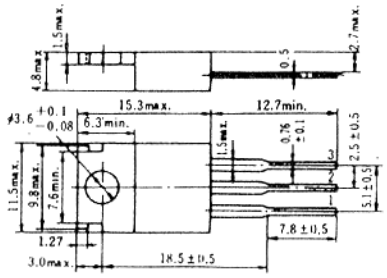
HITACHI

2SD991Ⓚ

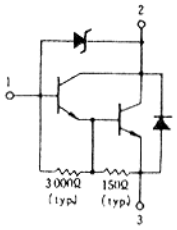
SILICON NPN TRIPLE DIFFUSED

HIGH VOLTAGE SWITCHING, IGNITER



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

(Dimensions in mm)



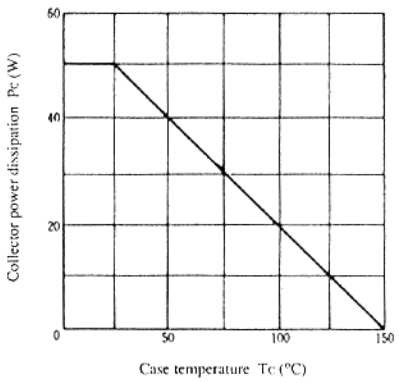
(JEDEC TO-220AB)

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SD991Ⓚ	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	$i_{C(peak)}$	10	A
Collector power dissipation	P_C*	50	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

* Value at T_C = 25°C.

MAXIMUM COLLECTOR DISSIPATION CURVE

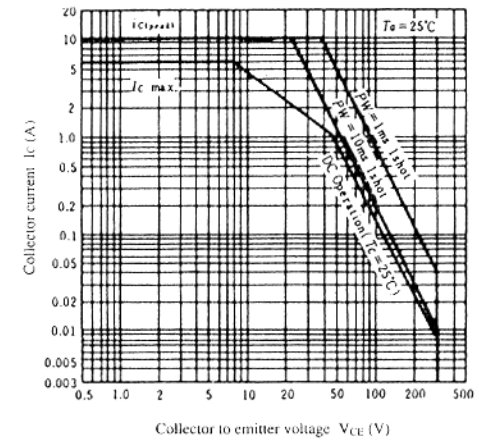


■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

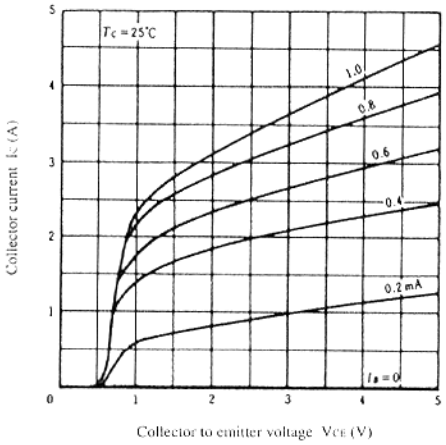
Item	Symbol	Test Condition	min.	typ.	max.	Unit
Collector to base breakdown voltage	$V_{(BR)CBO}$	I_C = 0.1mA, I_E = 0	300	—	500	V
Collector to emitter sustain voltage	$V_{CEO(sus)}$	I_C = 4A, PW = 50μs, f = 50Hz, L = 10mH	300	—	—	V
Emitter to base breakdown voltage	$V_{(BR)EBO}$	I_E = 100mA, I_C = 0	7	—	—	V
		I_E = 50mA, I_C = 0	—	—	—	V
Collector cutoff current	I_{CEO}	V_{CE} = 300V, R_{BE} = ∞	—	—	100	μA
DC current transfer ratio	h_{FE}	V_{CE} = 2V, I_C = 4A*	500	—	—	
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 4A, I_B = 40mA*	—	—	1.5	V
Base to emitter saturation voltage	$V_{BE(sat)}$		—	—	2.0	V
Turn on time	t_{on}	I_C = 4A, I_{B1} = −I_{B2} = 40mA	—	2.0	—	μs
Turn off time	t_{off}		—	23	—	μs

* Pulse Test.

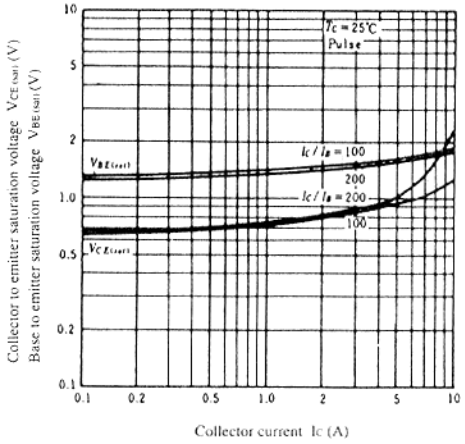
AREA OF SAFE OPERATION



TYPICAL OUTPUT CHARACTERISTICS



SATURATION VOLTAGE VS. COLLECTOR CURRENT



DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT