PH2856-160

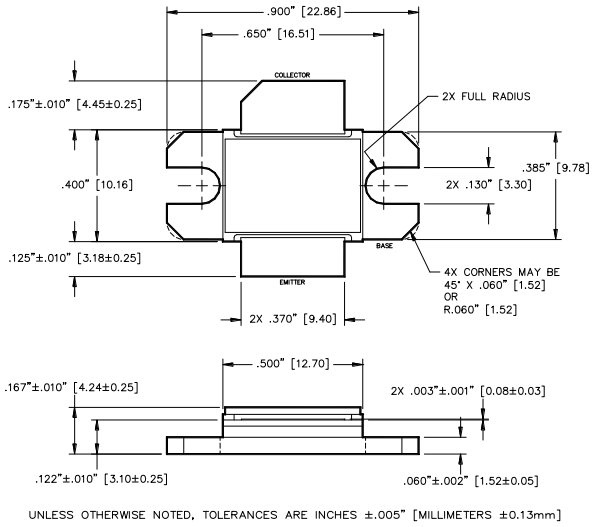
Radar Pulsed Power Transistor
160W, 2.856 GHz, 12µs Pulse, 10% Duty

Rev. V1

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



UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005" [MILLIMETERS ±0.13mm]

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	15.0	A
Power Dissipation @ +25°C	P_{TOT}	700	W
Storage Temperature	T_{STG}	-65 to +200	°C
Junction Temperature	T_J	200	°C

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

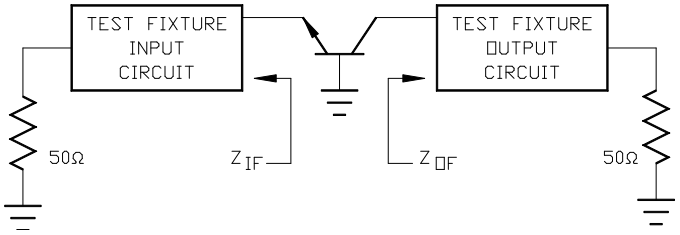
Parameter	Test Conditions	Frequency	Symbol	Min	Max	Units
Collector-Emitter Breakdown Voltage	I_C = 40mA		BV_{CES}	65	-	V
Collector-Emitter Leakage Current	V_{CE} = 36V		I_{CES}	-	7.5	mA
Thermal Resistance	Vcc = 40V, Pout = 160W	F = 2.856 GHz	$R_{TH(JC)}$	-	0.25	°C/W
Output Power	Vcc = 40V, Pout = 160W	F = 2.856 GHz	P_{IN}	-	28.5	W
Power Gain	Vcc = 40V, Pout = 160W	F = 2.856 GHz	G_P	7.5	-	dB
Collector Efficiency	Vcc = 40V, Pout = 160W	F = 2.856 GHz	η_C	40	-	%
Input Return Loss	Vcc = 40V, Pout = 160W	F = 2.856 GHz	RL	-	-6	dB
Load Mismatch Tolerance	Vcc = 40V, Pout = 160W	F = 2.856 GHz	VSWR-T	-	3:1	-

Typical RF Performance

Freq. (GHz)	Pin (W)	Pout (W)	Gain (dB)	Ic (A)	Eff (%)	RL (dB)	VSWR-T (3:1)
2.856	18.6	160	9.36	8.28	48.3	-16.1	P

RF Test Fixture Impedance

F (GHz)	Z_{IF} (Ω)	Z_{OF} (Ω)
2.856	4.4 - j4.9	4.6 - j1.6



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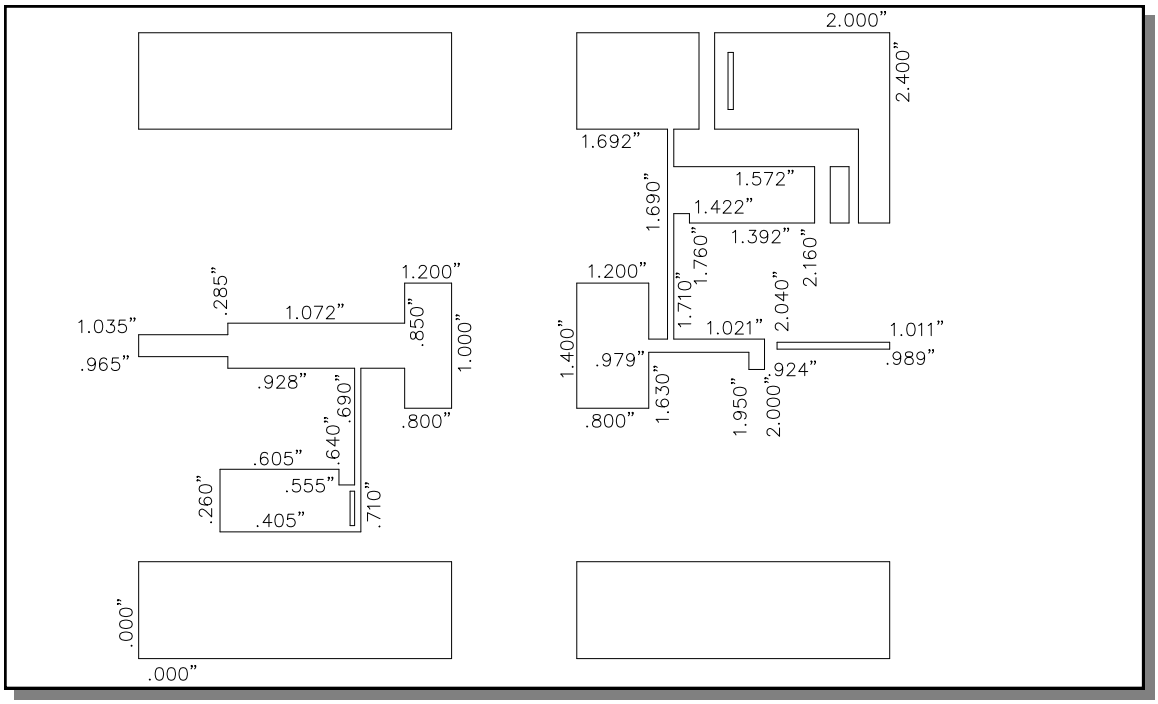
Test Fixture Circuit Dimensions



Test Fixture Assembly