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# 2SD991(K)

Silicon NPN Triple Diffused

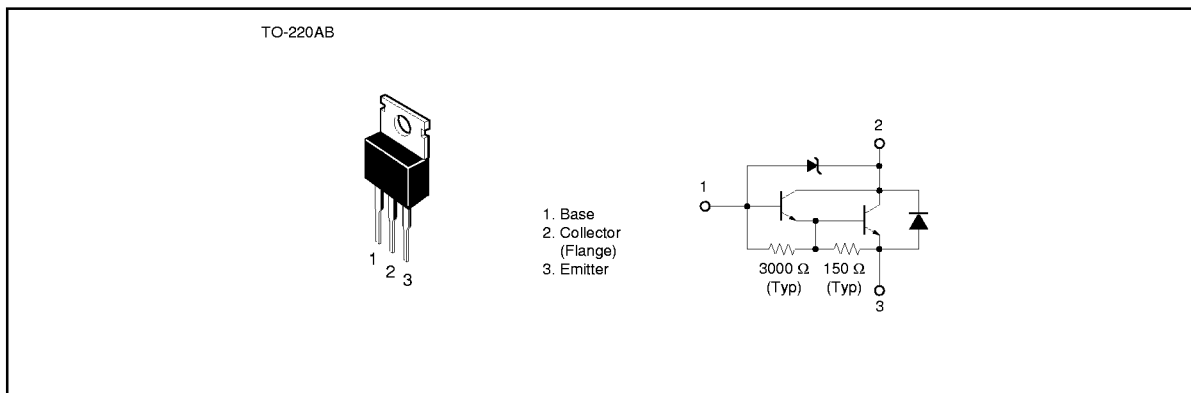
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### Application

High voltage switching, igniter

### Outline



### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	300	V
Collector to emitter voltage	$V_{CEO}$	300	V
Emitter to base voltage	$V_{EBO}$	7	V
Collector current	$I_C$	6	A
Collector peak current	$I_{C(\text{peak})}$	10	A
Collector power dissipation	$P_C^{*1}$	50	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

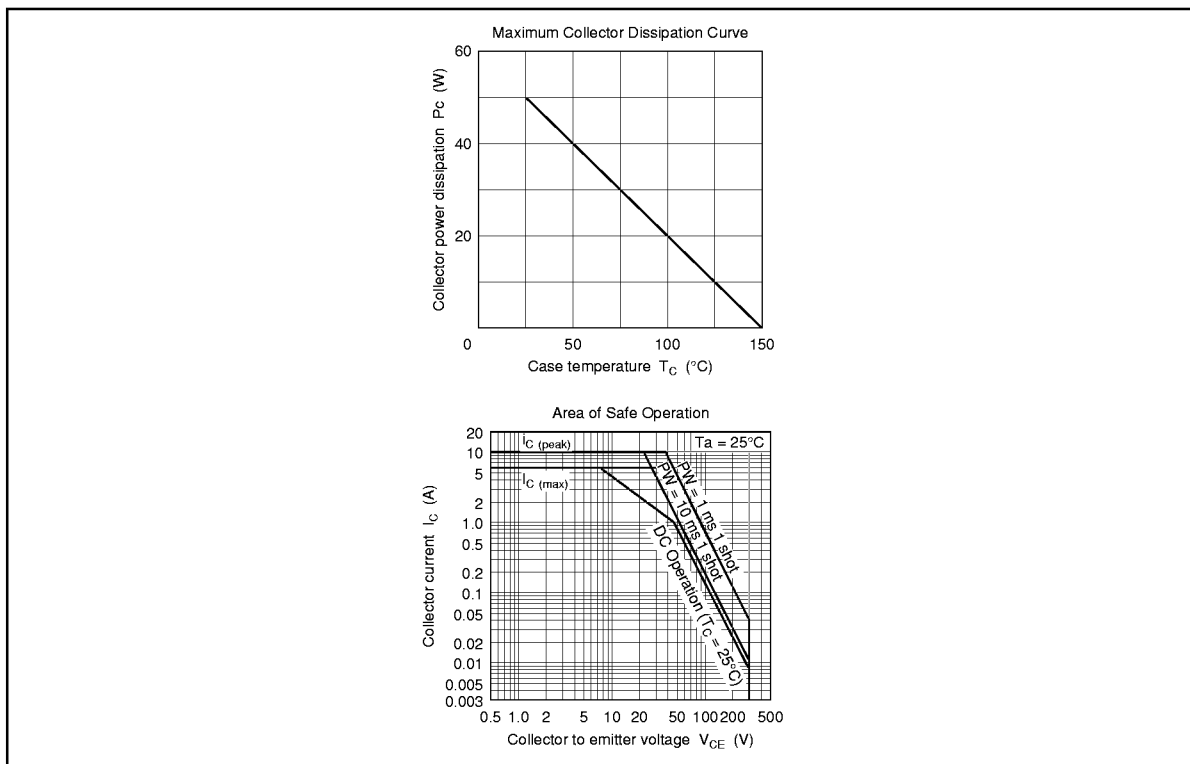
Note: 1. Value at  $T_c = 25^\circ\text{C}$ .

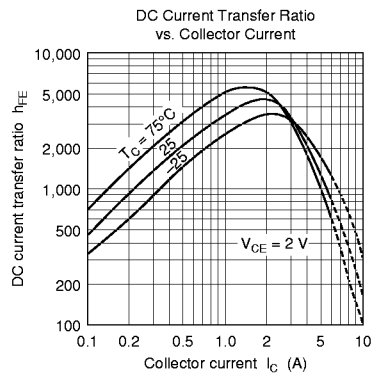
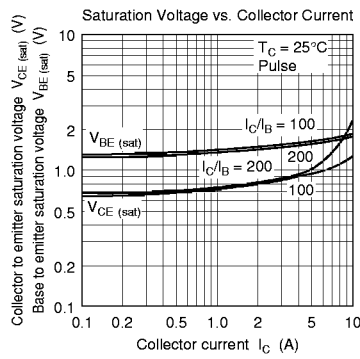
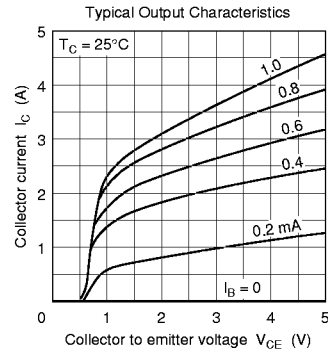
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### Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	300	—	500	V	$I_C = 0.1 \text{ mA}, I_E = 0$
Collector to emitter sustain voltage	$V_{CE(sus)}$	300	—	—	V	$I_C = 4 \text{ A}, PW = 50 \mu\text{s}, f = 50\text{Hz}, L = 10 \text{ mH}$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	$I_E = 100 \text{ mA}, I_C = 0$
		—	—	—	V	$I_E = 50 \text{ mA}, I_C = 0$
Collector cutoff current	$I_{CEO}$	—	—	100	$\mu\text{A}$	$V_{CE} = 300 \text{ V}, R_{BE} = \_$
DC current transfer ratio	$h_{FE}$	500	—	—		$V_{CE} = 2 \text{ V}, I_C = 4 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.5	V	$I_C = 4 \text{ A}, I_B = 40 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	2.0	V	
Turn on time	$t_{on}$	—	2.0	—	$\mu\text{s}$	$I_C = 4 \text{ A}, I_{B1} = -I_{B2} = 40 \text{ mA}$
Turn off time	$t_{off}$	—	23	—	$\mu\text{s}$	

Note: 1. Pulse test.





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