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# 2SD1163, 2SD1163A

Silicon NPN Triple Diffused

# HITACHI

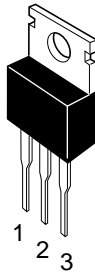
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## Application

TV horizontal deflection output

## Outline

TO-220AB



1. Base
2. Collector  
(Flange)
3. Emitter

# 2SD1163, 2SD1163A

## Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating			Unit
		2SD1163	2SD1163A		
Collector to base voltage	$V_{CBO}$	300	350		V
Collector to emitter voltage	$V_{CEO}$	120	150		V
Emitter to base voltage	$V_{EBO}$	6	6		V
Collector current	$I_C$	7	7		A
Collector peak current	$I_{C(peak)}$	10	10		A
Collector surge current	$I_{C(surge)}$	20	20		A
Collector power dissipation	$P_C^{*1}$	40	40		W
Junction temperature	$T_j$	150	150		°C
Storage temperature	$T_{stg}$	-55 to +150	-55 to +150		°C

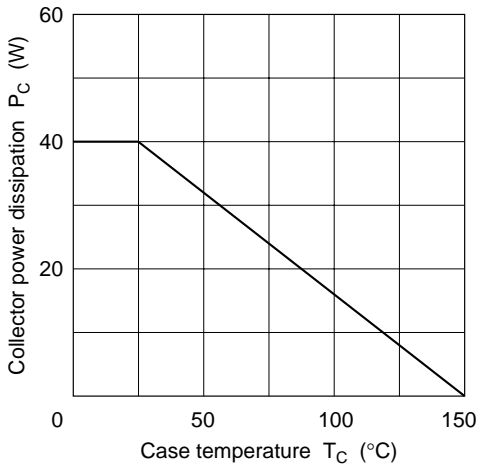
Note: 1. Value at  $T_C = 25^\circ\text{C}$ .

## Electrical Characteristics (Ta = 25°C)

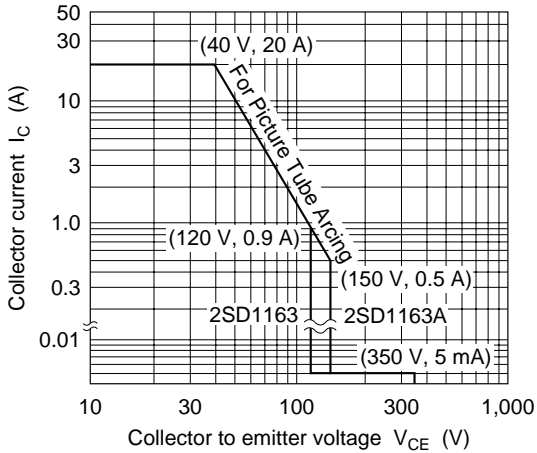
Item	Symbol	2SD1163			2SD1163A			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max		
Collector cutoff current	$I_{CBO}$	—	—	5	—	—	—	mA	$V_{CB} = 300\text{ V}, I_E = 0$
		—	—	—	—	—	5	mA	$V_{CB} = 350\text{ V}, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	120	—	—	150	—	—	V	$I_C = 10\text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	6	—	—	6	—	—	V	$I_E = 10\text{ mA}, I_C = 0$
DC current transfer ratio	$h_{FE}$	25	—	—	25	—	—		$V_{CE} = 5\text{ V}, I_C = 5\text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	2.0	—	—	1.0	V	$I_C = 5\text{ A}, I_B = 0.5\text{ A}^{*1}$
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	1.2	—	—	1.2	V	$I_C = 5\text{ A}, I_B = 0.5\text{ A}^{*1}$
Fall time	$t_f$	—	—	0.5	—	—	0.5	μs	$I_{CP} = 3.5\text{ A}, I_{B1} = 0.45\text{ A}$

Note: 1. Pulse test.

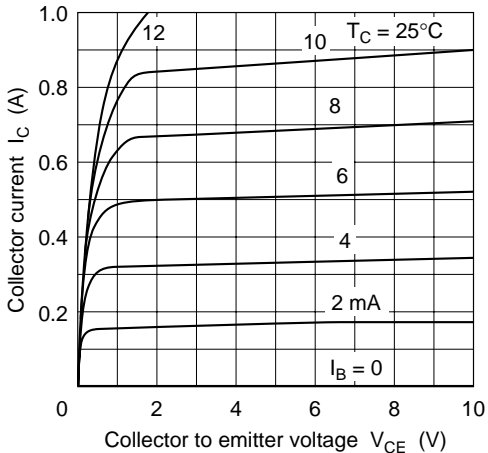
Maximum Collector Dissipation Curve



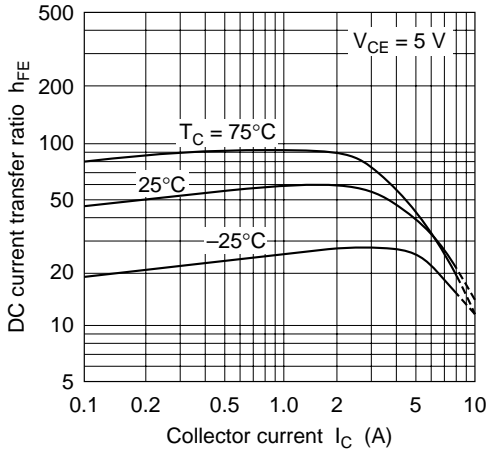
Area of Safe Operation

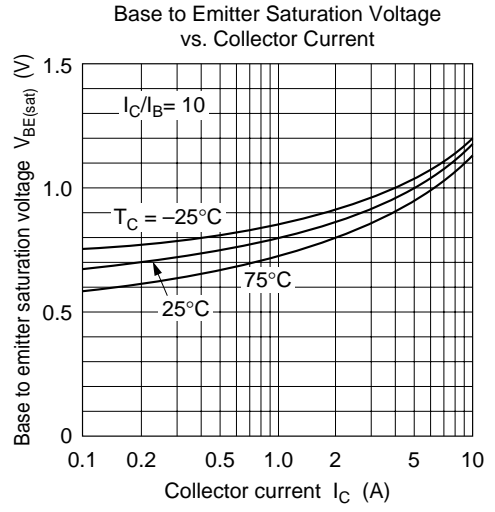
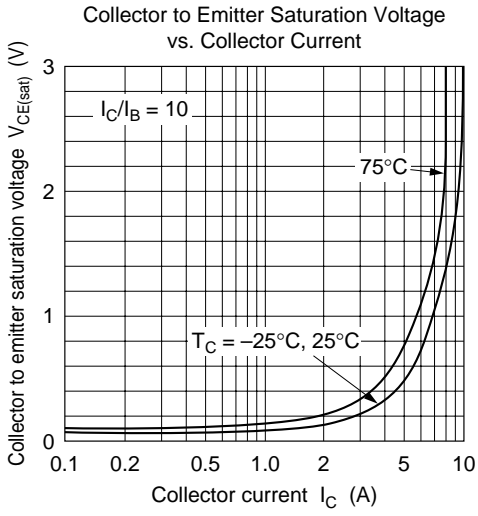


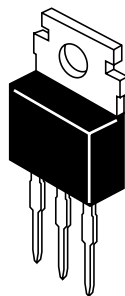
Typical Output Characteristics



DC Current Transfer Ratio vs. Collector Current







Hitachi Code	TO-220AB
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	1.8 g

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## 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      North America      : <http://semiconductor.hitachi.com/>  
             Europe                : <http://www.hitachi-eu.com/hel/ecg>  
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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) 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

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