

Radar Pulsed Power Transistor, 5W, 100μs Pulse, 10% Duty

2.7 - 3.1 GHz

PH2731-5M

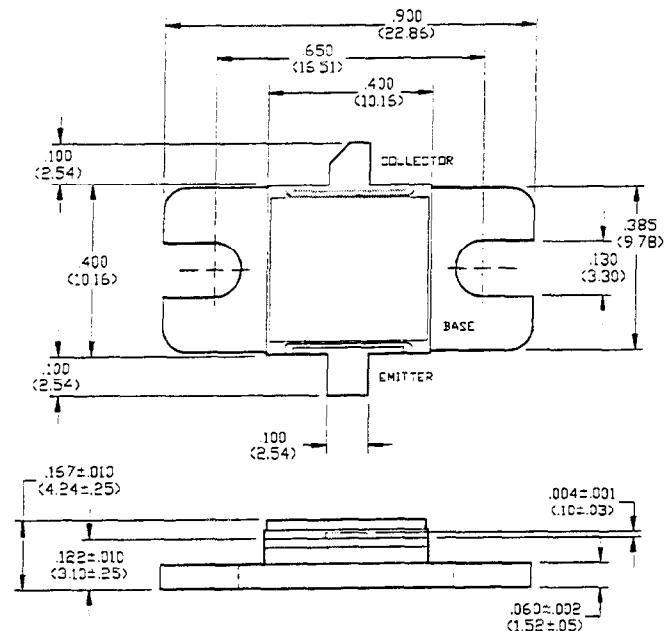
V2.00

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	0.7	A
Total Power Dissipation	P_{TOT}	50	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C



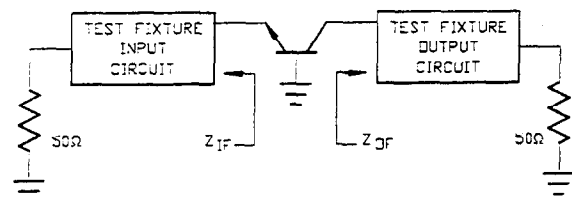
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005 (MILLIMETERS ±.13MM)

Electrical Characteristics at 25°C

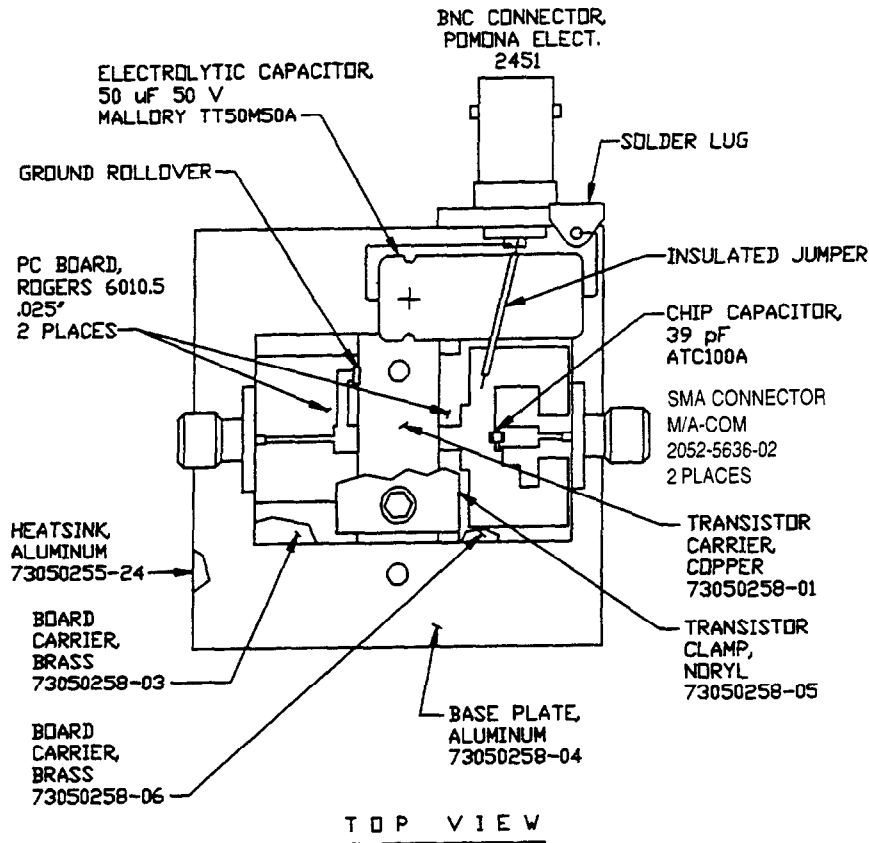
Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	65	-	V	$I_C = 10 \text{ mA}$
Collector-Emitter Leakage Current	I_{CES}	-	1.0	mA	$V_{CE} = 40 \text{ V}$
Thermal Resistance	$R_{TH(JC)}$	-	3.5	°C/W	$V_{CC} = 36 \text{ V}$, $P_{IN} = 1.0 \text{ W}$, $F = 2.7, 2.9, 3.1 \text{ GHz}$
Output Power	P_{OUT}	5.0	-	W	$V_{CC} = 36 \text{ V}$, $P_{IN} = 1.0 \text{ W}$, $F = 2.7, 2.9, 3.1 \text{ GHz}$
Power Gain	G_P	7.0	-	dB	$V_{CC} = 36 \text{ V}$, $P_{IN} = 1.0 \text{ W}$, $F = 2.7, 2.9, 3.1 \text{ GHz}$
Collector Efficiency	η_C	30	-	%	$V_{CC} = 36 \text{ V}$, $P_{IN} = 1.0 \text{ W}$, $F = 2.7, 2.9, 3.1 \text{ GHz}$
Input Return Loss	RL	6	-	dB	$V_{CC} = 36 \text{ V}$, $P_{IN} = 1.0 \text{ W}$, $F = 2.7, 2.9, 3.1 \text{ GHz}$
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC} = 36 \text{ V}$, $P_{IN} = 1.0 \text{ W}$, $F = 2.7, 2.9, 3.1 \text{ GHz}$
Load Mismatch Stability	VSWR-S	-	1.5:1	-	$V_{CC} = 36 \text{ V}$, $P_{IN} = 1.0 \text{ W}$, $F = 2.7, 2.9, 3.1 \text{ GHz}$

Broadband Test Fixture Impedances

F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
2.70	$40 - j12$	$25 + j3.5$
2.90	$35 - j16$	$16 + j2.4$
3.10	$30 - j18$	$12 + j4.0$



RF Test Fixture



Test Fixture PC Board Dimensions

