

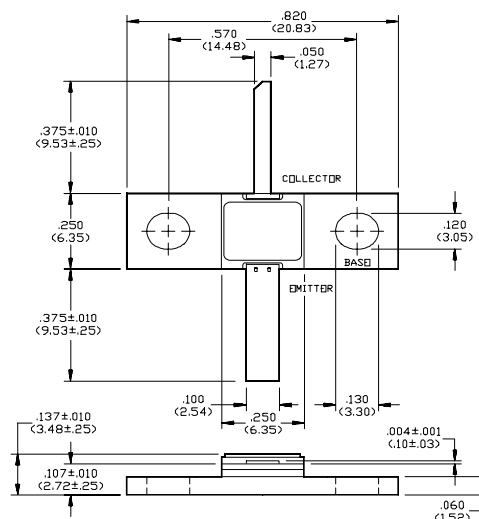
Radar Pulsed Power Transistor - 40 Watts, 1.20-1.40 GHz, 150μs Pulse, 10% Duty



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

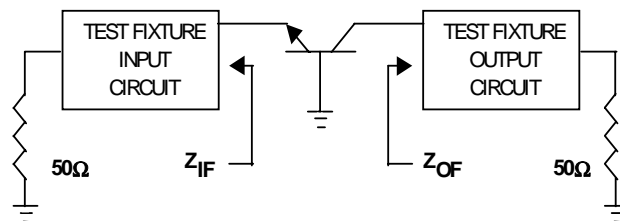
Outline Drawing¹



Notes: (unless otherwise specified)
1. Tolerances are: inches ± .005" (millimeters ± 0.13mm)

Broadband Test Fixture Impedance

f (GHz)	Z _{IF} (Ω)	Z _{OF} (Ω)
1.20	2.6 - j4.7	2.8 - j0.7
1.30	2.5 - j4.1	3.3 - j0.2
1.40	2.3 - j3.7	3.0 + j0.4



Absolute Maximum Rating at 25°C

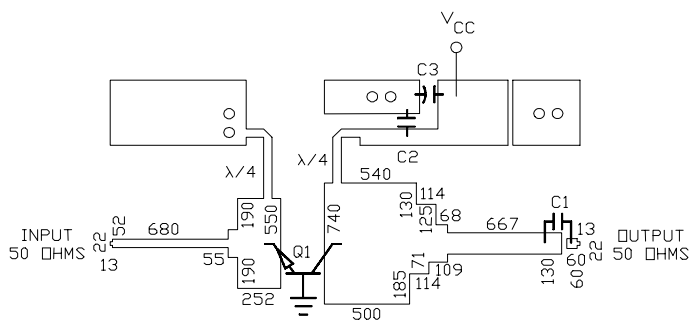
Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V _{CES}	70	V
Emitter-Base Voltage	V _{EBO}	3.0	V
Collector Current (Peak)	I _C	3.0	A
Total Power Dissipation @ +25°C	P _{TOT}	88	W
Storage Temperature	T _{stg}	-65 to +200	°C
Junction Temperature	T _j	200	°C

Electrical Specifications at 25°C

Symbol	Parameter	Test Conditions	Min	Max	Units
BV _{CES}	Collector-Emitter Breakdown	I _C = 15 mA	70	-	V
I _{CES}	Collector-Emitter Breakdown	V _{CE} = 40 V	-	2.0	mA
R _{TH(JC)}	Thermal Resistance	V _{CC} = 40 V, P _{in} = 5.0 - 5.6 W, f = 1.2, 1.3, 1.4 GHz	-	1.7	°C/W
P _O	Output Power	V _{CC} = 40 V, P _{in} = 5.0 - 5.6 W, f = 1.2, 1.3, 1.4 GHz	40	-	W
G _p	Power Gain	V _{CC} = 40 V, P _{in} = 5.0 - 5.6 W, f = 1.2, 1.3, 1.4 GHz	8.5	-	dB
η	Collector Efficiency	V _{CC} = 40 V, P _{in} = 5.0 - 5.6 W, f = 1.2, 1.3, 1.4 GHz	50	-	%
R _L	Input Return Loss	V _{CC} = 40 V, P _{in} = 5.0 - 5.6 W, f = 1.2, 1.3, 1.4 GHz	6	-	dB
VSWR-T	Load Mismatch Tolerance	V _{CC} = 40 V, P _{in} = 5.0 - 5.6 W, f = 1.2, 1.3, 1.4 GHz	-	3:1	-
VSWR-S	Load Mismatch Stability	V _{CC} = 40 V, P _{in} = 5.0 - 5.6 W, f = 1.2, 1.3, 1.4 GHz	-	1.5:1	-

Test Fixture Electrical Schematic¹

Top View



PH1214-40M

Note:

1. Dimensions are in mils.

Electrical Schematic Parts List

C1, C2	100 pF ATC size A
C3	47 uF 63 Volts
Q1	PH1214-40M
Board Type	Rogers 6010.5 .025" Thick, E _R = 10.5