Radar Pulsed Power Transistor, 110 Watts, 2.25-2.55 GHz, 100 μS Pulse, 10% Duty

8/21/02

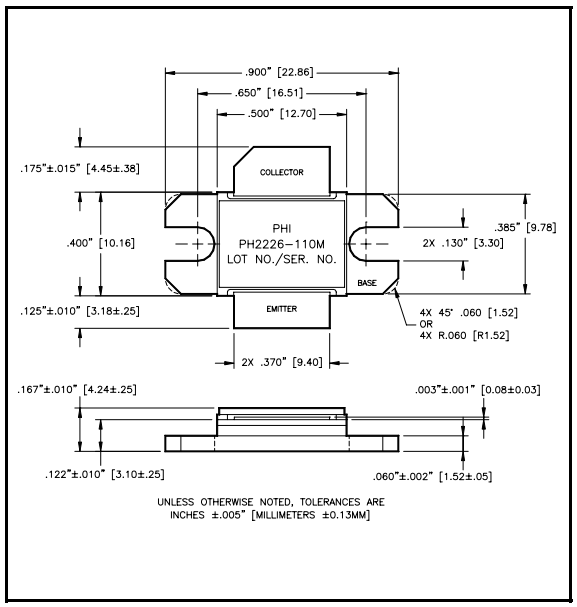
Rev. 3

PH2226-110M

Features

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

Outline Drawing



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	15	A
Total Power Dissipation @ +45 °C	P_{TOT}	583	W
Storage Temperature	T_{STG}	-65 to +200	°C
Junction Temperature	T_j	200	°C

Electrical Characteristics at 25 °C

Parameter	Symbol	Min.	Max.	Units	Test Conditions
Collector-Emitter Breakdown Voltage	BV_{CES}	63	-	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} = 20 W, Freq= 2.25 and 2.55 GHz
Output Power	P_O	110	-	W	V_{CC}=36 V, P_{IN} = 20 W, Freq= 2.25 and 2.55 GHz
Power Gain	G_P	7.4	-	dB	V_{CC}=36 V, P_{IN} = 20 W, Freq= 2.25 and 2.55 GHz
Collector Efficiency	η	40	-	%	V_{CC}=36 V, P_{IN} = 20 W, Freq= 2.25 and 2.55 GHz
Input Return Loss	RL	9	-	dB	V_{CC}=36 V, P_{IN} = 20 W, Freq= 2.25 and 2.55 GHz
Load Mismatch Tolerance	VSWR-T	-	3:1	-	V_{CC}=36 V, P_{IN} = 20 W, Freq= 2.25 and 2.55 GHz
Load Mismatch Stability	VSWR-S	-	1.5:1	-	V_{CC}=36 V, P_{IN} = 20 W, Freq= 2.25 and 2.55 GHz

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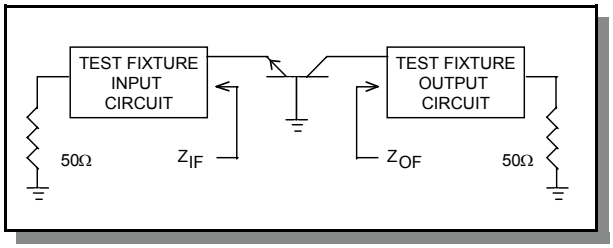
Broadband Test Fixture Impedances



F (GHz)	Z_{IF} (Ω)	Z_{OF} (Ω)
2.25	2.8 –j3.4	4.1 –j2.9
2.40	2.9 –j3.0	3.8 –j2.9
2.55	3.1 –j2.6	3.3 –j2.7

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