

Radar Pulsed Power Transistor 50W, 2.2-2.6GHz, 100µs Pulse, 10% Duty

M/A-COM Products Released, 20 Jun 07

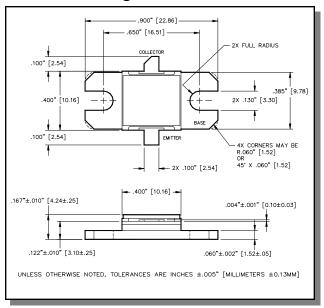
Features

- 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}	63	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current (Peak)	Ic	6.0	Α
Power Dissipation @ +25°C	P _{TOT}	159	W
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} = 36V		I _{CES}	-	3.0	mA
Thermal Resistance	Vcc = 36V, Pin = 8W	F = 2.25, 2.55 GHz	R _{TH(JC)}	-	1.1	°C/W
Output Power	Vcc = 36V, Pin = 8W	F = 2.25, 2.55 GHz	P _{OUT}	50	=	W
Power Gain	Vcc = 36V, Pin = 8W	F = 2.25, 2.55 GHz	G _P	8.0	=	dB
Collector Efficiency	Vcc = 36V, Pin = 8W	F = 2.25, 2.55 GHz	ης	40	-	%
Pulse Droop	Vcc = 36V, Pin = 8W	F = 2.25, 2.55 GHz	Droop	-	1.0	dB
Input Return Loss	Vcc = 36V, Pin = 8W	F = 2.25, 2.55 GHz	RL	-	-9	dB
Load Mismatch Tolerance	Vcc = 36V, Pin = 8W	F = 2.25, 2.55 GHz	VSWR-T	-	3:1	-
Load Mismatch Stability	Vcc = 36V, Pin = 8W	F = 2.25, 2.55 GHz	VSWR-S	-	1.5:1	-

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

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 tost data may be available.

Commitment to produce in volume is not qua

- North America Tel: 800.366.2266 / Fax: 978.366.2266
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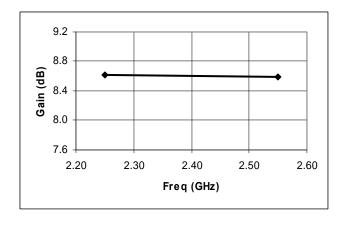


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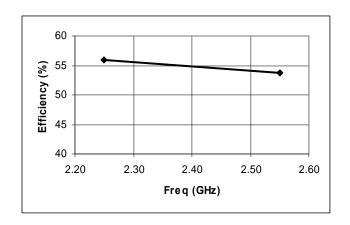
Typical RF Performance

Freq. (GHz)	Pin (W)	Pout (W)	Gain (dB)	Ic (A)	Eff (%)	RL (dB)	Droop (dB)	VSWR-S (1.5:1)	VSWR-T (3:1)
2.25	8.00	58.3	8.62	2.90	55.9	16.2	0.01	S	Р
2.55	8.00	57.8	8.58	2.99	53.6	17.0	0.05	S	Р

Gain vs. Frequency



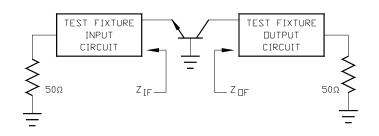
Collector Efficiency vs. Frequency



RF Test Fixture Impedance

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F (GHz)	Z _{IF} (Ω)	Z _{OF} (Ω)		
2.25	15.0 - j7.0	12.8 - j3.0		
2.40	14.0 - j5.5	12.0 - j1.6		
2.55	13.7 - j4.0	11.8 - j0.4		



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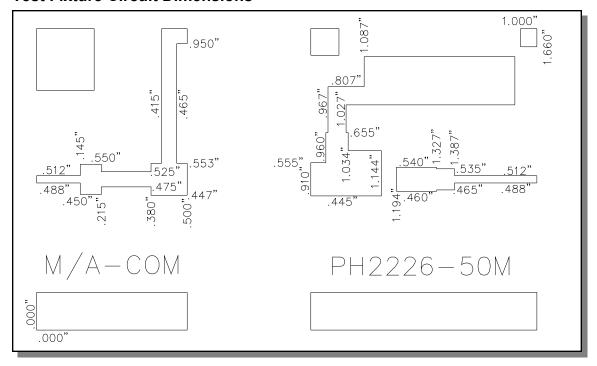
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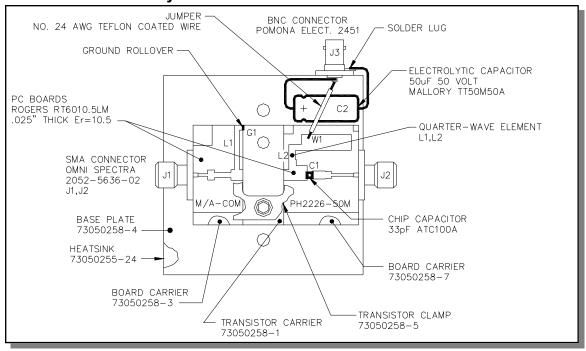
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Test Fixture Circuit Dimensions



Test Fixture Assembly



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