



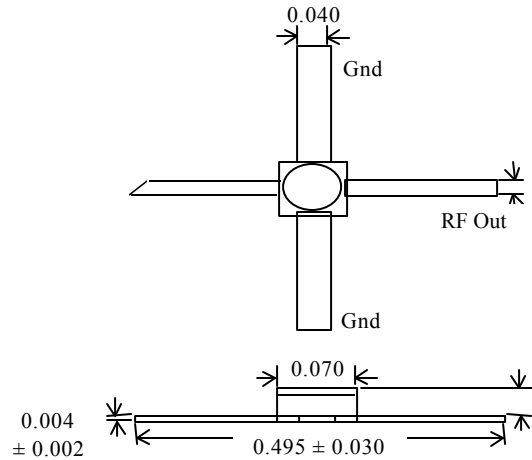
Cascadable Silicon Bipolar MMIC Amplifier

Description

The PHA-0870B is a high performance silicon bipolar Monolithic Microwave Integrated Circuit (MMIC) housed in a hermetic 70 mil microstrip package. This product is designed for use as a general purpose 50 Ω gain block above 0.5 GHz and can be used as a high gain transistor below this frequency. Typical applications include narrow and moderate 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

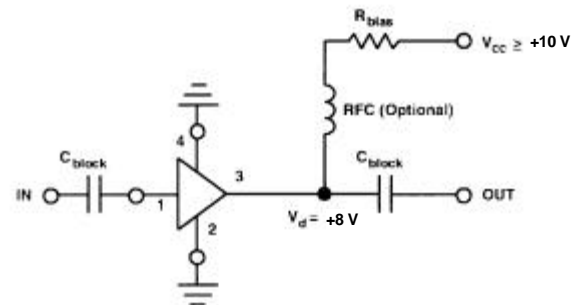
PHA-0870B Suggested Maximum Ratings

Parameter	Suggested Maximum ⁽¹⁾
Device Current	80 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	Power Gain ($ S_{21} ^2$) f = 1.0 GHz f = 4.0 GHz	dB	20.0	27.0	22.0	25.0	20.0	27.0
			5.5	13.5	9.5	12.0	5.5	13.5
V _d	Device Voltage @ 36 mA	V	5.0	11.0	7.0	8.6	5.0	11.0

NOTE:

1. The recommended operating current range for this device is 20 to 40A.

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 and V _d
Burn-in	1015	Condition B, t= 160 hrs., Ta= +125°C
Final Electrical Test	-----	+25°C; 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		n = 116, r = 1
+125°C		G _p , V _d
-55 °C		G _p , V _d
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 manufacture wafer/lot identification.