PH1090-550S

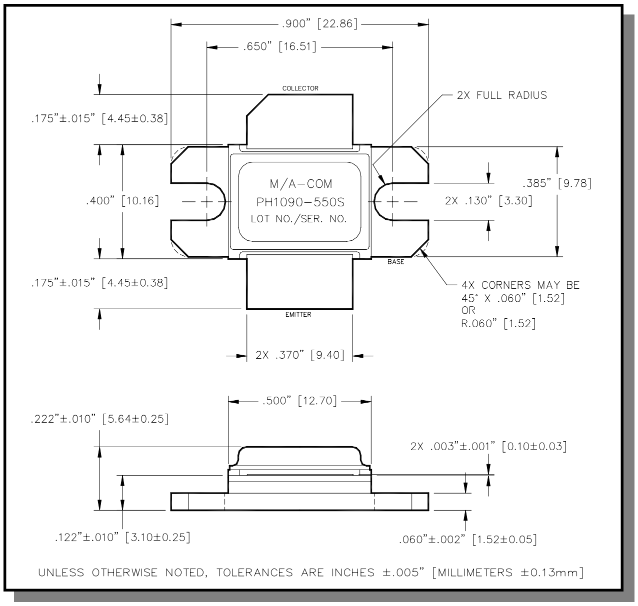
Avionics Pulsed Power Transistor
550W, 1090 MHz, 10µs Pulse, 1% Duty

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



UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005" [MILLIMETERS ±0.13mm]

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

Electrical Specifications: $T_C = 25 \pm 5°C$ (Room Ambient)

Parameter	Test Conditions	Frequency	Symbol	Min	Max	Units
Collector-Emitter Breakdown Voltage	I_C = 250mA		BV_{CES}	80	-	V
Collector-Emitter Leakage Current	V_{CE} = 50V		I_{CES}	-	25	mA
Thermal Resistance	Vcc = 50V, Pout = 550W	F = 1090 MHz	$R_{TH(JC)}$	-	0.05	°C/W
Input Power	Vcc = 50V, Pout = 550W	F = 1090 MHz	P_{IN}	-	100	W
Power Gain	Vcc = 50V, Pout = 550W	F = 1090 MHz	G_P	7.4	-	dB
Collector Efficiency	Vcc = 50V, Pout = 550W	F = 1090 MHz	η_C	50	-	%
Input Return Loss	Vcc = 50V, Pout = 550W	F = 1090 MHz	RL	-	-9	dB
Load Mismatch Tolerance	Vcc = 50V, Pout = 550W	F = 1090 MHz	VSWR-T	-	10:1	-
Load Mismatch Stability	Vcc = 50V, Pout = 550W	F = 1090 MHz	VSWR-S	-	1.5:1	-

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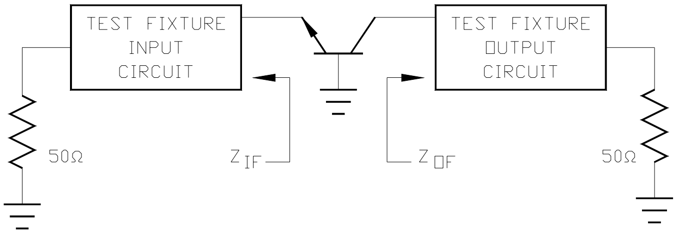
Typical RF Performance

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

RF Test Fixture Impedance

F (MHz)	Z_{IF} (Ω)	Z_{OF} (Ω)
1030	4.0 - j3.5	1.0 - j0.9
1090	3.6 - j2.7	1.1 - j1.9



