



**PHA-0770B**

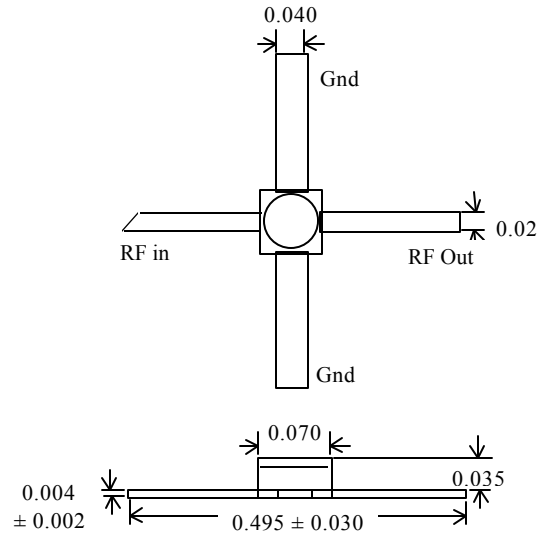
**Cascadable Silicon Bipolar  
 MMIC Amplifier**

**Description**

The PHA-0770B 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.

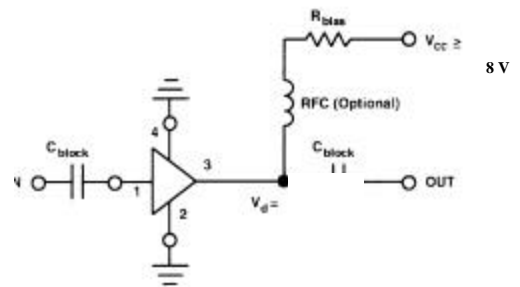
TMS is not the original device manufacturer. TMS procures commercial off the shelf product and UpScreens per the following process flow. For custom screening requirements, Quality Conformance Inspection, or additional electrical selection, please contact TMS.

**70 mil Package Dimensions**



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

**Typical Biasing Configuration**



**Technical Data**

**PHA-0770B Suggested Maximum Ratings**

Parameter	Suggested Maximum <sup>(1)</sup>
Device Current	60 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 Specifications [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	11.2	15.5	12.2	14.5	11.2	15.5
$\Delta G_p$	Gain Flatness f=0.1 to 1.5 GHz	dB		$\pm 1.5$		$\pm 1.1$		$\pm 1.5$
$V_d$	Device Voltage @ 22 mA	V	2.5	5.5	3.6	4.6	2.5	5.5

NOTE:

1. The recommended operating current range for this device is 15 to 40 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; $G_p$ , $\Delta G_p$ and $V_d$
Burn-in	1015	Condition B, t= 160 hrs., Ta = +125°C
Final Electrical Test	-----	+25°C; $G_p$ , $\Delta G_p$ 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 $\Delta G_p$ $G_p$ , $V_d$ and $\Delta G_p$
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.