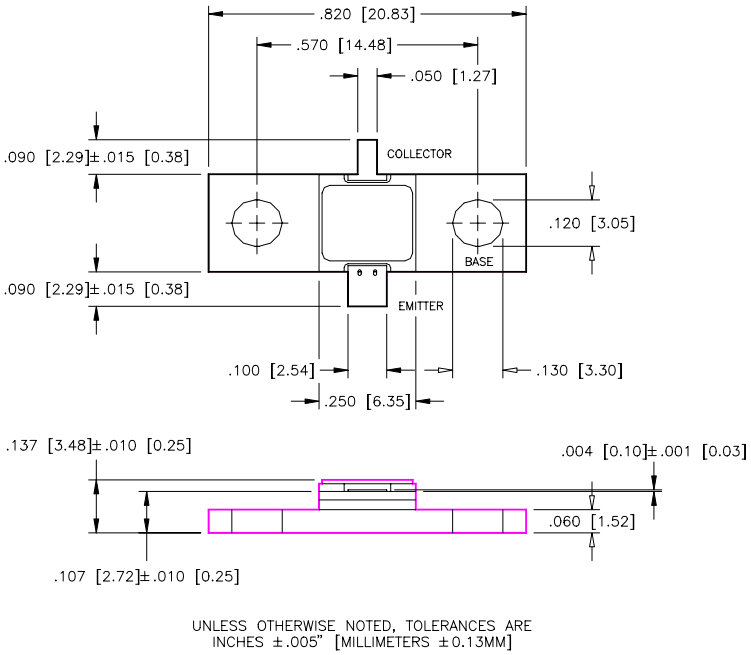
M/A-COM PHI, INC.

PH1090-15L
AVIONICS PULSED POWER TRANSISTOR
15 WATTS, 1030 - 1090 MHz, 250µs PULSE, 10% DUTY

FEATURES

- Designed for Pulsed Avionics Applications
- 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



UNLESS OTHERWISE NOTED, TOLERANCES ARE
INCHES ±.005" [MILLIMETERS ±0.13MM]

ABSOLUTE MAXIMUM RATINGS AT 25°C

Parameter	Symbol	Rating	Units
Collector-Emitter Voltage	V_{CES}	70	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	1	A
Total Power Dissipation	P_D	32	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}	70	-	V	I_C=12.5 mA
Collector-Emitter Leakage Current	I_{CES}	-	2.5	mA	V_{CE}=40 V
Thermal Resistance	$R_{TH(JC)}$	-	3	°C/W	V_{CC}=45 V, P_{out}=15 W, F=1.03, 1.09 GHz
Output Power	P_{OUT}	15	-	W	V_{CC}=45 V, P_{IN}=2 W, F=1.03, 1.09 GHz
Power Gain	G_P	9.0	-	dB	V_{CC}=45 V, P_{out}=15 W, F=1.03, 1.09 GHz
Collector Efficiency	η_C	40	-	%	V_{CC}=45 V, P_{out}=15 W, F=1.03, 1.09 GHz
Input Return Loss	RL	8	-	dB	V_{CC}=45 V, P_{out}=15 W, F=1.03, 1.09 GHz
Load Mismatch Tolerance	VSWR-T	-	3:1	-	V_{CC}=45 V, P_{out}=15 W, F=1.03, 1.09 GHz
Load Mismatch Stability	VSWR-S	-	1.5:1	-	V_{CC}=45 V, P_{out}=15 W, F=1.03, 1.09 GHz

BROADBAND TEST FIXTURE IMPEDANCE

F (MHz)	Z_{IF} (Ω)	Z_{OF} (Ω)
1030	1.7 - j4.5	5.9 + j14.5
1090	1.6 -j4.1	8.3 + j17.7