

Radar Pulsed Power Transistor, 110W, 100μs Pulse, 10% Duty 2.7 - 2.9 GHz

PH2729-110M

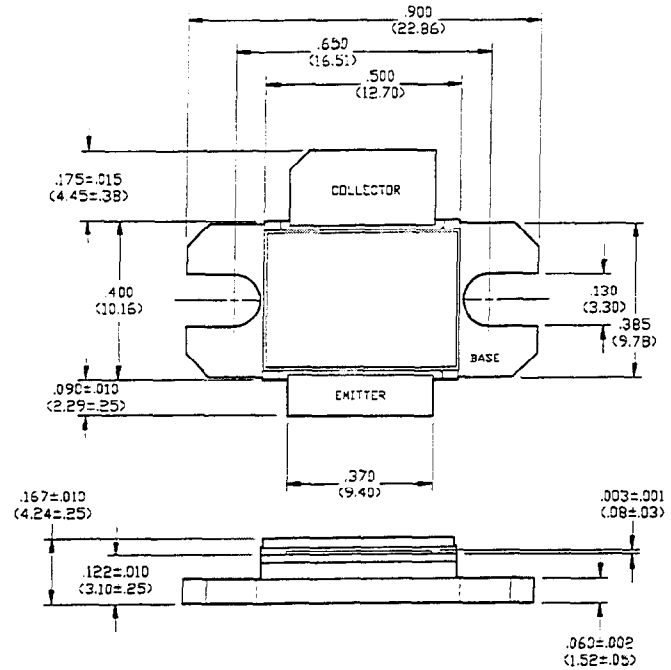
V2.00

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	15.0	A
Total Power Dissipation	P_{TOT}	500	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C

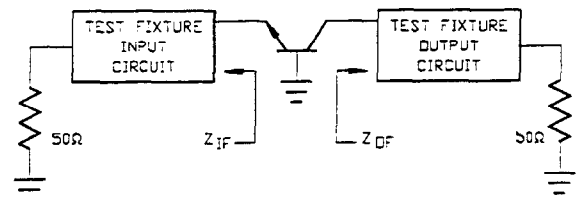


Electrical Characteristics at 25°C

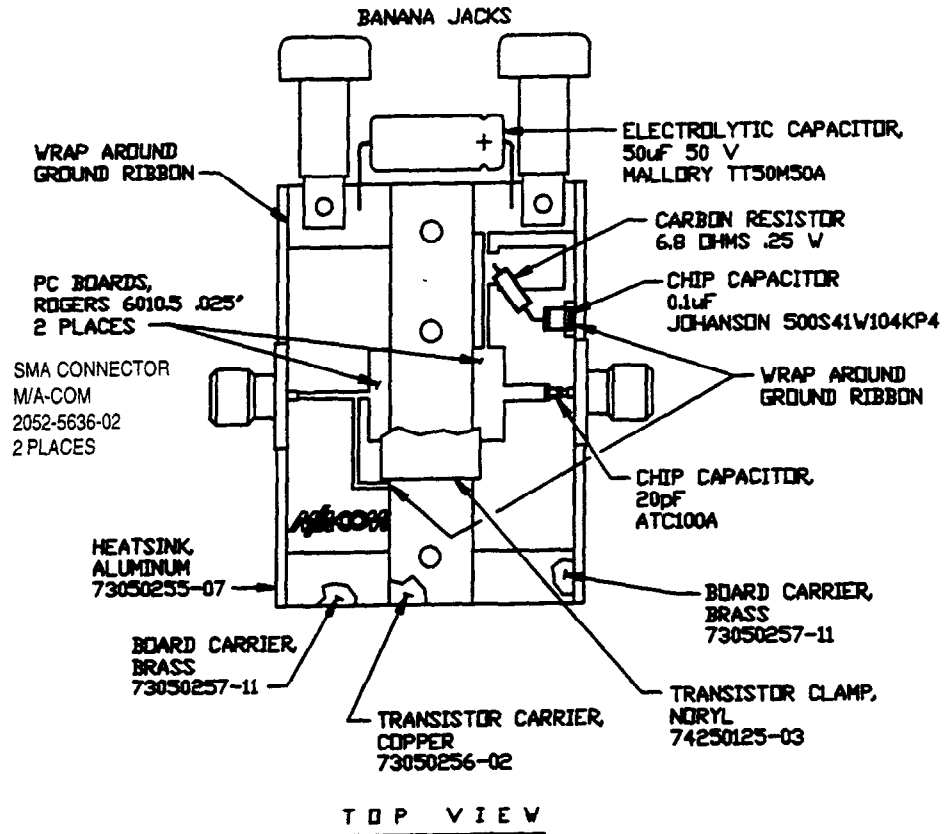
Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	65	-	V	$I_C=40$ mA
Collector-Emitter Leakage Current	I_{CES}	-	7.5	mA	$V_{CE}=36$ V
Thermal Resistance	$R_{TH(JC)}$	-	0.3	°C/W	$V_{CC}=36$ V, $P_{IN}=23$ W, $F=2.7, 2.8, 2.9$ GHz
Output Power	P_{OUT}	110	-	W	$V_{CC}=36$ V, $P_{IN}=23$ W, $F=2.7, 2.8, 2.9$ GHz
Power Gain	G_P	6.8	-	dB	$V_{CC}=36$ V, $P_{IN}=23$ W, $F=2.7, 2.8, 2.9$ GHz
Collector Efficiency	η_C	35	-	%	$V_{CC}=36$ V, $P_{IN}=23$ W, $F=2.7, 2.8, 2.9$ GHz
Input Return Loss	RL	6	-	dB	$V_{CC}=36$ V, $P_{IN}=23$ W, $F=2.7, 2.8, 2.9$ GHz
Overdrive Stability	OD-S	-	1.0	dB	$V_{CC}=36$ V, $P_{IN}=23$ W, $F=2.7, 2.8, 2.9$ GHz
Load Mismatch Tolerance	VSWR-T	-	2:1	-	$V_{CC}=36$ V, $P_{IN}=23$ W, $F=2.7, 2.8, 2.9$ GHz
Load Mismatch Stability	VSWR-S	-	1.5:1	-	$V_{CC}=36$ V, $P_{IN}=23$ W, $F=2.7, 2.8, 2.9$ GHz

Broadband Test Fixture Impedances

F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
2.70	4.3 - j7.0	2.6 - j3.9
2.80	4.4 - j6.4	2.8 - j3.5
2.90	4.6 - j5.8	2.9 - j3.1



RF Test Fixture



Test Fixture PC Board Dimensions

