



PHA-0170B

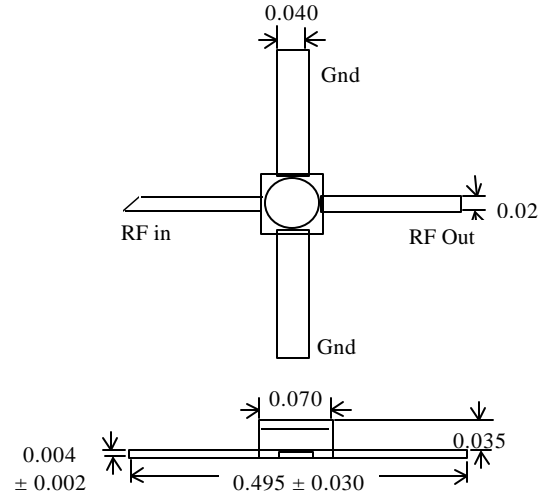
**Cascadable Silicon Bipolar
 MMIC Amplifier**

70 mil Package Dimensions

Description

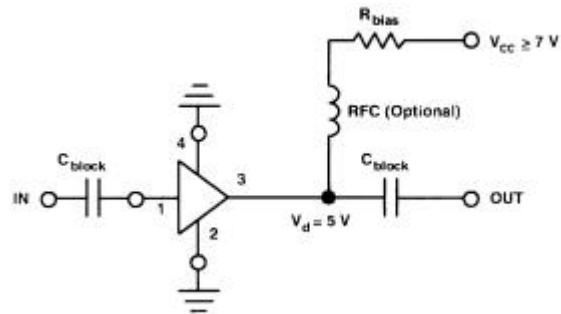
The PHA-0170B is a high performance silicon bipolar Monolithic Microwave Integrated Circuit (MMIC) housed in a hermetic high reliability 70 mil microstrip package. This MMIC is designed for use as a general purpose 50 Ω gain block. Typical applications include narrow and broad band IF and RF amplifiers in industrial and military applications.

VOU is not the original device manufacturer. VO U'r ocures 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 Teledyne O letqy cxg"Uqnwkqpu.



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

Typical Biasing Configuration



Technical Data

PHA-0170B Suggested Maximum Ratings

Parameter	Absolute Maximum ⁽¹⁾
Device Current	40 mA
RF Input Power	+13 dBm
Junction Temperature	+200°C
Storage Temperature	-65 to +200°C

NOTE:

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

Electrical Specification [1]			-55°C		+25°C		+125°C	
Symbol	Parameters and Test Conditions	Units	Min	Max	Min	Max	Min	Max
G_p	Power Gain ($ S_{21} ^2$) $f=0.1$ GHz	dB	14.0	21.0	18.0	20.0	14.0	21.0
ΔG_p	Gain Flatness $f=0.1-0.7$ GHz	dB		1.7		1.0		1.7
V_d	Device Voltage @ 17 mA	V	3.0	7.0	4.5	5.5	3.0	7.0

NOTE:

- The recommended operating current range for this device is 13 to 25 mA.

Teledyne Oletqy c'xg'Uq'w'k'q'p'u UpScreen

Table 2A 100% Screening

Screening Test/Operation	MIL-STD-883 Method	Conditions
Stabilization Bake	1008	Condition C, $T_a = +150^\circ\text{C}$ $t = 24$ hrs.
Temperature Cycling	1010	Condition C, -65 to $+150^\circ\text{C}$, 10 cycles minimum
Constant Acceleration	2001	Condition E, 30,000 G, Y1 axis only
Pre Burn-in Electrical Test (optional)		$+25^\circ\text{C}$; G_p , ΔG_p and V_d
Burn-in	1015	Condition B, $t = 160$ hrs., $T_a = +125^\circ\text{C}$
Final Electrical Test	-----	$+25^\circ\text{C}$; 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 $+125^\circ\text{C}$ -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. VO U individual packaging will be labeled with VO U Part Number and manufacturer date code. VO U 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 Cougar testing and documents traceability to manufacturers wafer/lot identification.