

Radar Pulsed Power Transistor, 100W, 2ms Pulse, 20% Duty 1.2 - 1.4 GHz

PH1214-100EL

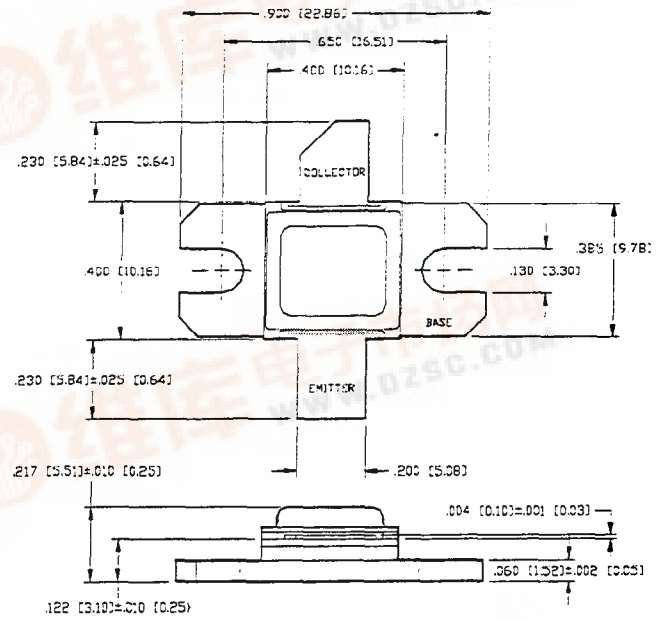
V2.01

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 Impedance Matching
- Hermetic Metal/Ceramic Package

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	75	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current (Peak)	I_C	14.1	A
Total Power Dissipation	P_{TOT}	214	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +200	°C



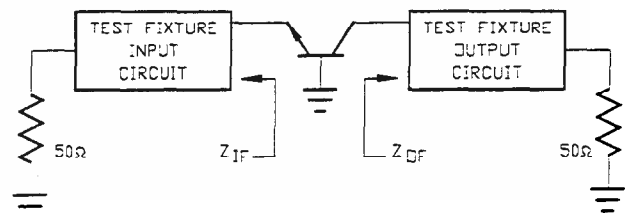
UNLESS OTHERWISE NOTED, TOLERANCES ARE
INCHES ±0.005" (MILLIMETERS ±0.13MM)

