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# 2SD1136

Silicon NPN Triple Diffused

## HITACHI

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### Application

Power switching TV horizontal deflection output

### Outline

TO-220AB



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

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

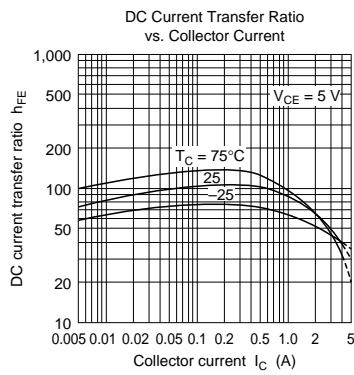
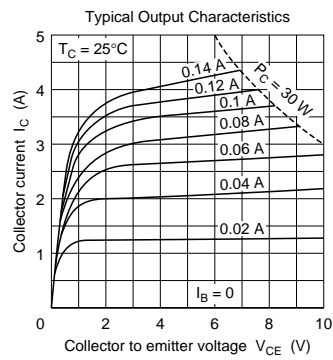
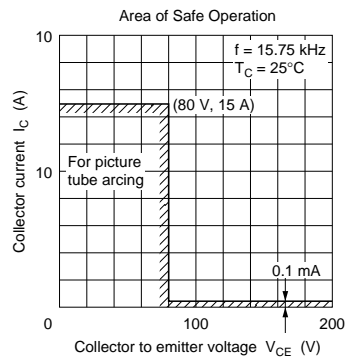
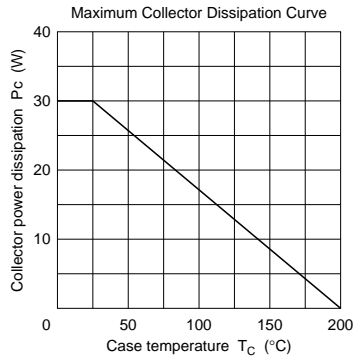
Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	200	V
Collector to emitter voltage	$V_{CEO}$	80	V
Emitter to base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	4	A
Collector peak current	$I_{C(peak)}$	5	A
Collector surge current	$I_{C(surge)}$	15	A
Collector power dissipation	$P_C$	1.8	W
	$P_C^{*1}$	30	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-45 to +150	°C

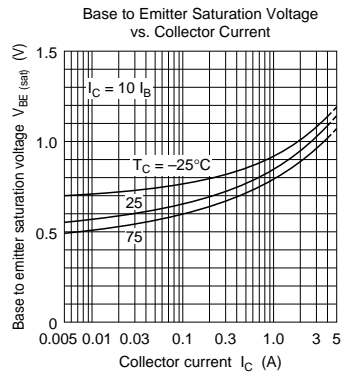
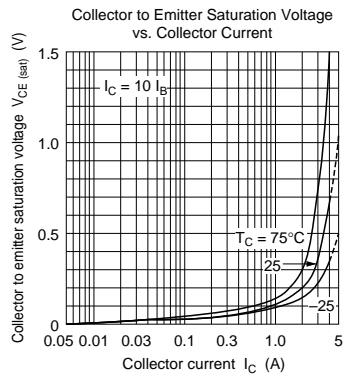
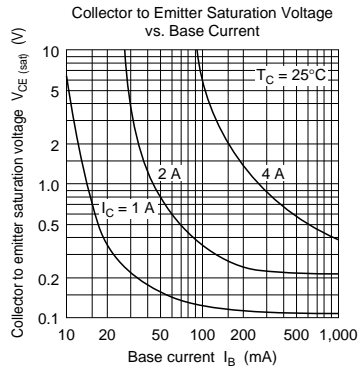
Note: 1. Value at  $T_C = 25^\circ\text{C}$ .

### Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	200	—	—	V	$I_C = 1\text{ mA}$ , $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	80	—	—	V	$I_C = 10\text{ mA}$ , $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	$I_E = 1\text{ mA}$ , $I_C = 0$
Collector cutoff current	$I_{CES}$	—	—	1.0	mA	$V_{CE} = 150\text{ V}$ , $R_{BE} = 0$
DC current transfer ratio	$h_{FE}$	20	—	—		$V_{CE} = 5\text{ V}$ , $I_C = 4\text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.5	V	$I_C = 4\text{ A}$ , $I_B = 0.4\text{ A}^{*1}$
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	1.5	V	$I_C = 4\text{ A}$ , $I_B = 0.4\text{ A}^{*1}$
Fall time	$t_f$	—	—	1.0	$\mu\text{s}$	$I_C = 3.5\text{ A}$ , $I_{B1} = 0.45\text{ A}$ , $L_B = 0$

Note: 1. Pulse test.





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