

Avionics Pulsed Power Transistor 350W, 1025-1150 MHz, 10µs Pulse, 1% Duty

M/A-COM Products Released, 14 Sep 2007

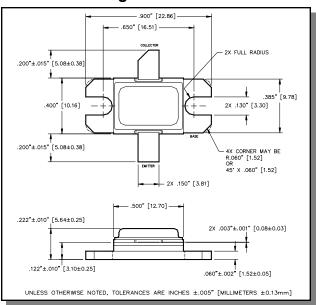
Features

- 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)	I _C	25	Α
Power Dissipation @ +25°C	P _{TOT}	1.1	kW
Storage Temperature	T_{STG}	-65 to +200	°C
Junction Temperature	T_J	200	°C

Outline Drawing



Electrical Specifications: $T_C = 25 \pm 5^{\circ}C$ (Room Ambient)

Parameter	Test Conditions	Frequency	Symbol	Min	Max	Units
Collector-Emitter Breakdown Voltage	I _C = 250mA		BV _{CES}	65	-	V
Collector-Emitter Leakage Current	V _{CE} = 50V		I _{CES}	-	15	mA
Thermal Resistance	Vcc = 50V, Pout = 350W	F = 1090 MHz	R _{TH(JC)}	-	0.16	°C/W
Input Power	Vcc = 50V, Pout = 350W	F = 1090 MHz	P _{IN}	=	44	W
Power Gain	Vcc = 50V, Pout = 350W	F = 1090 MHz	G _P	9.0	=	dB
Collector Efficiency	Vcc = 50V, Pout = 350W	F = 1090 MHz	ης	45	-	%
Input Return Loss	Vcc = 50V, Pout = 350W	F = 1090 MHz	RL	-	-9	dB
Load Mismatch Tolerance	Vcc = 50V, Pout = 350W	F = 1090 MHz	VSWR-T	-	10:1	-
Load Mismatch Stability	Vcc = 50V, Pout = 350W	F = 1090 MHz	VSWR-S	-	1.5:1	-

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

- North America Tel: 800.366.2266 / Fax: 978.366.2266
- Europe Tel: 44.1908.574.200 / Fax: 44.1908.574.300
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 Visit www.macomtech.com for additional data sheets and product information.



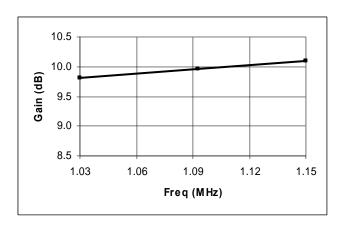
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Typical Broadband RF Performance

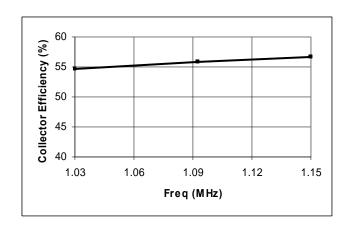
(Provided for information only - 100% Production testing performed at 1090MHz only)

Freq. (MHz)	Pin (W)	Pout (W)	Gain (dB)	Ic (A)	Eff (%)	RL (dB)	VSWR-S (1.5:1)	VSWR-T (10:1)
1025	37	350	9.81	12.8	54.6	-14.8	S	Р
1090	35	350	9.96	12.5	55.8	-16.7	S	Р
1150	34	350	10.10	12.4	56.6	-26.1	S	Р

Gain vs. Frequency

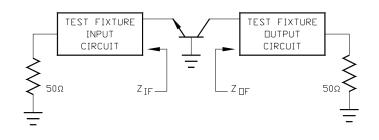


Collector Efficiency vs. Frequency



RF Test Fixture Impedance

F (MHz)	Z _{IF} (Ω)	Z _{OF} (Ω)
960	1.8 - j3.7	2.2 - j2.8
1025	1.8 - j3.2	2.3 - j2.2
1090	1.8 - j2.7	2.4 - j1.7
1150	1.9 - j2.3	2.6 - j1.5
1215	2.0 - j1.9	2.8 - j1.3

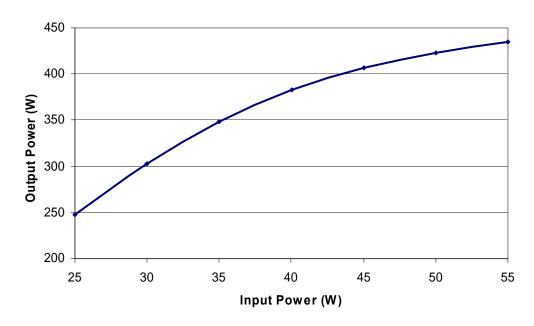


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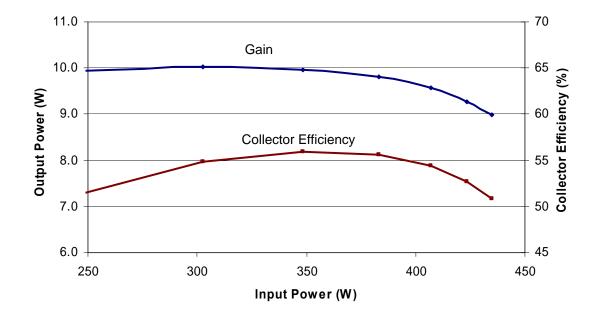


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RF Power Transfer Curve 1090 MHz, Output Power vs. Input Power



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



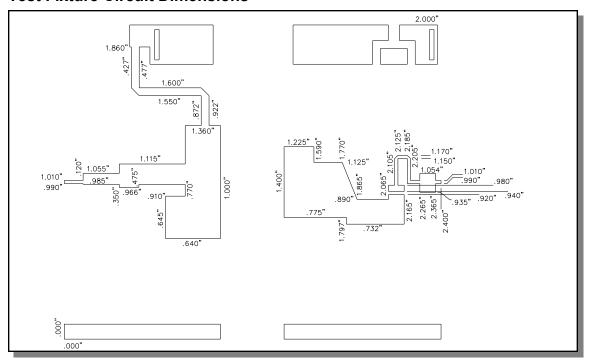
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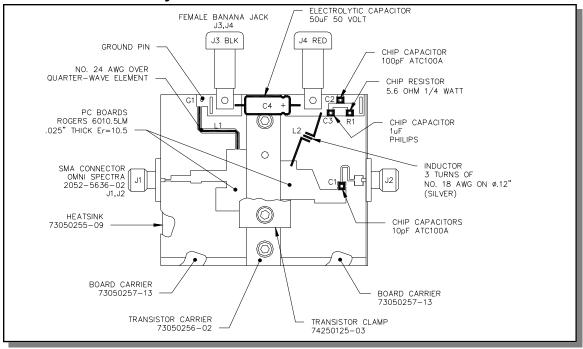


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Test Fixture Circuit Dimensions



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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