

To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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Not recommended
for new design

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Renesas Technology Home Page: <http://www.renesas.com>

Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

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2SD1163, 2SD1163A

Silicon NPN Triple Diffused

RENESAS

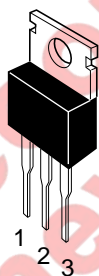
ADE-208-909 (Z)
1st. Edition
September 2000

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	Tj	150	150	°C
Storage temperature	Tstg	-55 to +150	-55 to +150	°C

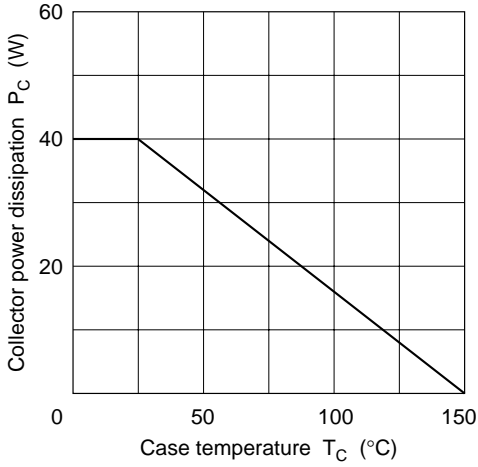
Note: 1. Value at $T_C = 25^\circ\text{C}$.

Electrical Characteristics (Ta = 25°C)

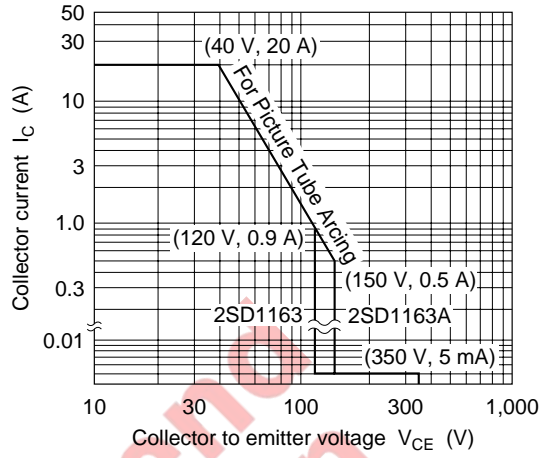
Item	Symbol	2SD1163			2SD1163A			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max		
Collector cutoff current	I_{CBO}	—	—	5	—	—	—	mA	$V_{CB} = 300\text{ V}, I_E = 0$
		—	—	—	—	—	5		$V_{CB} = 350\text{ V}, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	120	—	—	150	—	—	V	$I_C = 10\text{ mA}, R_{BE} = \infty$
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.

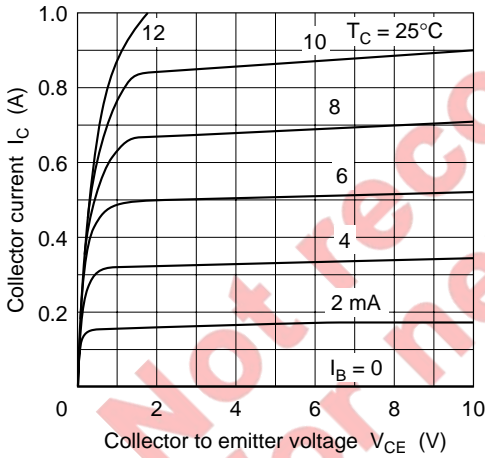
Maximum Collector Dissipation Curve



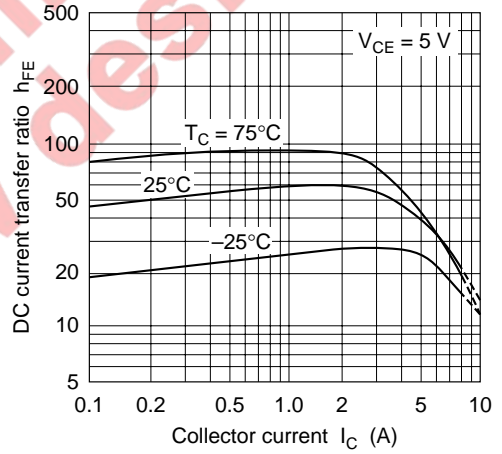
Area of Safe Operation

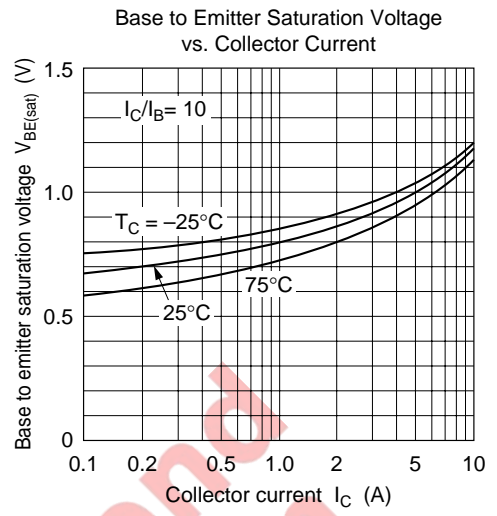
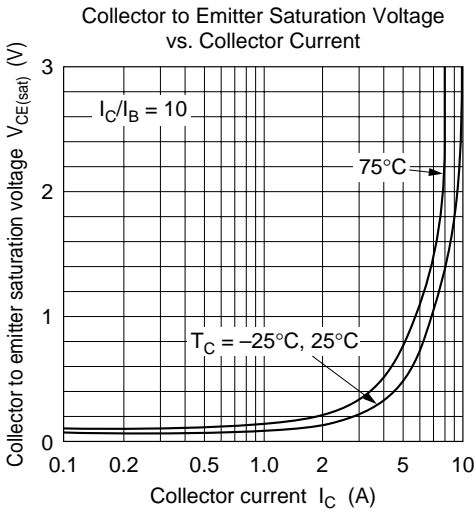


Typical Output Characteristics



DC Current Transfer Ratio vs. Collector Current





Not recommended for new design

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