

Wireless Power Transistor

60 Watts, 1615 - 1685 MHz



Features

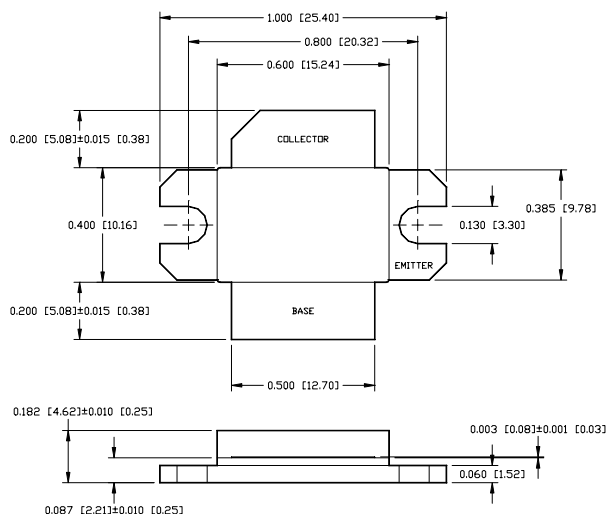
- NPN Silicon Microwave Power Transistor
- Common Emitter Configuration
- Diffused Emitter Ballasting Resistors
- Gold Metalization System
- Internal Input and Output Impedance Matching
- -28 dBc Typical IMD at 60 Watts PEP

Description

M/A-COM's PH1617-60 is a silicon bipolar NPN transistor intended for use as a common emitter class AB stage in power amplifiers that operate in the 1615 to 1685 MHz range. This transistor features internal input and output impedance matching, diffused emitter ballasting and gold metalization.

The PH1617-60 is packaged in a low cost, non-hermetic ceramic package which has very low thermal impedance.

Outline Drawing¹



Notes: (unless otherwise specified)

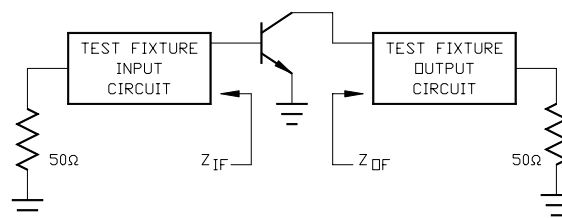
1. Tolerances are: inches ± 0.005" (millimeters ± 0.13mm)

Absolute Maximum Rating at 25°C

Parameter	Symbol	Rating	Units
Collector-Base Voltage	V_{CE0}	20	V
Collector-Emitter Voltage	V_{CES}	65	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	5.8	A
Power Dissipation	P_D	150	W
Storage Temperature	T_{stg}	-50 to +150	°C
Junction Temperature	T_J	200	°C
Thermal Resistance	θ_{jc}	1.0	°C/W

Broadband Test Fixture Impedance

F (MHz)	Z_{IF} (Ω)	Z_{OF} (Ω)
1600	1.5 - j3.6	2.9 - j1.7
1650	1.4 - j3.1	2.9 - j1.1
1700	1.5 - j2.9	3.0 - j0.5

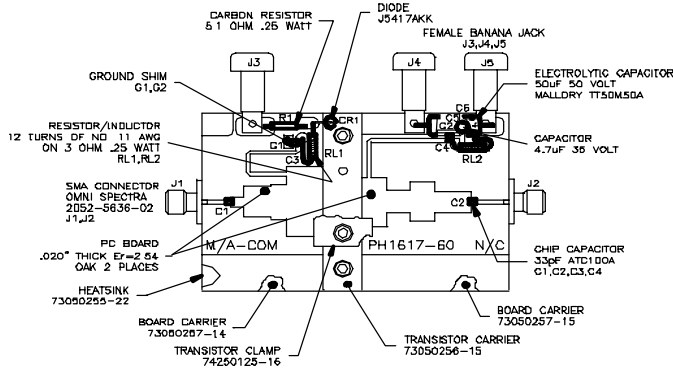


Electrical Specifications at 25°C

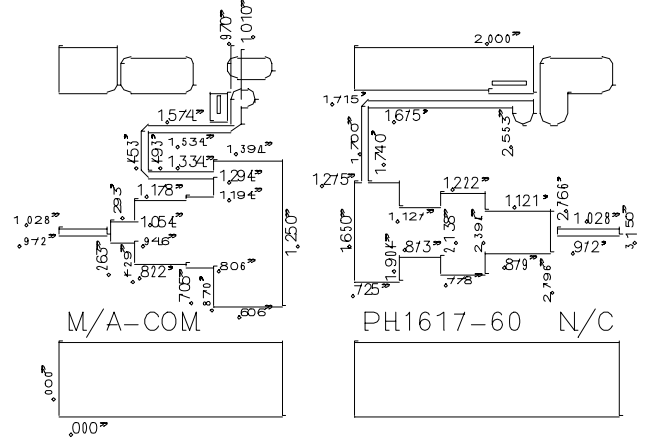
Symbol	Parameter	Test Conditions	Min	Max	Units
h_{FE}	DC Forward Current Gain	$V_{CE} = 5.0$ V, $I_C = 2$ A	15	120	-
G_p	Power Gain	$V_{CC} = 26$ V, $I_{CQ} = 260$ mA, $P_{OUT} = 60$ W, $f = 1615, 1685$ MHz	9.0	-	dB
η_c	Collector Efficiency	$V_{CC} = 26$ V, $I_{CQ} = 260$ mA, $P_{OUT} = 60$ W, $f = 1615, 1685$ MHz	40	-	%
R_L	Input Return Loss	$V_{CC} = 26$ V, $I_{CQ} = 260$ mA, $P_{OUT} = 60$ W, $f = 1615, 1685$ MHz	10	-	dB
VSWR-T	Load Mismatch Tolerance	$V_{CC} = 26$ V, $I_{CQ} = 260$ mA, $P_{OUT} = 60$ W, $f = 1615, 1685$ MHz	-	2:1	-

V2.00

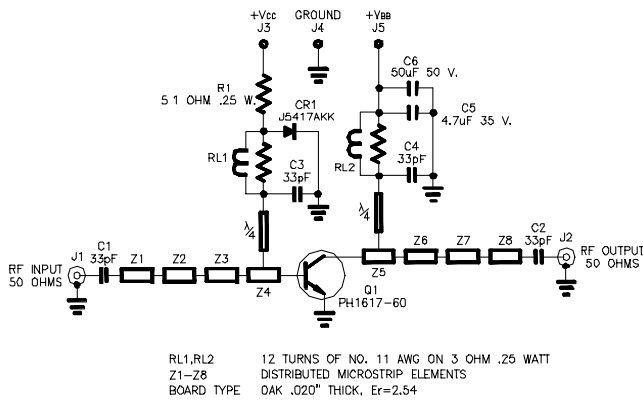
Assembly View



Circuit Dimensions



Schematic



Typical Performance Curve

