To all our customers

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

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Keep safety first in your circuit designs!

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   Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of nonflammable material or (iii) prevention against any malfunction or mishap.

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2SD1163, 2SD1163A

Silicon NPN Triple Diffused

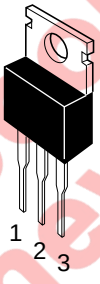
ADE-208-909 (Z)
1st. Edition
September 2000

Application

TV horizontal deflection output

Outline

TO-220AB



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

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

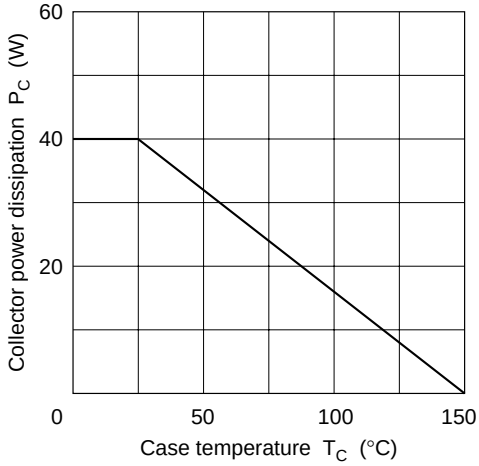
Note: 1. Value at T_C = 25°C.

Electrical Characteristics (Ta = 25°C)

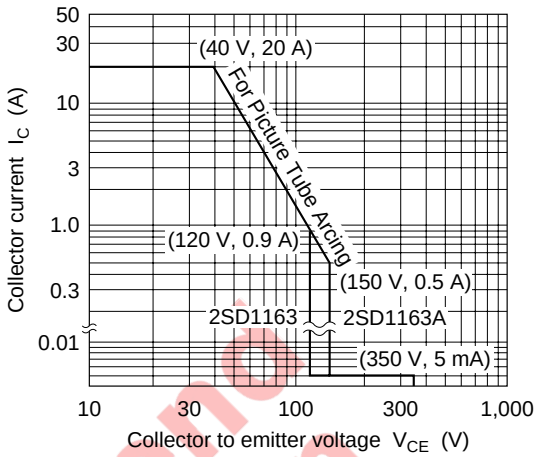
Item	Symbol	2SD1163			2SD1163A			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max		
Collector cutoff current	I_{CBO}	—	—	5	—	—	—	mA	V_{CB} = 300 V, I_E = 0
		—	—	—	—	—	5	mA	V_{CB} = 350 V, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	120	—	—	150	—	—	V	I_C = 10 mA, R_{BE} = ∞
Emitter to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

Note: 1. Pulse test.

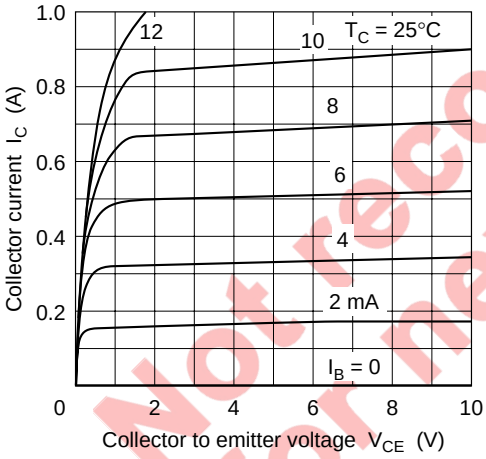
Maximum Collector Dissipation Curve



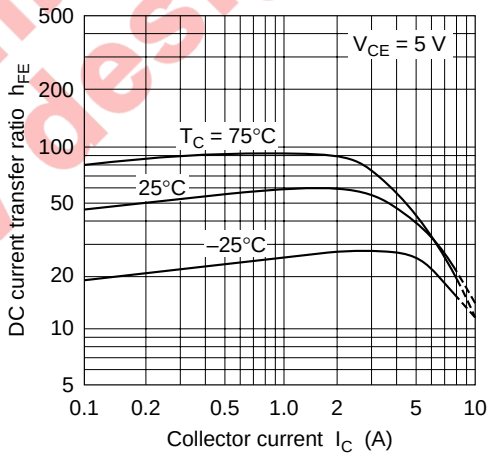
Area of Safe Operation



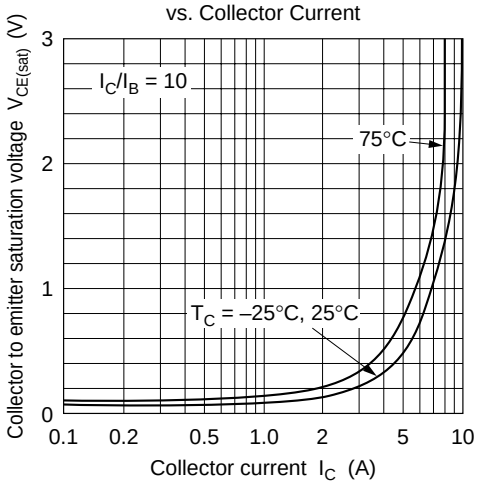
Typical Output Characteristics



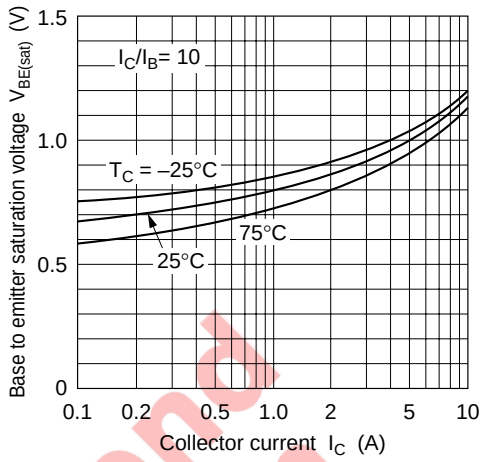
DC Current Transfer Ratio vs. Collector Current



Collector to Emitter Saturation Voltage vs. Collector Current



Base to Emitter Saturation Voltage vs. Collector Current



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