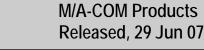
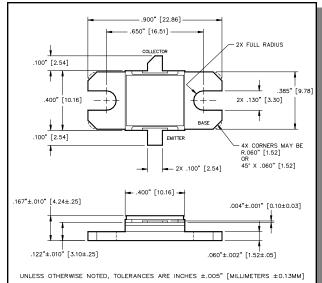
# Radar Pulsed Power Transistor 8.5W, 2.7-2.9 GHz, 100µs Pulse, 10% Duty

#### 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 <sub>CES</sub>	65	V
Emitter-Base Voltage	V <sub>EBO</sub>	3.0	V
Collector Current (Peak)	Ι <sub>C</sub>	1.8	А
Power Dissipation @ +25°C	P <sub>TOT</sub>	65	W
Storage Temperature	T <sub>STG</sub>	-65 to +200	°C
Junction Temperature	TJ	200	°C

#### Electrical Specifications: T<sub>c</sub> = 25 ± 5°C (Room Ambient )

Parameter	Test Conditions	Frequency	Symbol	Min	Max	Units
Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 10mA		BV <sub>CES</sub>	65	-	V
Collector-Emitter Leakage Current	V <sub>CE</sub> = 40V		I <sub>CES</sub>	-	1.5	mA
Thermal Resistance	Vcc = 36V, Pin = 1.3W	F = 2.7, 2.8, 2.9 GHz	R <sub>TH(JC)</sub>	-	2.2	°C/W
Output Power	Vcc = 36V, Pin = 1.3W	F = 2.7, 2.8, 2.9 GHz	P <sub>OUT</sub>	8.5	-	W
Power Gain	Vcc = 36V, Pin = 1.3W	F = 2.7, 2.8, 2.9 GHz	G <sub>P</sub>	8.15	-	dB
Collector Efficiency	Vcc = 36V, Pin = 1.3W	F = 2.7, 2.8, 2.9 GHz	η <sub>c</sub>	35	-	%
Pulse Droop	Vcc = 36V, Pin = 1.3W	F = 2.7, 2.8, 2.9 GHz	Droop	-	0.7	dB
Input Return Loss	Vcc = 36V, Pin = 1.3W	F = 2.7, 2.8, 2.9 GHz	RL	-	-6	dB
Load Mismatch Tolerance	Vcc = 36V, Pin = 1.3W	F = 2.7, 2.8, 2.9 GHz	VSWR-T	-	3:1	-
Load Mismatch Stability	Vcc = 36V, Pin = 1.3W	F = 2.7, 2.8, 2.9 GHz	VSWR-S	-	1.5:1	-

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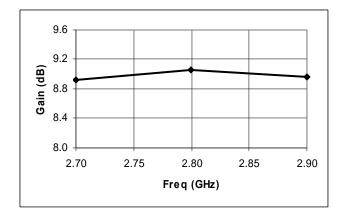
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Radar Pulsed Power Transistor
8.5W, 2.7-2.9 GHz, 100µs Pulse, 10% Duty

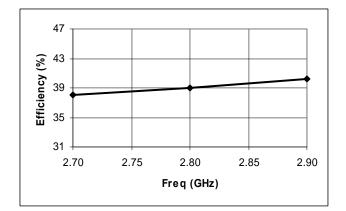
## Typical RF Performance

Freq. (GHz)	Pin (W)	Pout (W)	Gain (dB)	lc (A)	Eff (%)	RL (dB)	Droop (dB)	VSWR-S (1.5:1)	VSWR-T (3:1)
2.7	1.3	10.2	8.92	0.74	38.0	-18.1	0.11	S	Р
2.8	1.3	10.5	9.06	0.75	39.1	-16.7	0.14	S	Р
2.9	1.3	10.3	8.97	0.71	40.3	-12.5	0.21	S	Р

Gain vs. Frequency

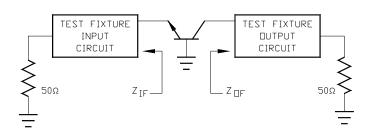


#### **Collector Efficiency vs. Frequency**



#### **RF Test Fixture Impedance**

F (GHz)	Z <sub>IF</sub> (Ω)	Z <sub>OF</sub> (Ω)		
2.7	40 - j12	25 + j3.5		
2.8	38 - j14	20 + j2.0		
2.9	35 - j16	16 + j2.4		



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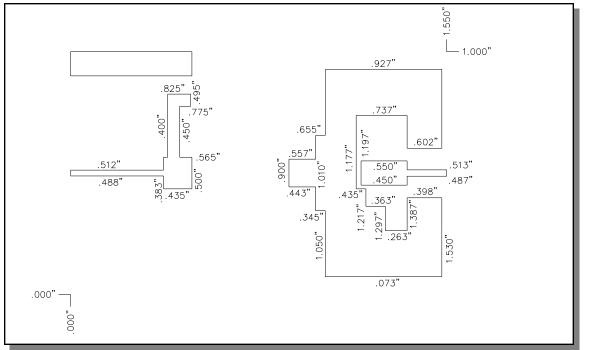
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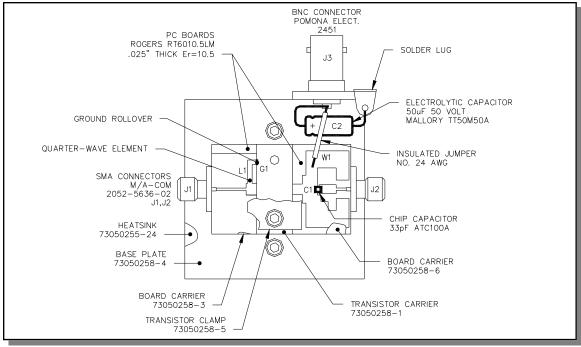
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# **Test Fixture Circuit Dimensions**



## **Test Fixture Assembly**



3

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