

M/A-COM Radar Pulsed Power Transistor

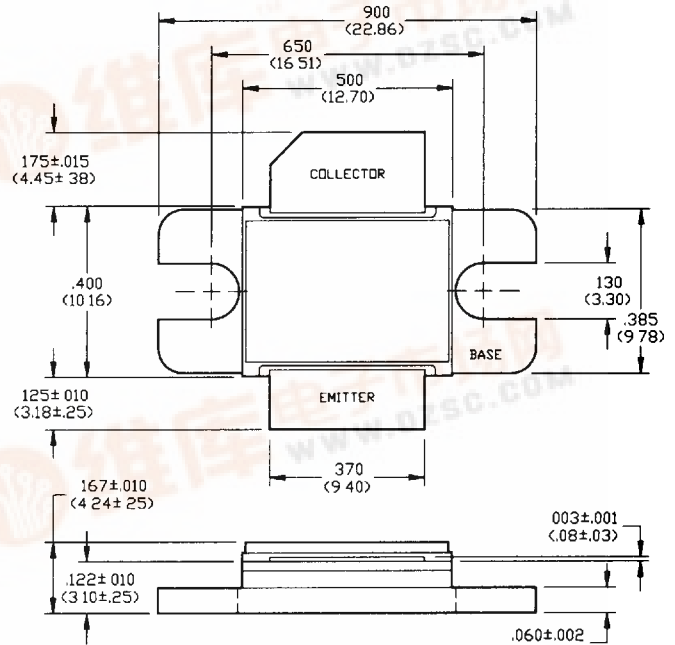
PH2729-180M

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

Features

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

Outline Drawing



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

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	18	A
Power Dissipation	P_D	800	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	$I_C=60$ mA
Collector-Emitter Leakage Current	I_{CES}	-	10	mA	$V_{CE}=36$ V
Thermal Resistance	$R_{TH(JC)}$	-	0.21	°C/W	$V_{CC}=36$ V, $P_{IN}=36$ W, $F=2.7, 2.9$ GHz
Output Power	P_{OUT}	180	-	W	$V_{CC}=36$ V, $P_{IN}=36$ W, $F=2.7, 2.9$ GHz
Input Return Loss	RL	6	-	dB	$V_{CC}=36$ V, $P_{IN}=36$ W, $F=2.7, 2.9$ GHz
Power Gain	G_p	7.0	-	dB	$V_{CC}=36$ V, $P_{IN}=36$ W, $F=2.7, 2.9$ GHz
Collector Efficiency	η_c	35	-	%	$V_{CC}=36$ V, $P_{IN}=36$ W, $F=2.7, 2.9$ GHz
Overdrive Stability	OD-S	-	1.0	dB	$V_{CC}=36$ V, $P_{IN}=36$ W, $F=2.7, 2.9$ GHz
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=36$ V, $P_{IN}=36$ W, $F=2.7, 2.9$ GHz
Load Mismatch Stability	VSWR-S	-	2:1	-	$V_{CC}=36$ V, $P_{IN}=36$ W, $F=2.7, 2.9$ GHz

Broadband Test Fixture Impedances

F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
2.70	TBD	TBD
2.80	TBD	TBD
2.90	TBD	TBD

