



PHA-0420B

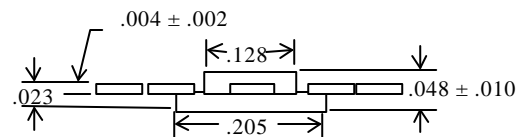
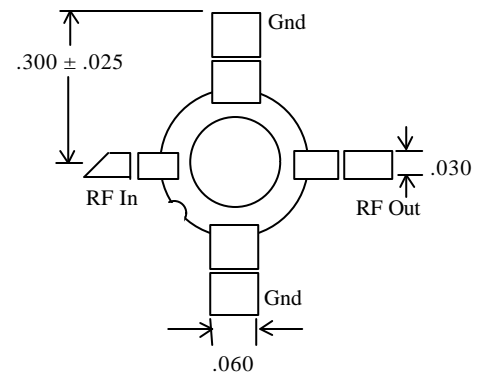
**Cascadable Silicon Bipolar
 MMIC Amplifier**

200 mil BeO Package Dimensions

Description

The PHA-0420B is a high performance silicon bipolar Monolithic Microwave Integrated Circuit (MMIC) housed in a hermetic high reliability 200 mil BeO package. This MMIC is designed for use as a general purpose 50 Ω gain block. Typical applications include narrow and broad band IF and RF amplifiers in industrial and military applications.

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.



Notes:

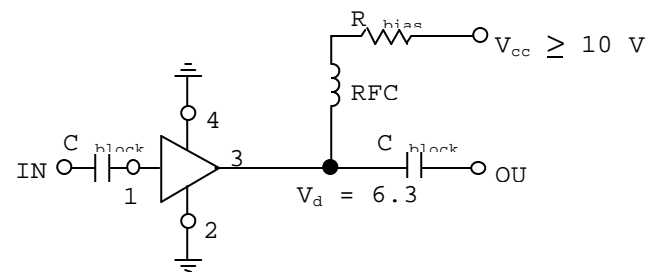
- 1) Tolerances (unless otherwise specified) .xxx ± .005
- 2) Base of package is electrically isolated.

Typical Biasing Configuration

Technical Data

PHA-0420B Suggested Maximum Ratings

Parameter	Suggested Maximum ⁽¹⁾
Device Current	120 mA
RF Input Power	+13 dBm
Junction Temperature	+200°C
Storage Temperature	-65 to +200°C



NOTES:

- 1. 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_p	Gain ($ S_{21} ^2$) f=0.1 GHz	dB	6.5	10.5	7.5	9.5	6.5	10.5
ΔG_p	Gain Flatness f=0.1 to 2.5 GHz	dB		± 1.5		± 1.0		± 1.5
V_d	Device Voltage @ 90mA	V			5.7	7.3		

NOTE:

1. The recommended operating current range for this device is 40 to 110 mA.

TMS UpScreen

Table 2A 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, -65 to +150°C, 10 cycles minimum
Constant Acceleration	2001	Condition E, 30,000 G, Y1 axis only
Pre Burn-in Electrical Test (optional)		+25°C; G_p , ΔG_p , and V_d
Burn-in	1015	Condition B, t= 160 hrs., Ta = +125°C
Final Electrical Test	-----	+25°C; G_p , ΔG_p , and V_d
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_p , V_d and ΔG_p G_p , V_d and ΔG_p
Shipment Packaging		10 units 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.