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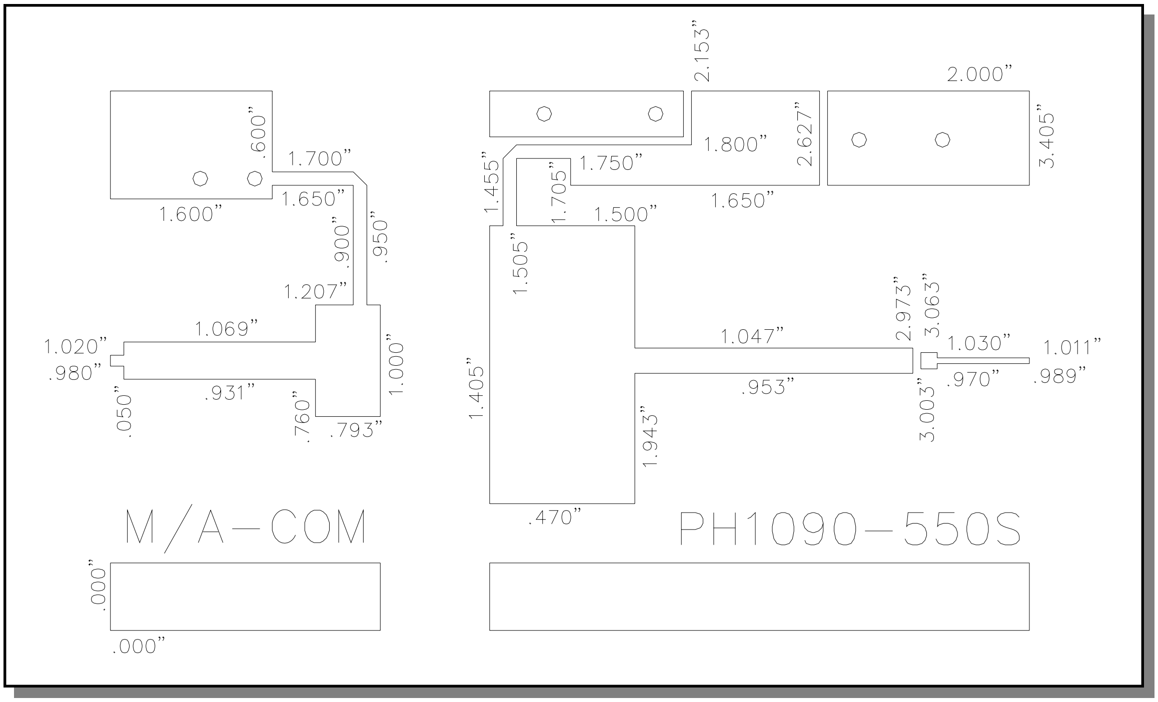
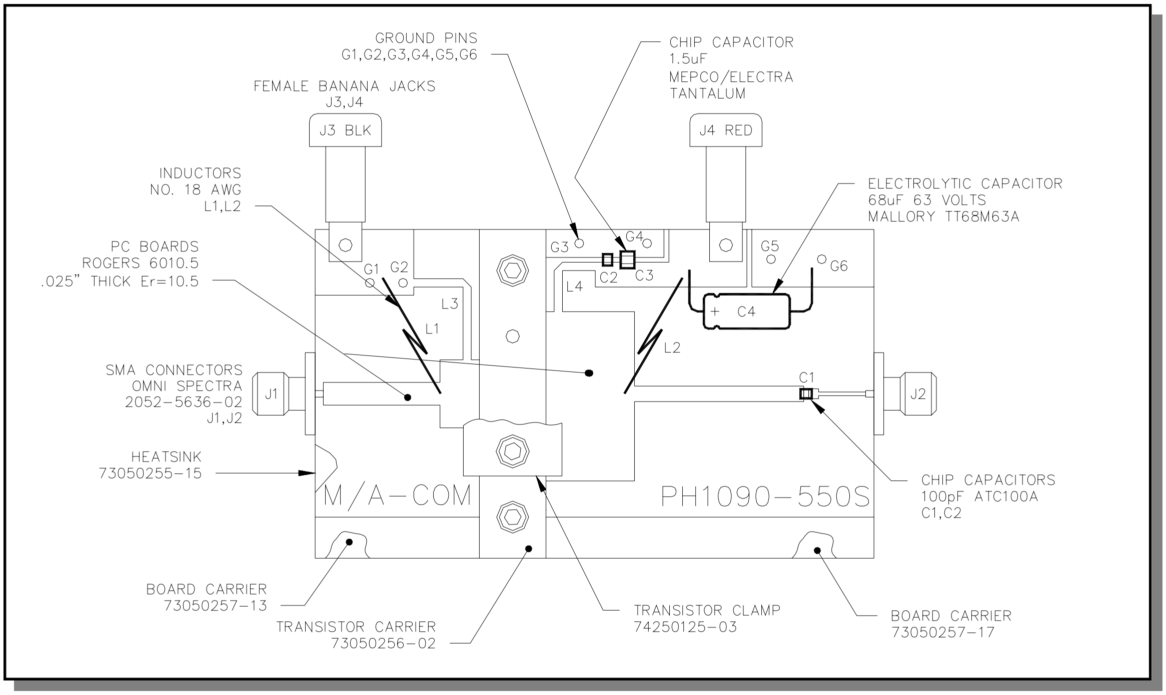
Test Fixture Circuit Dimensions



Test Fixture Assembly



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