Silicon NPN Triple Diffused

# **HITACHI**

### Application

High voltage amplifier TV VIDEO output

### Outline



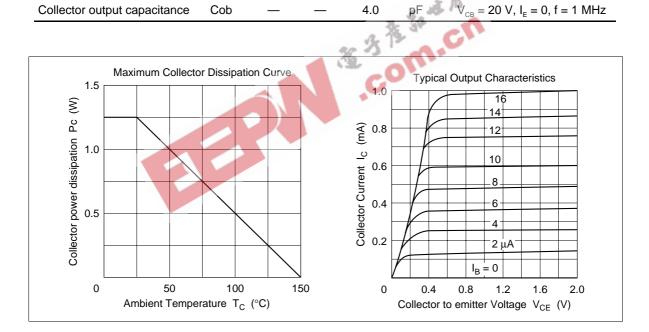
### **Absolute Maximum Ratings** ( $Ta = 25^{\circ}C$ )

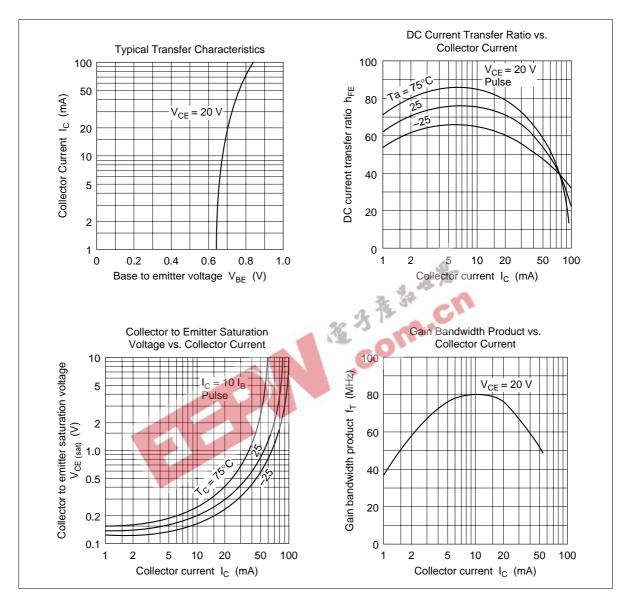
Item	Symbol	Ratings	Unit
Collector to base voltage	V <sub>CBO</sub>	300	V
Collector to emitter voltage	V <sub>CEO</sub>	300	V
Emitter to base voltage	V <sub>EBO</sub>	5	V
Collector current	Ι <sub>c</sub>	100	mA
Collector power dissipation	Pc	1.25	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55 to +150	°C

