

# Radar Pulsed Power Transistor, 20W, 100 $\mu$ s Pulse, 10% Duty 2.9 - 3.1 GHz PH2931-20M

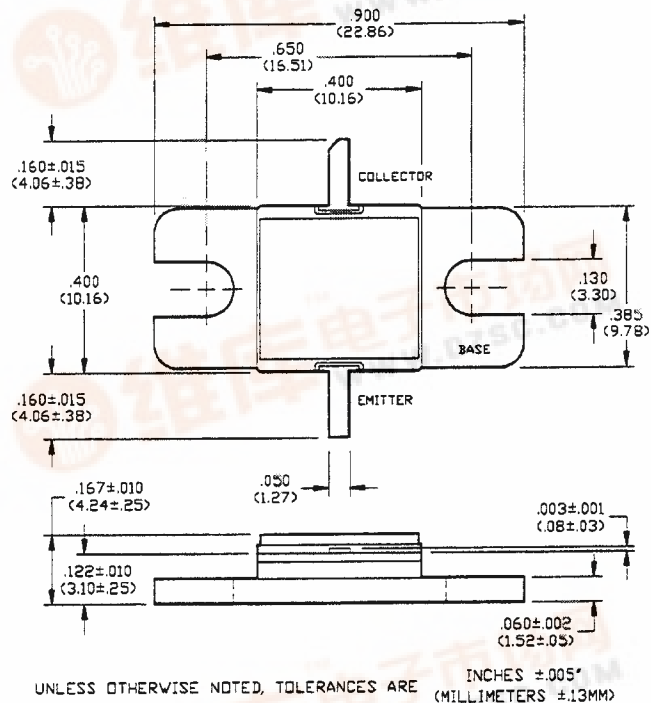
V2.00

## 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	$V_{EBO}$	3.0	V
Collector Current (Peak)	$I_C$	1.85	A
Total Power Dissipation	$P_{TOT}$	115	W
Junction Temperature	$T_J$	200	°C
Storage Temperature	$T_{STG}$	-65 to +200	°C

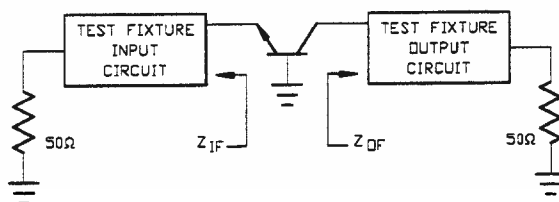


## Electrical Characteristics at 25°C

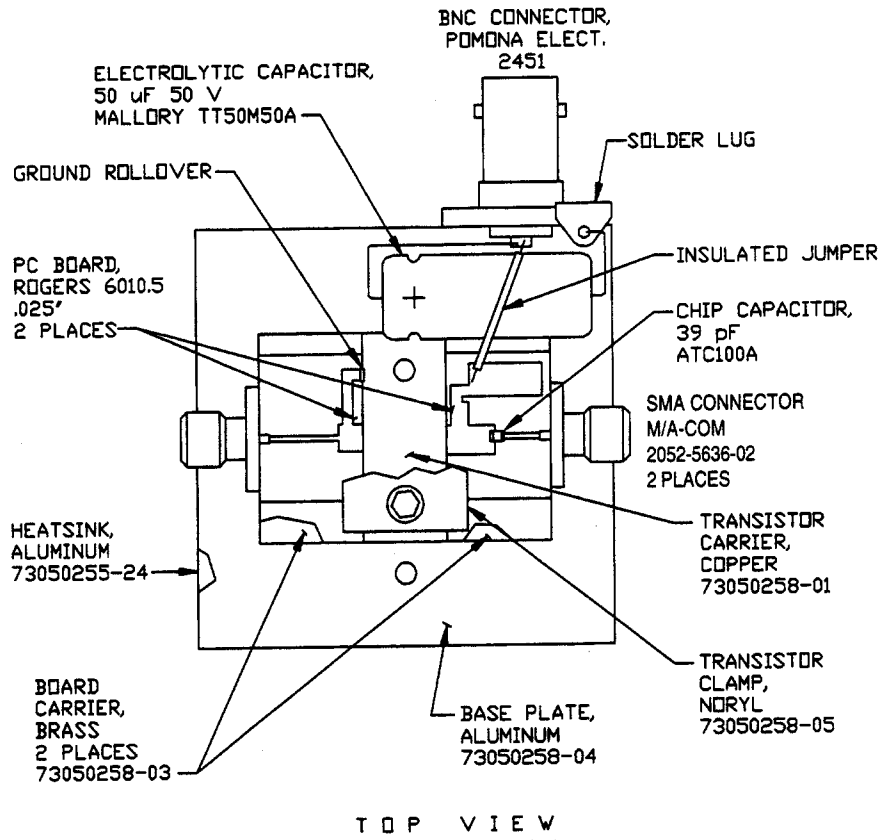
Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	$BV_{CES}$	65	-	V	$I_C=10$ mA
Collector-Emitter Leakage Current	$I_{CES}$	-	1.5	mA	$V_{CE}=40$ V
Thermal Resistance	$R_{TH(JC)}$	-	1.5	°C/W	$V_{CC}=36$ V, $P_{IN}=3.0$ W, $F=2.9, 3.0, 3.1$ GHz
Output Power	$P_{OUT}$	20	-	W	$V_{CC}=36$ V, $P_{IN}=3.0$ W, $F=2.9, 3.0, 3.1$ GHz
Power Gain	$G_p$	8.2	-	dB	$V_{CC}=36$ V, $P_{IN}=3.0$ W, $F=2.9, 3.0, 3.1$ GHz
Collector Efficiency	$\eta_C$	45	-	%	$V_{CC}=36$ V, $P_{IN}=3.0$ W, $F=2.9, 3.0, 3.1$ GHz
Input Return Loss	RL	6	-	dB	$V_{CC}=36$ V, $P_{IN}=3.0$ W, $F=2.9, 3.0, 3.1$ GHz
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=36$ V, $P_{IN}=3.0$ W, $F=2.9, 3.0, 3.1$ GHz
Load Mismatch Stability	VSWR-S	-	1.5:1	-	$V_{CC}=36$ V, $P_{IN}=3.0$ W, $F=2.9, 3.0, 3.1$ GHz

## Broadband Test Fixture Impedances

F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
2.90	33 - j18.0	13.3 - j8.3
3.00	30 - j19.0	12.0 - j7.9
3.10	27 - j19.4	10.9 - j7.4



RF Test Fixture



Test Fixture PC Board Dimensions

