

**M/A-COM Products** 

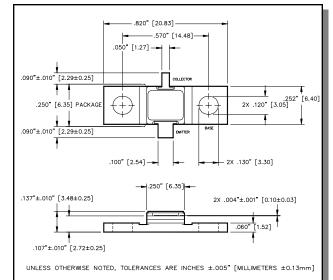
Released, 10 Jul 07

# **Radar Pulsed Power Transistor** 11W, 3.1-3.4 GHz, 1µs 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>	60	V
Emitter-Base Voltage	V <sub>EBO</sub>	3.0	V
Collector Current (Peak)	Ι <sub>C</sub>	1.3	А
Power Dissipation @ +25°C	P <sub>TOT</sub>	125	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> = 12.5mA		BV <sub>CES</sub>	60	-	V
Collector-Emitter Leakage Current	V <sub>CE</sub> = 36V		I <sub>CES</sub>	-	1.25	mA
Thermal Resistance	Vcc = 36V, Pout = 11W	F = 3.1, 3.25, 3.4 GHz	R <sub>TH(JC)</sub>	-	1.4	°C/W
Input Power	Vcc = 36V, Pout = 11W	F = 3.1, 3.25, 3.4 GHz	P <sub>IN</sub>	-	1.74	W
Power Gain	Vcc = 36V, Pout = 11W	F = 3.1, 3.25, 3.4 GHz	G <sub>P</sub>	8.0	-	dB
Collector Efficiency	Vcc = 36V, Pout = 11W	F = 3.1, 3.25, 3.4 GHz	η <sub>c</sub>	35	-	%
Input Return Loss	Vcc = 36V, Pout = 11W	F = 3.1, 3.25, 3.4 GHz	RL	-	-6	dB
Load Mismatch Tolerance	Vcc = 36V, Pout = 11W	F = 3.25 GHz	VSWR-T	-	2:1	-

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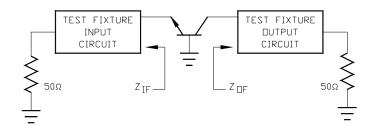


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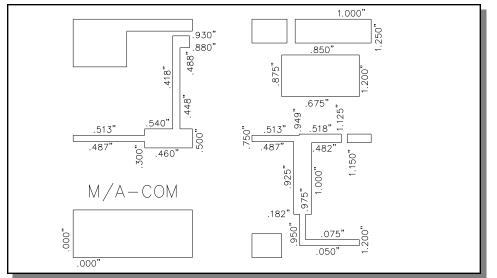
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#### **RF Test Fixture Impedance**

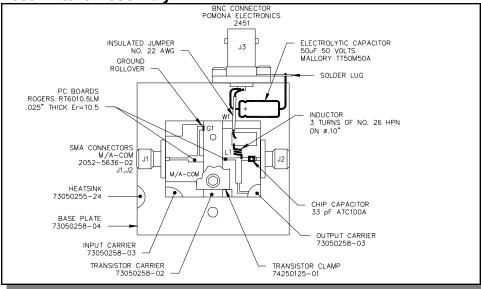
F (GHz)	Z <sub>IF</sub> (Ω)	Z <sub>OF</sub> (Ω)
3.10	17.5 - j8.5	90 + j37
3.25	15.0 - j8.2	58 + j7.0
3.40	13.0 - j8.0	30 + j14.5



# **Test Fixture Circuit Dimensions**



#### **Test Fixture Assembly**



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