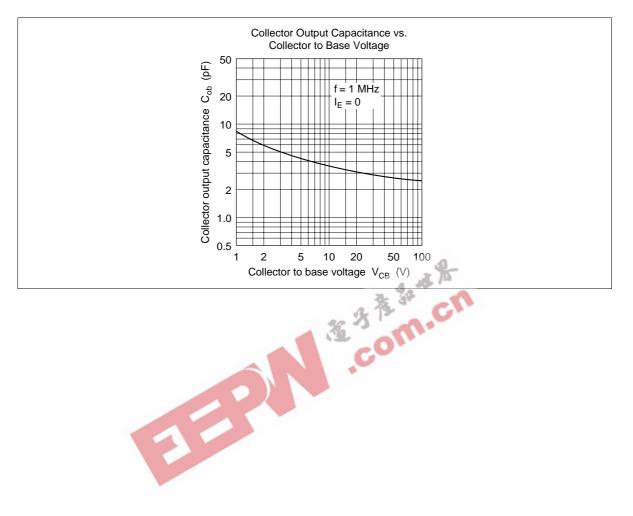


## **Electrical Characteristics** (Ta = $25^{\circ}$ C)

Item	Symbol	Min	Тур	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	300	—	—	V	$I_{c} = 10 \ \mu A, \ I_{E} = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	300	—	—	V	$I_c = 1 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	_	_	V	$I_{\rm E} = 10 \ \mu A, \ I_{\rm C} = 0$
Collector cutoff current	I <sub>CEO</sub>	—	—	1.0	μΑ	$V_{ce}$ = 250 V, $R_{be}$ = $\infty$
DC current transfer ratio	$h_{\text{FE}}$	30	—	200		$V_{ce} = 20 \text{ V}, I_c = 20 \text{ mA}$
Collector to emitter saturation voltage	$V_{\text{CE(sat)}}$	_	—	1.5	V	$I_{c} = 20 \text{ mA}, I_{B} = 2 \text{ mA}$
Gain bandwidth product	f <sub>⊤</sub>	50	80	—	MHz	$V_{ce} = 20 \text{ V}, \text{ I}_{c} = 20 \text{ mA}$
Collector output capacitance	Cob	—	—	4.0	pF	$V_{_{CB}} = 20 \text{ V}, \text{ I}_{_{E}} = 0, \text{ f} = 1 \text{ MHz}$

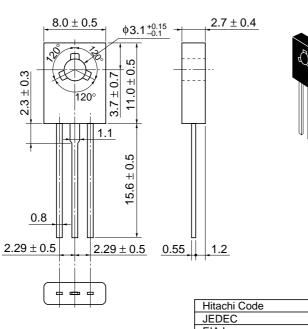






HITACHI





Unit: mm

Hitachi Code	TO-126 Mod
JEDEC	
EIAJ	_
Weight (reference value)	0.67 g

#### Cautions

- 1. Hitachi neither warrants nor grants licenses of any rights of Hitachi's or any third party's patent, copyright, trademark, or other intellectual property rights for information contained in this document. Hitachi bears no responsibility for problems that may arise with third party's rights, including intellectual property rights, in connection with use of the information contained in this document.
- 2. Products and product specifications may be subject to change without notice. Confirm that you have received the latest product standards or specifications before final design, purchase or use.
- 3. Hitachi makes every attempt to ensure that its products are of high quality and reliability. However, contact Hitachi's sales office before using the product in an application that demands especially high quality and reliability or where its failure or malfunction may directly threaten human life or cause risk of bodily injury, such as aerospace, aeronautics, nuclear power, combustion control, transportation, traffic, safety equipment or medical equipment for life support.
- 4. Design your application so that the product is used within the ranges guaranteed by Hitachi particularly for maximum rating, operating supply voltage range, heat radiation characteristics, installation conditions and other characteristics. Hitachi bears no responsibility for failure or damage when used beyond the guaranteed ranges. Even within the guaranteed ranges, consider normally foreseeable failure rates or failure modes in semiconductor devices and employ systemic measures such as failsafes, so that the equipment incorporating Hitachi product does not cause bodily injury, fire or other consequential damage due to operation of the Hitachi product.
- 5. This product is not designed to be radiation resistant.
- 6. No one is permitted to reproduce or duplicate, in any form, the whole or part of this document without written approval from Hitachi.
- 7. Contact Hitachi's sales office for any questions regarding this document or Hitachi semiconductor products.

# ГДС

#### Hitachi, Ltd.

URI

Nippon Bldg., 2-6-2, Otte-machi, Chiyoda-ku, Tokyo 100-0004, Japan Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

Hitachi Europe GmbH

NorthAmerica http:semiconductor.hitachi.com/ http://www.hitachi-eu.com/hel/ecg Europe http://www.has.hitachi.com.sg/grp3/sicd/index.htm http://www.has.hitachi.com.sg/grp3/sicd/index.htm Asia (Singapore) Asia (Taiwan) Asia (HongKong) http://www.hitachi.com.hk/eng/bo/grp3/index.htm http://www.hitachi.co.jp/Sicd/indx.htm

#### Japan

#### 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

Electronic components Group Dornacher Stra§e 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) 778322

Hitachi Asia Pte. Ltd. 16 Collyer Quay #20-00 Hitachi Tower Singapore 049318 Tel: 535-2100 Fax: 535-1533

Hitachi Asia Ltd Taipei Branch Office 3F, Hung Kuo Building. No.167 Tun-Hwa North Road, Taipei (105) Tel: <886> (2) 2718-3666 Fax: <886> (2) 2718-8180

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 Telex: 40815 HITEC HX

Copyright ' Hitachi, Ltd., 1999. All rights reserved. Printed in Japan.