Electrical Characteristics at 25°C

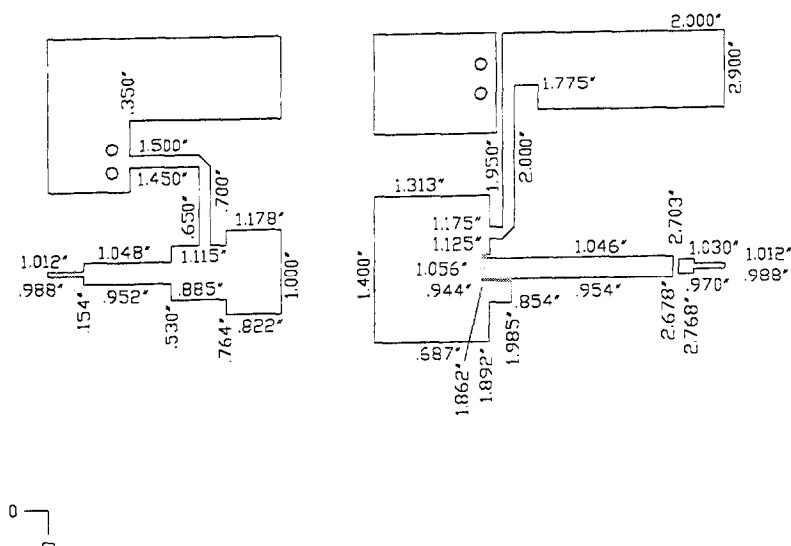
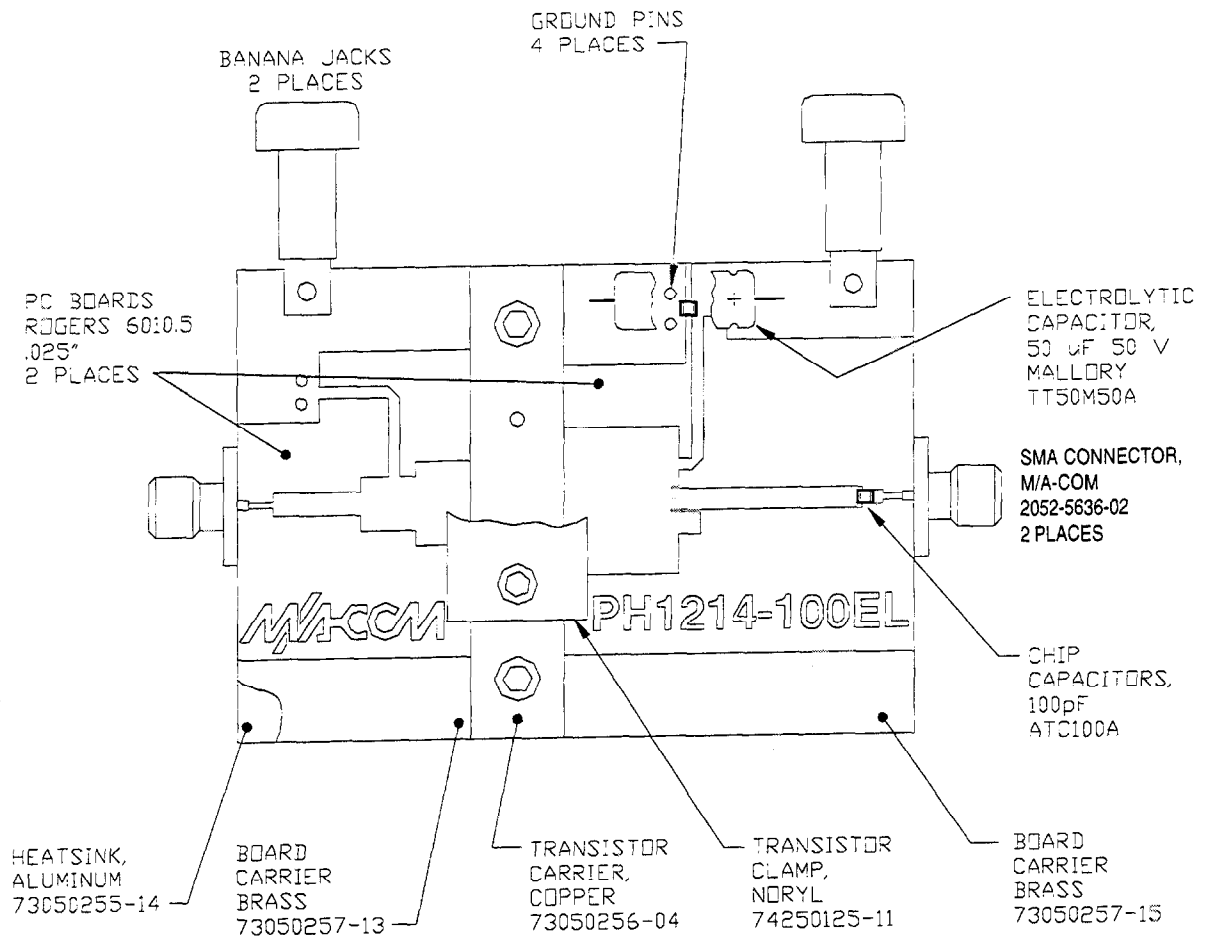
Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	75	-	V	$I_C=50$ mA
Collector-Emitter Leakage Current	I_{CES}	-	10	mA	$V_{CE}=28$ V
Thermal Resistance	$R_{TH(JC)}$	-	0.7	°C/W	$V_{CC}=28$ V, $P_{IN}=25$ W, $F=1.20, 1.30, 1.40$ GHz
Output Power	P_{OUT}	100	-	W	$V_{CC}=28$ V, $P_{IN}=25$ W, $F=1.20, 1.30, 1.40$ GHz
Power Gain	G_P	6.0	-	dB	$V_{CC}=28$ V, $P_{IN}=25$ W, $F=1.20, 1.30, 1.40$ GHz
Collector Efficiency	η_C	52	-	%	$V_{CC}=28$ V, $P_{IN}=25$ W, $F=1.20, 1.30, 1.40$ GHz
Input Return Loss	RL	8	-	dB	$V_{CC}=28$ V, $P_{IN}=25$ W, $F=1.20, 1.30, 1.40$ GHz
Overdrive Stability	OD-S	-	+1.0	dB	$V_{CC}=28$ V, $P_{IN}=25$ W, $F=1.20, 1.30, 1.40$ GHz
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC}=28$ V, $P_{IN}=25$ W, $F=1.20, 1.30, 1.40$ GHz
Load Mismatch Stability	VSWR-S	-	1.5:1	-	$V_{CC}=28$ V, $P_{IN}=25$ W, $F=1.20, 1.30, 1.40$ GHz

Broadband Test Fixture Impedances

F(GHz)	$Z_{IF}(\Omega)$	$Z_{OF}(\Omega)$
1.20	$2.6 - j3.8$	$3.0 - j2.7$
1.30	$3.0 - j3.4$	$2.4 - j2.6$
1.40	$3.4 - j3.1$	$1.9 - j2.5$



RF Test Fixture



CIRCUIT DIMENSIONS

Specifications Subject to Change Without Notice.

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