



PHA-02170B

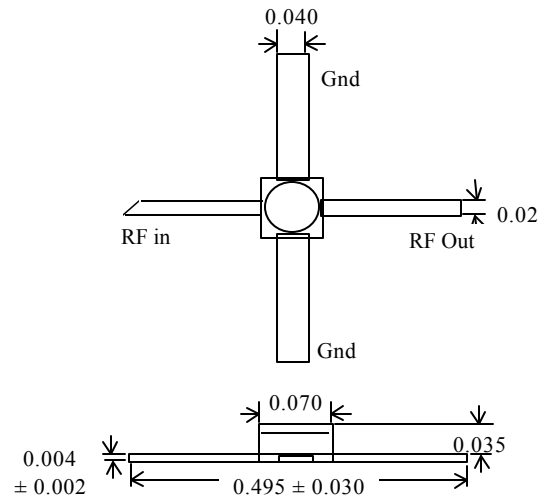
**Cascadable Silicon Bipolar
 MMIC Amplifier**

70 mil Package Dimensions

Description

The PHA-02170B is a low noise silicon bipolar Monolithic Microwave Integrated Circuit (MMIC) feedback amplifier housed in a hermetic high reliability 70 mil microstrip package. This MMIC is designed for narrow or wide bandwidth industrial and military applications that require high gain amplification.

VO U is not the original device manufacturer. VO U 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 TO U.



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

Technical Data

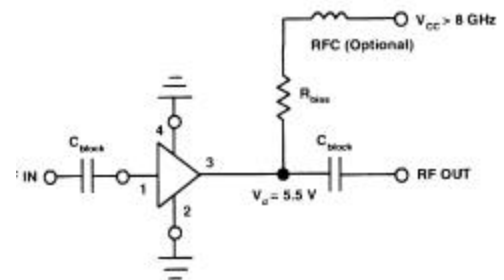
PHA-02170B Suggested Maximum Ratings

| Parameter | Suggested Maximum ⁽¹⁾ |
|----------------------|----------------------------------|
| Device Current | 50 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.

Typical Biasing Configuration



| Electrical Specifications [1] | | | -55°C | | +25°C | | +125°C | |
|-------------------------------|---|-------|--------|------|-------|------|--------|------|
| Symbol | Parameters and Test Conditions | Units | Min | Max | Min | Max | Min | Max |
| G_p | Small Signal Gain ($ S_{21} ^2$) @ f = .5 GHz | dB | 27.0 | 35.0 | 29.0 | 34.0 | 27.0 | 35.0 |
| NF | Noise Figure @ f = .5GHz | dB | | | | 2.5 | | |
| V_d | Device Voltage @ 35 mA | V | Record | | 4.0 | 7.0 | Record | |

NOTE:

- The recommended operating current range for this device is 30 to 40 mA.

Teledyne Cougar 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 , NF and V_d |
| Burn-in | 1015 | Condition B, t= 160 hrs., Ta = +125°C |
| Final Electrical Test | ----- | +25°C; G_p , NF 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 $G_{p, Vd}$ G_{p2}, Vd |
| 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.