



PHA-1110B

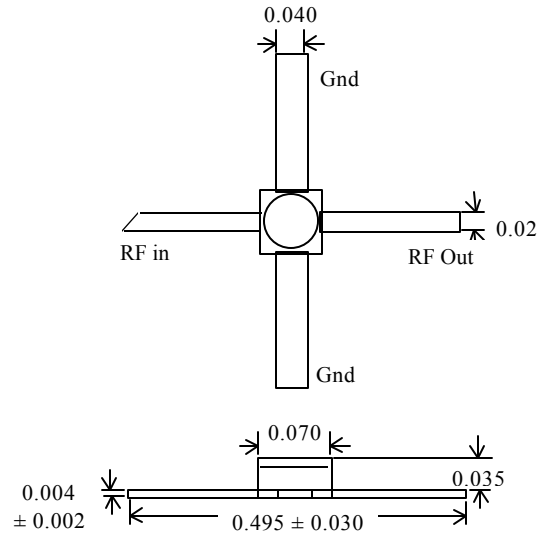
**Cascadable Silicon Bipolar
 MMIC Amplifier**

Description

The PHA-1110B is a high performance silicon bipolar Monolithic Microwave Integrated Circuit (MMIC) housed in a hermetic gold-ceramic 100 mil microstrip package. Designed for high dynamic range in either 50 or 75 Ω systems. Typical applications include narrow and broadband amplifiers.

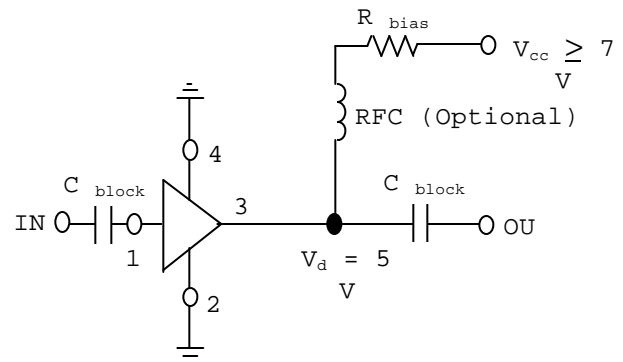
TMS is not the original device manufacturer. TMS procures commercial off the shelf product and UpScreens per the following process flow. For custom screening requirements, Quality Conformance Inspection, or additional electrical selection, please contact TMS.

100 mil Package Dimensions



- NOTES: (Unless otherwise specified)
 1. Dimensions are in inches
 2. Tolerances: X.XXX = ±0.005

Typical Biasing Configuration



Technical Data

PHA-1110B Suggested Maximum Ratings

Parameter	Suggested Maximum ⁽¹⁾
Device Current	90 mA
RF Input Power	+13 dBm
Junction Temperature	+200°C
Storage Temperature	-65 to +200°C

NOTE:

- Permanent damage may occur if any of these limits are exceeded.

Electrical Specifications [1]			-55°C		+25°C		+125°C	
Symbol	Parameters and Test Conditions	Units	Min	Max	Min	Max	Min	Max
G	Gain f = 100 MHz	dB	10.5	14.5	11.5	13.5	10.5	14.5
ΔG_p	Gain Flatness f = 0.1 GHz to 1.0 GHz	dB		±1.5		±1.0		±1.5
P_{1dB}	Output Power at 1 dB Compression f = 1000 MHz	dBm			16.0			
Vd	Device Voltage @ 60 mA	V			4.5	6.5		

NOTE:

1. The recommended operating current range for this device is 40 mA to 75 mA.

TMS UpScreen

Table 1A 100% Screening

Screening Test/Operation	MIL-STD-883 Method	Conditions
Stabilization Bake	1008	Condition C, Ta = +150°C t = 24 hrs.
Temperature Cycling	1010	Condition C, Ta = -65°C to 150°C 20 cycles minimum
Constant Acceleration	2001	30,000G, Y1 axis only, 1 min. hold does not apply
Pre-Burn-in Electrical Test (optional)		+25°C; G, ΔG_p and Vd
Burn-in	1015	Condition B, t = 160 hrs., Ta = +125°C,
Final Electrical Test	-----	+25°C; G, ΔG_p , P_{1dB} and Vd
Percent Defective Allowable (PDA)	-----	5% max.; applies to 25°C Final Electrical Test
Hermeticity - Fine Leak	1014	Condition A
- Gross Leak	1014	Condition C
External Visual	2009	
Group A Inspection +125°C - 55°C	-----	n = 116, r = 1 G, ΔG_p and Vd G, ΔG_p and Vd
Shipment Packaging		10 per strip

Marking: Manufacturer's marking (if applicable) will remain on devices. TMS individual packaging will be labeled with TMS Part Number and manufacturer date code. TMS shipment date code will appear on outer label and C of C. Certificate of Conformance (C of C) will be sent with each shipment. This document provides objective evidence of TMS testing and documents traceability to manufacturers wafer/lot identification.