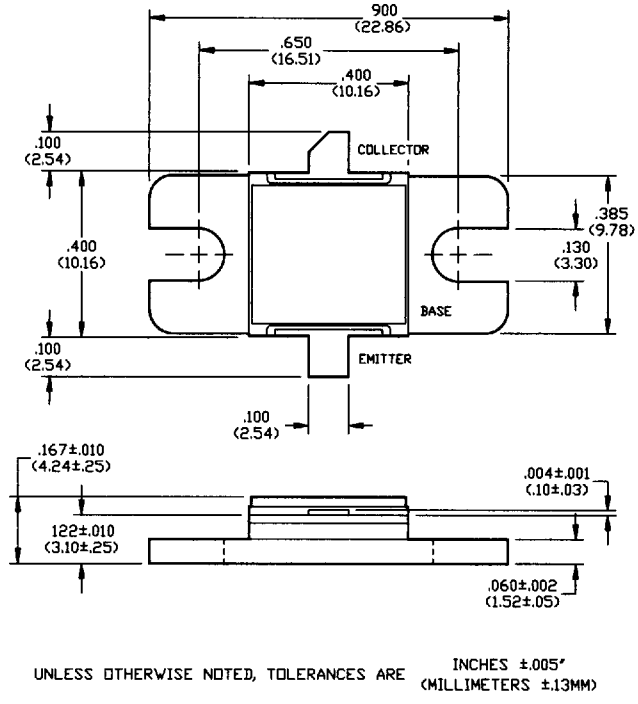
Radar Pulsed Power Transistor PH2729-5M

5 Watts, 2.70-2.90 GHz, 100 μs Pulse, 10% Duty

Features

- NPN Silicon Microwave Power Transistor
- Common Base Configuration
- Broadband Class C Operation
- High Efficiency Interdigitated Geometry
- Diffused Emitter Ballasting Resistors
- Gold Metallization System
- Internal Input and Output Impedance Matching
- Hermetic Metal/Ceramic Package

Outline Drawing



Absolute Maximum Ratings at 25°C

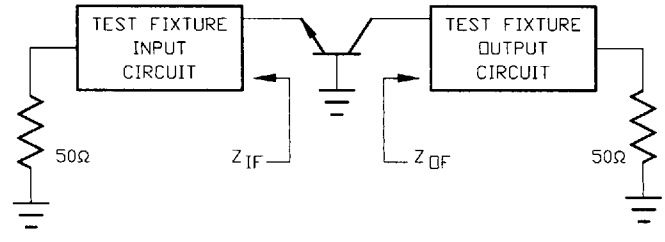
Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	63	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current (Peak)	I_C	1.1	A
Power Dissipation	P_D	40	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C

Electrical Characteristics at 25°C

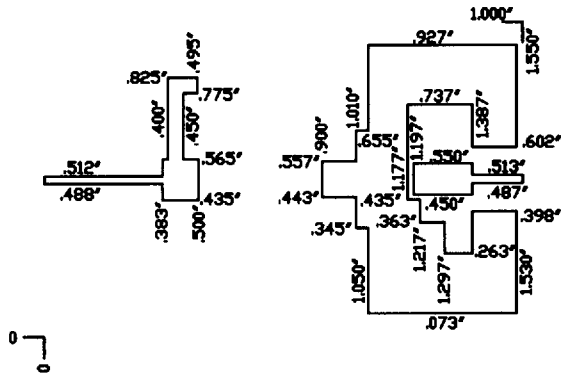
Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	63	-	V	I_C=10 mA
Collector-Emitter Leakage Current	I_{CES}	-	1.0	mA	V_{CE}=40 V
Thermal Resistance	$R_{TH(JC)}$	-	5.0	°C/W	V_{CC}=36 V, P_{IN}=1.0 W, F=2.7, 2.8, 2.9 GHz
Output Power	P_{OUT}	5.0	-	W	V_{CC}=36 V, P_{IN}=1.0 W, F=2.7, 2.8, 2.9 GHz
Input Return Loss	RL	6	-	dB	V_{CC}=36 V, P_{IN}=1.0 W, F=2.7, 2.8, 2.9 GHz
Power Gain	G_P	7.0	-	dB	V_{CC}=36 V, P_{IN}=1.0 W, F=2.7, 2.8, 2.9 GHz
Collector Efficiency	η_C	30	-	%	V_{CC}=36 V, P_{IN}=1.0 W, F=2.7, 2.8, 2.9 GHz
Load Mismatch Tolerance	VSWR-T	-	3:1	-	V_{CC}=36 V, P_{IN}=1.0 W, F=2.7, 2.8, 2.9 GHz
Load Mismatch Stability	VSWR-S	-	1.5:1	-	V_{CC}=36 V, P_{IN}=1.0 W, F=2.7, 2.8, 2.9 GHz

Broadband Test Fixture Impedances

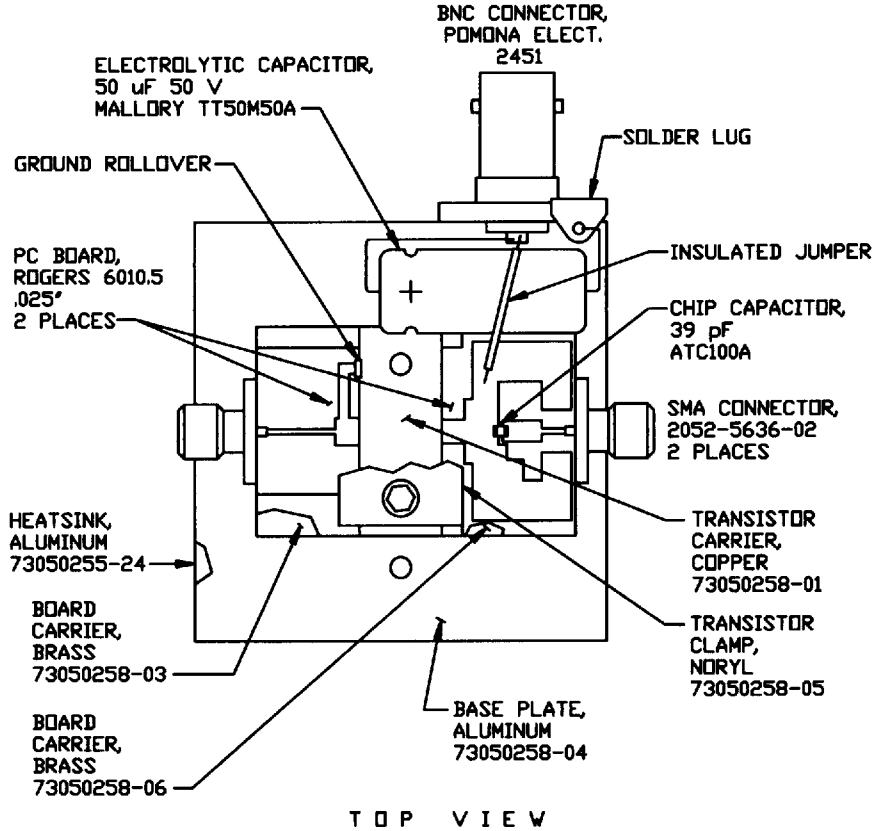
F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
2.70	40 - j12	25 + j3.5
2.80	38 - j14	20 + j2.0
2.90	35 - j16	16 + j2.4



Broadband Test Fixture Electrical Schematic



CIRCUIT DIMENSIONS



TOP VIEW