MAPRST0912-50



Avionics Pulsed Power Transistor 50W, 960-1215 MHz, 10µs Pulse, 10% Duty

Released, 05 Sep 07

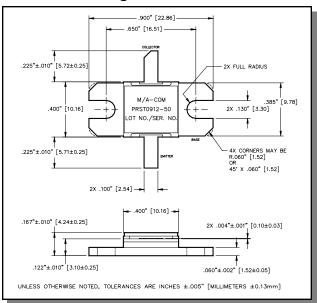
Features

- 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**

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	65	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current (Peak)	Ic	5.3	Α
Power Dissipation @ +25°C	P _{TOT}	220	kW
Storage Temperature	T_{STG}	-65 to +200	°C
Junction Temperature	T_J	200	°C

Outline Drawing



Electrical Specifications: T_C = 25 ± 5°C (Room Ambient)

Parameter	Test Conditions	Frequency	Symbol	Min	Max	Units
Collector-Emitter Breakdown Voltage	I _C = 15mA		BV _{CES}	65	-	V
Collector-Emitter Leakage Current	V _{CE} = 40V		I _{CES}	-	2.0	mA
Thermal Resistance	Vcc = 50V, Pin = 6.2W	F = 960, 1090, 1215 MHz	R _{TH(JC)}	-	0.80	°C/W
Output Power	Vcc = 50V, Pin = 6.2W	F = 960, 1090, 1215 MHz	Po	50	-	W
Power Gain	Vcc = 50V, Pin = 6.2W	F = 960, 1090, 1215 MHz	G _P	9.1	-	dB
Collector Efficiency	Vcc = 50V, Pin = 6.2W	F = 960, 1090, 1215 MHz	ης	40	-	%
Input Return Loss	Vcc = 50V, Pin = 6.2W	F = 960, 1090, 1215 MHz	RL	-	-9	dB
Load Mismatch Stability	Vcc = 50V, Pin = 6.2W	F = 960 MHz	VSWR-T	=	10:1	-
Load Mismatch Tolerance	Vcc = 50V, Pin = 6.2W	F = 960, 1090, 1215 MHz	VSWR-S	-	1.5:1	-

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Visit www.macomtech.com for additional data sheets and product information.



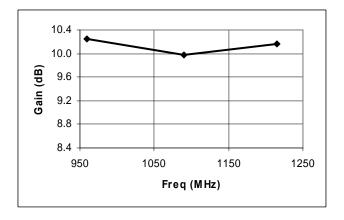
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Typical RF Performance

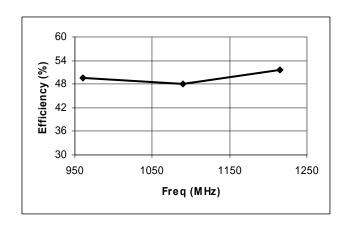
Freq.	Pin	Pout	Gain	∆Gain	lc	Eff	RL	VSWR-S	VSWR-T (10:1)	P1dB Overdrive	
(MHz)	(W)	(W)	(dB)	(dB)	(A)	(%)	(dB)	(1.5:1)		Pout	Δ Ρο
960	6.2	65.9	10.25	1	2.66	49.6	-22.2	S	Р	73.4	0.48
1090	6.2	61.9	9.98		2.58	48.0	-15.2	S		68.7	0.45
1215	6.2	64.6	10.16	0.35	2.50	51.6	-15.9	S	1	74.8	0.63

Note: $\Delta Po(dB)$ is the difference between Pout at 1dB overdrive and Pout at Pin = 6.2W.

Gain vs. Frequency



Collector Efficiency vs. Frequency



typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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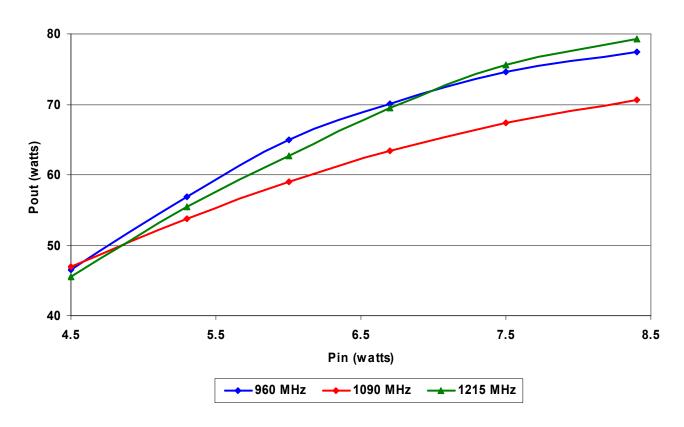
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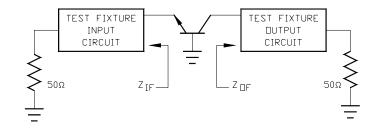
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RF Power Transfer Curve (Output Power Vs. Input Power)



Broadband Test Fixture Impedance

F (MHz)	Z _{IF} (Ω)	Z _{OF} (Ω)
960	3.5 - j7.5	12.0 - j7.8
1030	3.8 - j7.0	11.1 - j6.4
1090	3.9 - j6.8	10.6 - j5.1
1150	3.9 - j6.8	10.8 - j3.8
1215	3.6 - j7.0	11.1 - j3.2



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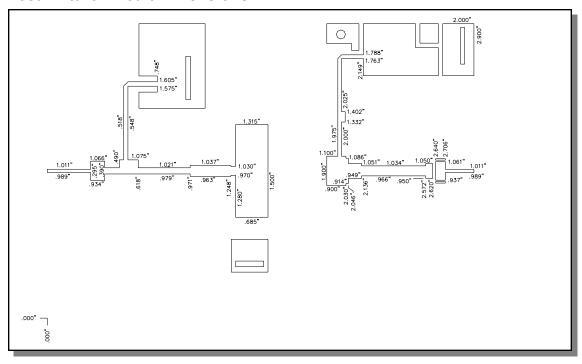
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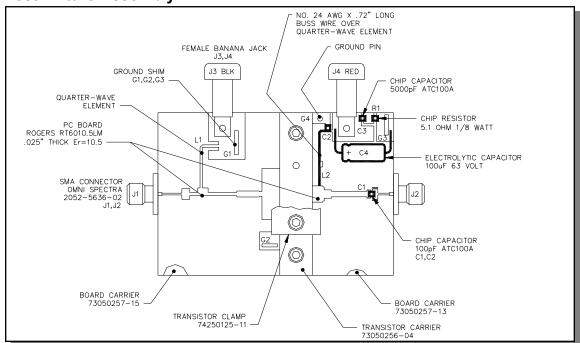
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Test Fixture Circuit Dimensions



Test Fixture Assembly



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.

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