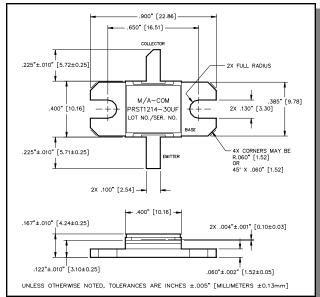


Radar Pulsed Power Transistor 30W, 1.2-1.4 GHz, 6ms Pulse, 25% Duty

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}	70	V
Emitter-Base Voltage	V _{EBO}	3.0	V
Collector Current (Peak)	Ι _C	5.0	А
Power Dissipation @ +25°C	P _{TOT}	145	W
Storage Temperature	T _{STG}	-65 to +200	°C
Junction Temperature	TJ	200	°C

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

Parameter	Test Conditions	Frequency	Symbol	Min	Мах	Units
Collector-Emitter Breakdown Voltage	I _C = 10mA		BV _{CES}	70	-	V
Collector-Emitter Leakage Current	V _{CE} = 40V		I _{CES}	-	2.0	mA
Thermal Resistance	Vcc = 36V, Pin = 5.3W	F = 1.2, 1.3, 1.4 GHz	R _{TH(JC)}	-	1.2	°C/W
Output Power	Vcc = 36V, Pin = 5.3W	F = 1.2, 1.3, 1.4 GHz	Pout	30	-	W
Power Gain	Vcc = 36V, Pin = 5.3W	F = 1.2, 1.3, 1.4 GHz	G _P	7.5	-	dB
Gain Flatness	Vcc = 36V, Pin = 5.3W	F = 1.2, 1.3, 1.4 GHz	ΔG	-	1.25	dB
Collector Efficiency	Vcc = 36V, Pin = 5.3W	F = 1.2, 1.3, 1.4 GHz	η_c	45	-	%
Input Return Loss	Vcc = 36V, Pin = 5.3W	F = 1.2, 1.3, 1.4 GHz	RL	-	-9	dB
Pulse Droop	Vcc = 36V, Pin = 5.3W	F = 1.2, 1.3, 1.4 GHz	Droop	-	0.5	dB
Load Mismatch Tolerance	Vcc = 36V, Pin = 5.3W	F = 1.2, 1.3, 1.4 GHz	VSWR-T	-	3:1	-
Load Mismatch Stability	Vcc = 36V, Pin = 5.3W	F = 1.2, 1.3, 1.4 GHz	VSWR-S	-	1.5:1	-

¹

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Released, 30 May 07



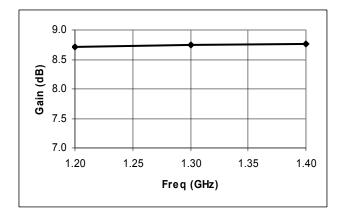
Radar Pulsed Power Transistor
30W, 1.2-1.4 GHz, 6ms Pulse, 25% Duty

M/A-COM Products Released, 30 May 07

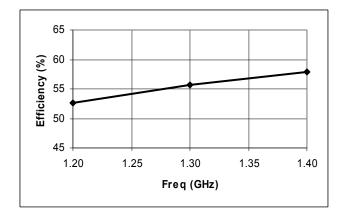
Typical RF Performance

Freq. (GHz)	Pin (W)	Pout (W)	Gain (dB)	lc (A)	Eff (%)	Droop (dB)	RL (dB)	VSWR-S (1.5:1)	VSWR-T (3:1)
1.2	5.3	39.4	8.71	2.08	52.6	0.24	-12.3	S	Р
1.3	5.3	39.7	8.75	1.98	55.6	0.20	-14.6	S	Р
1.4	5.3	39.9	8.77	1.92	57.8	0.17	-15.0	S	Р

Gain vs. Frequency

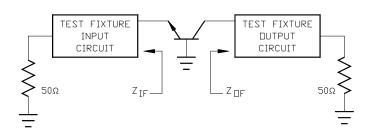


Collector Efficiency vs. Frequency



RF Test Fixture Impedance

F (GHz)	Z _{IF} (Ω)	Z _{OF} (Ω)		
1.2	6.7 - j6.9	14.3 + j2.4		
1.3	6.5 - j6.5	11.2 - j0.8		
1.4	6.3 - j4.5	7.2 - j0.1		



2

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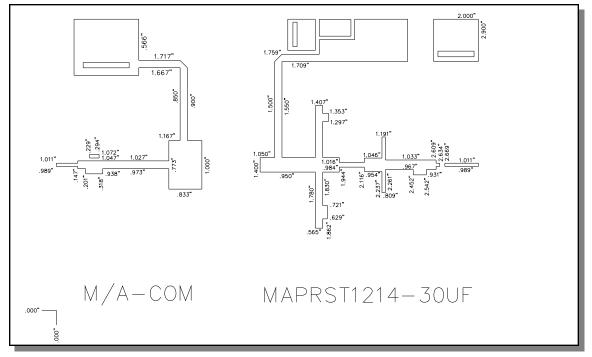
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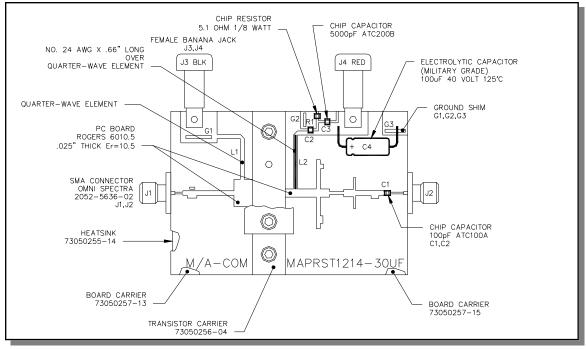
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Radar Pulsed Power Transistor 30W, 1.2-1.4 GHz, 6ms Pulse, 25% Duty

Test Fixture Circuit Dimensions



Test Fixture Assembly



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