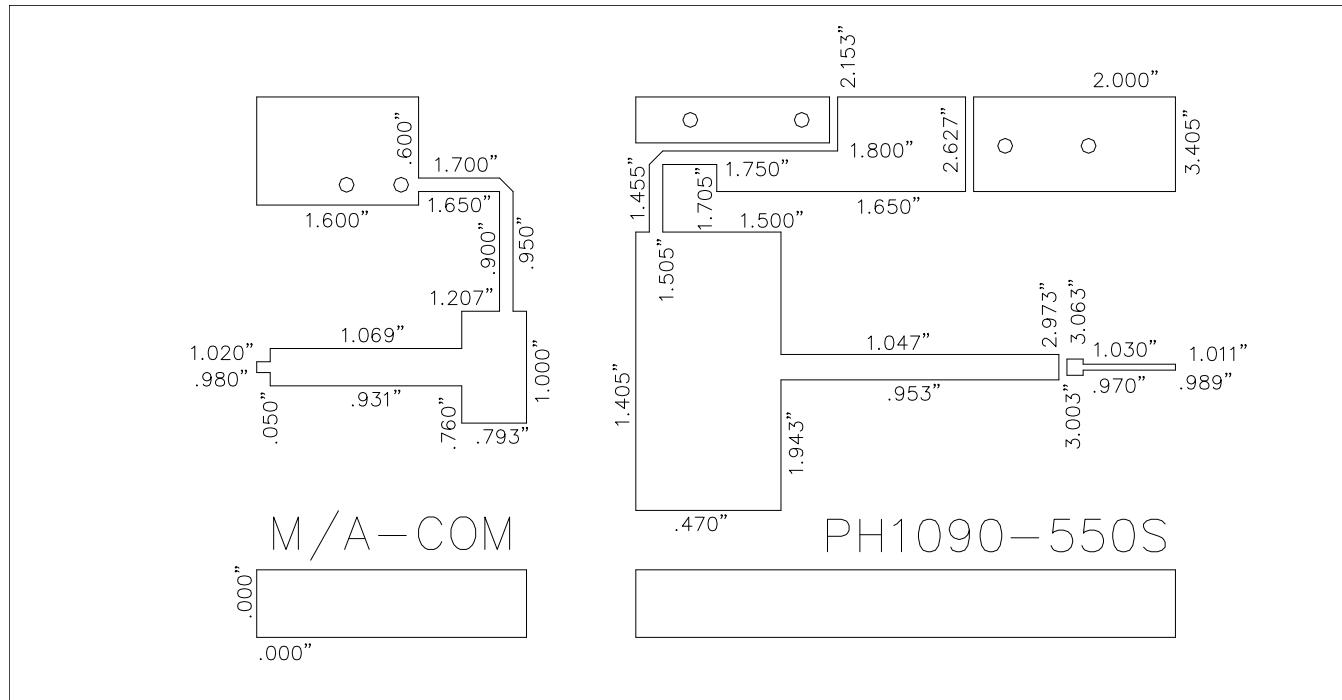
F (MHz)	Z <sub>IF</sub> ( $\Omega$ )	Z <sub>OF</sub> ( $\Omega$ )
1030	4.0 - j3.5	1.0 - j0.9
1090	3.6 - j2.7	1.1 - j1.9



## Avionics Pulsed Power Transistor 550 W, 1090 MHz, 10 $\mu$ s Pulse, 1% Duty

Rev. V1

### Test Fixture Circuit Dimensions



**Avionics Pulsed Power Transistor  
550 W, 1090 MHz, 10  $\mu$ s Pulse, 1% Duty**

Rev. V1

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