

# 2SC5081

Silicon NPN Epitaxial

# HITACHI

ADE-208-1133A (Z)  
2nd. Edition  
Mar. 2001

## Application

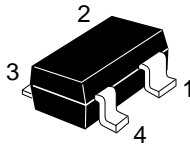
VHF / UHF wide band amplifier

## Features

- High gain bandwidth product  
 $f_T = 13.5 \text{ GHz Typ}$
- High gain, low noise figure  
 $PG = 18 \text{ dB Typ}$ ,  $NF = 1.1 \text{ dB Typ}$  at  $f = 900 \text{ MHz}$

## Outline

CMPAK-4



1. Collector
2. Emitter
3. Base
4. Emitter

Note: Marking is "ZD-".

Attention: This device is very sensitive to electro static discharge.

It is recommended to adopt appropriate cautions when handling this transistor.

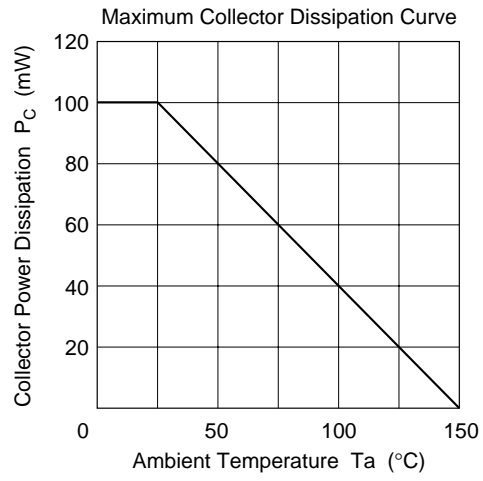
**Absolute Maximum Ratings** ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{\text{CBO}}$	15	V
Collector to emitter voltage	$V_{\text{CEO}}$	8	V
Emitter to base voltage	$V_{\text{EBO}}$	1.5	V
Collector current	$I_{\text{C}}$	50	mA
Collector power dissipation	$P_{\text{C}}$	100	mW
Junction temperature	$T_{\text{j}}$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	15	—	—	V	$I_{\text{C}} = 10 \mu\text{A}$ , $I_{\text{E}} = 0$
Collector cutoff current	$I_{\text{CBO}}$	—	—	1	$\mu\text{A}$	$V_{\text{CB}} = 12 \text{ V}$ , $I_{\text{E}} = 0$
	$I_{\text{CEO}}$	—	—	1	mA	$V_{\text{CE}} = 8 \text{ V}$ , $R_{\text{BE}} = \infty$
Emitter cutoff current	$I_{\text{EBO}}$	—	—	10	$\mu\text{A}$	$V_{\text{EB}} = 1.5 \text{ V}$ , $I_{\text{C}} = 0$
DC current transfer ratio	$h_{\text{FE}}$	50	90	160		$V_{\text{CE}} = 5 \text{ V}$ , $I_{\text{C}} = 20 \text{ mA}$
Collector output capacitance	$C_{\text{ob}}$	—	0.4	0.75	pF	$V_{\text{CB}} = 5 \text{ V}$ , $I_{\text{E}} = 0$ , $f = 1 \text{ MHz}$
Gain bandwidth product	$f_{\text{T}}$	10.5	13.5	—	GHz	$V_{\text{CE}} = 5 \text{ V}$ , $I_{\text{C}} = 20 \text{ mA}$
Power gain	PG	15	18	—	dB	$V_{\text{CE}} = 5 \text{ V}$ , $I_{\text{C}} = 20 \text{ mA}$ , $f = 900 \text{ MHz}$
Noise figure	NF	—	1.1	2.0	dB	$V_{\text{CE}} = 5 \text{ V}$ , $I_{\text{C}} = 5 \text{ mA}$ , $f = 900 \text{ MHz}$

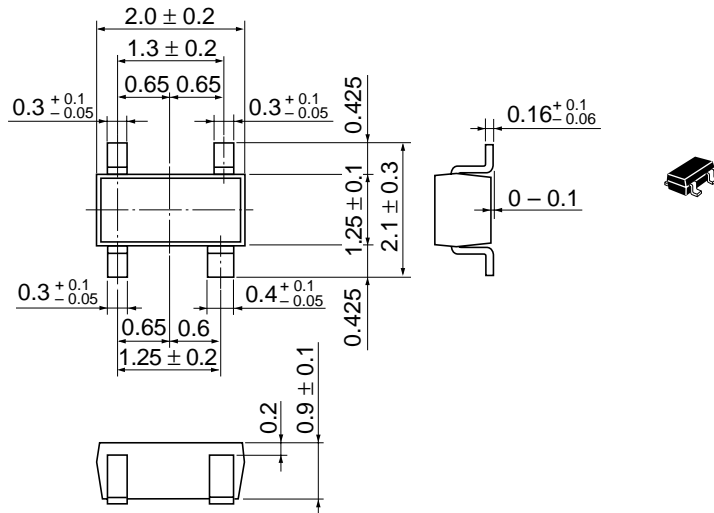
See characteristic curves of 2SC5080.



**Package Dimensions**

As of January, 2001

Unit: mm



Hitachi Code	CMPAK-4(T)
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.006 g

## Cautions

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# HITACHI

## Hitachi, Ltd.

Semiconductor & Integrated Circuits.  
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan  
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL	NorthAmerica	: <a href="http://semiconductor.hitachi.com/">http://semiconductor.hitachi.com/</a>
	Europe	: <a href="http://www.hitachi-eu.com/hel/ecg">http://www.hitachi-eu.com/hel/ecg</a>
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### For further information write to:

Hitachi Semiconductor  
(America) Inc.  
179 East Tasman Drive,  
San Jose, CA 95134  
Tel: <1> (408) 433-1990  
Fax: <1> (408) 433-0223

Hitachi Europe GmbH  
Electronic Components Group  
Dornacher Straße 3  
D-85622 Feldkirchen, Munich  
Germany  
Tel: <49> (89) 9 9180-0  
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.  
Electronic Components Group.  
Whitebrook Park  
Lower Cookham Road  
Maidenhead  
Berkshire SL6 8YA, United Kingdom  
Tel: <44> (1628) 585000  
Fax: <44> (1628) 585160

Hitachi Asia Ltd.  
Hitachi Tower  
16 Collyer Quay #20-00,  
Singapore 049318  
Tel: <65>-538-6533/538-8577  
Fax: <65>-538-6933/538-3877  
URL: <http://www.hitachi.com.sg>

Hitachi Asia Ltd.  
(Taipei Branch Office)  
4/F, No. 167, Tun Hwa North Road,  
Hung-Kuo Building,  
Taipei (105), Taiwan  
Tel: <886>-(2)-2718-3666  
Fax: <886>-(2)-2718-8180  
Telex: 23222 HAS-TP  
URL: <http://www.hitachi.com.tw>

Hitachi Asia (Hong Kong) Ltd.  
Group III (Electronic Components)  
7/F., North Tower,  
World Finance Centre,  
Harbour City, Canton Road  
Tsim Sha Tsui, Kowloon,  
Hong Kong  
Tel: <852>-(2)-735-9218  
Fax: <852>-(2)-730-0281  
URL: <http://www.hitachi.com.hk>

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