

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

PH2729-8.5M

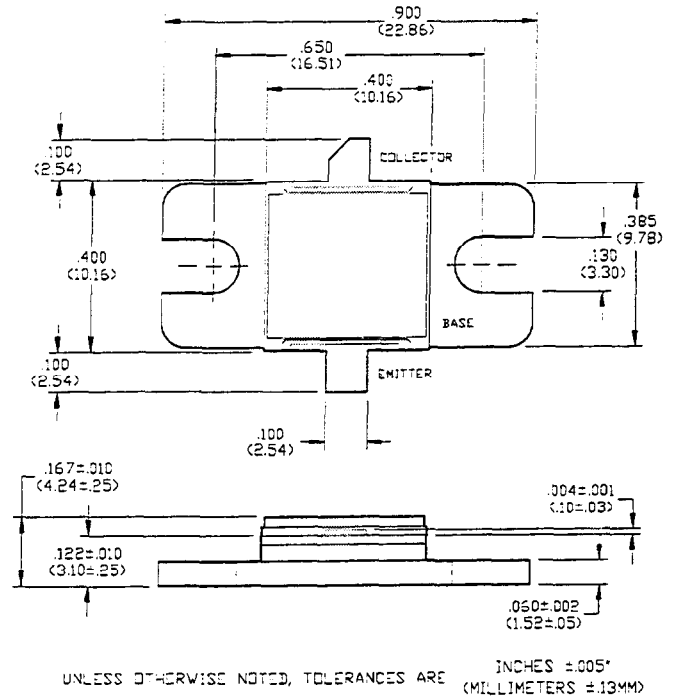
V2.00

Features

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

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	65	V
Emitter-Base Voltage	V_{EB0}	3.0	V
Collector Current (Peak)	I_C	1.8	A
Total Power Dissipation	P_{TOT}	65	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C

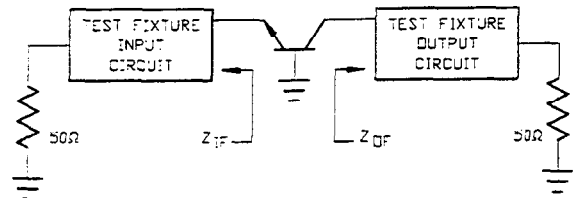


Electrical Characteristics at 25°C

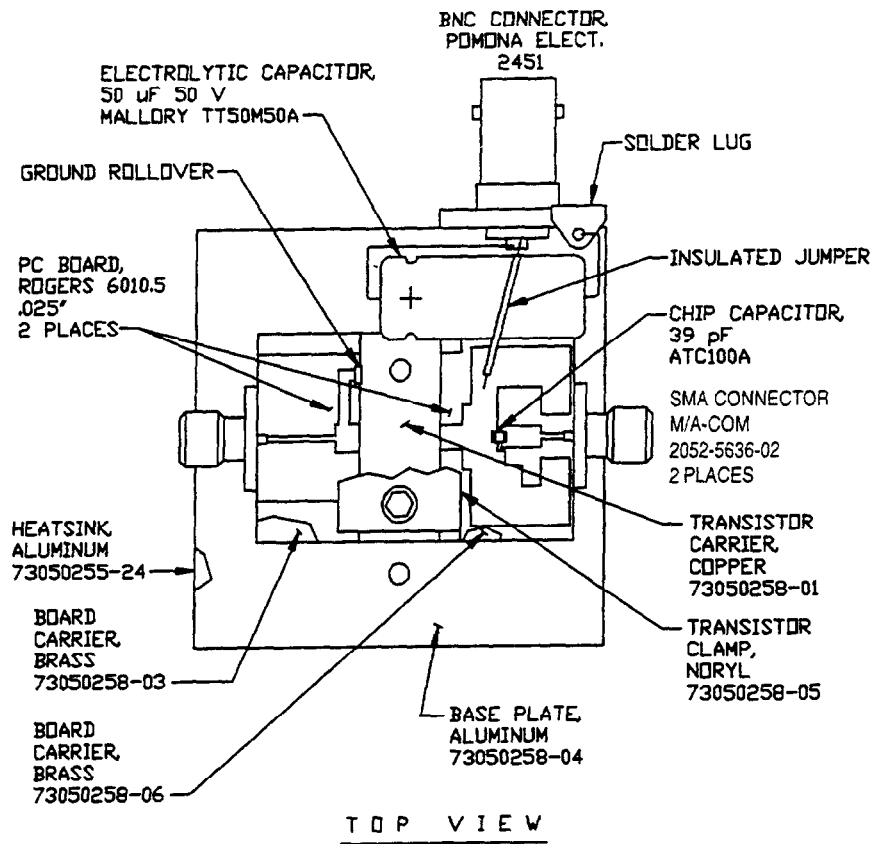
Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	65	-	V	$I_C=10\text{ mA}$
Collector-Emitter Leakage Current	I_{CES}	-	1.5	mA	$V_{CE}=40\text{ V}$
Thermal Resistance	$R_{TH(JC)}$	-	2.2	°C/W	$V_{CC}=36\text{ V}$, $P_{IN}=1.3\text{ W}$, $F=2.7, 2.8, 2.9\text{ GHz}$
Output Power	P_{OUT}	8.5	-	W	$V_{CC}=36\text{ V}$, $P_{IN}=1.3\text{ W}$, $F=2.7, 2.8, 2.9\text{ GHz}$
Power Gain	G_p	8.1	-	dB	$V_{CC}=36\text{ V}$, $P_{IN}=1.3\text{ W}$, $F=2.7, 2.8, 2.9\text{ GHz}$
Collector Efficiency	η_c	35	-	%	$V_{CC}=36\text{ V}$, $P_{IN}=1.3\text{ W}$, $F=2.7, 2.8, 2.9\text{ GHz}$
Input Return Loss	RL	6	-	dB	$V_{CC}=36\text{ V}$, $P_{IN}=1.3\text{ W}$, $F=2.7, 2.8, 2.9\text{ GHz}$
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=36\text{ V}$, $P_{IN}=1.3\text{ W}$, $F=2.7, 2.8, 2.9\text{ GHz}$
Load Mismatch Stability	VSWR-S	-	1.5:1	-	$V_{CC}=36\text{ V}$, $P_{IN}=1.3\text{ W}$, $F=2.7, 2.8, 2.9\text{ GHz}$

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



RF Test Fixture



Test Fixture PC Board Dimensions

