TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

PHA-0270B

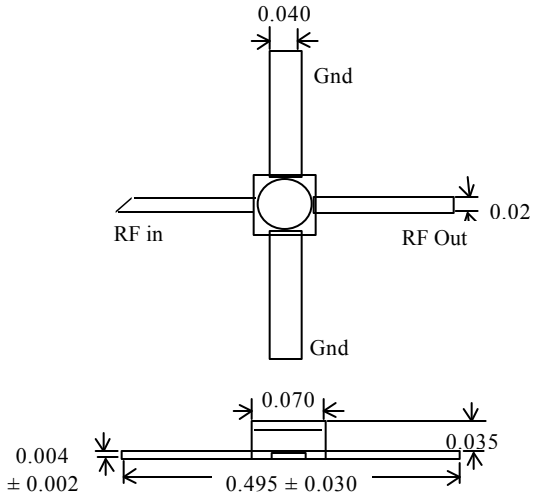
Cascadable Silicon Bipolar MMIC Amplifier

Description

The PHA-0270B 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

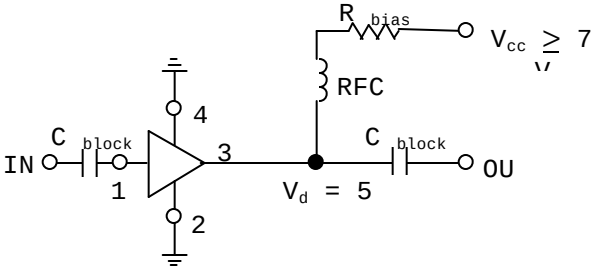
Technical Data

PHA-0270B Suggested Maximum Ratings

Parameter	Suggested Maximum [1]
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.

Typical Biasing Configuration



Avnet MTS (formerly PSElect), 6321 San Ignacio Ave., San Jose, CA 95119, Tel 1-408-360-4000, Fax 1-408-281-8802

	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	10.0	15.0	11.0	14.0	10.0	15.0
ΔG_P	Gain Flatness f = 0.1 to 1.8 GHz	dB		±1.2		±1.0		±1.2
V_d	Device Voltage @ 25 mA	V	3.3	6.5	4.5	5.5	3.3	6.5

NOTE:
1. The recommended operating current range for this device is 18 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; Gp, ΔGp and Vd
Burn-in	1015	Condition B, t = 160 hrs., Ta = +125°C
Final Electrical Test	-----	+25°C; Gp, ΔGp and Vd
Percent Defective Allowable (PDA)		5% max.; applies to 25°C Final Electrical Test
Hermeticity Fine Leak Gross Leak	 1014 1014	 Condition A Condition C
External Visual	2009	
Group A Inspection +125°C -55 °C		n = 116, r = 1 G_p, Vd and ΔG_p G_p, Vd 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.