

2SD970(K)

Silicon NPN Triple Diffused

HITACHI

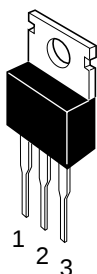
ADE-208-901 (Z)
1st. Edition
Sep. 2000

Application

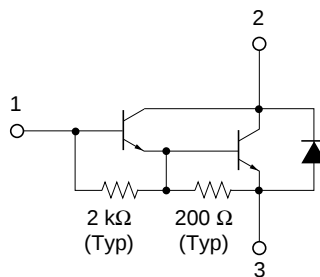
Medium speed and power switching complementary pair with 2SB791(K)

Outline

TO-220AB



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



Absolute Maximum Ratings (Ta = 25°C)

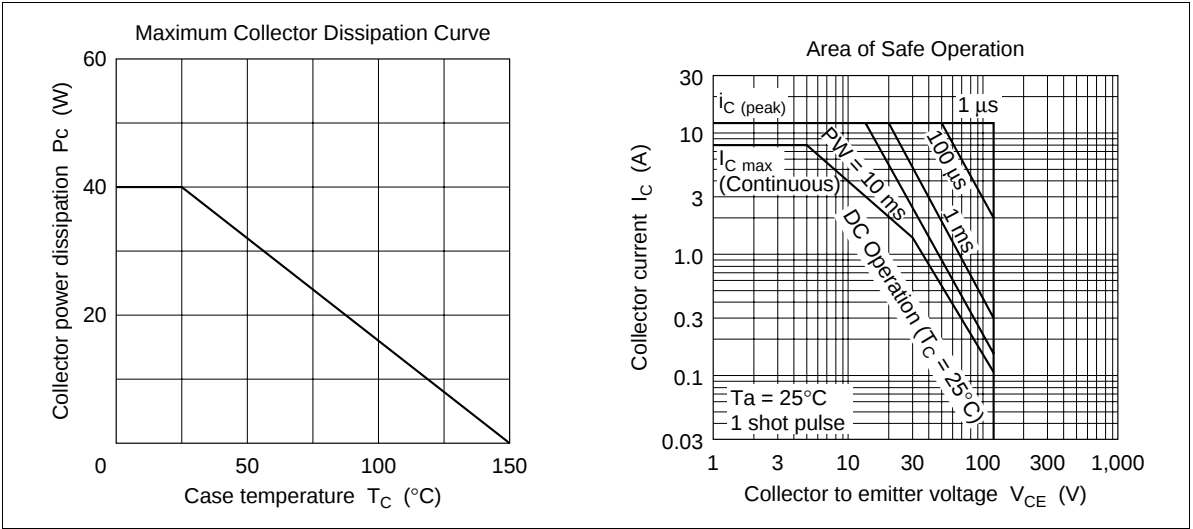
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	120	V
Collector to emitter voltage	V_{CEO}	120	V
Emitter to base voltage	V_{EBO}	7	V
Collector current	I_C	8	A
Collector peak current	$I_{C(peak)}$	12	A
Collector power dissipation	P_C^{*1}	40	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

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

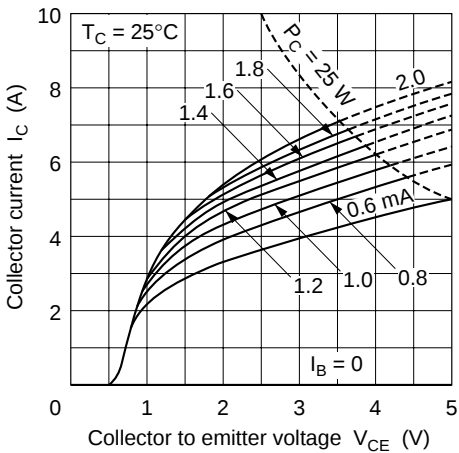
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	120	—	—	V	$I_C = 25\text{ mA}$, $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	$I_E = 50\text{ mA}$, $I_C = 0$
Collector cutoff current	I_{CBO}	—	—	100	μA	$V_{CB} = 120\text{ V}$, $I_E = 0$
	I_{CEO}	—	—	10	μA	$V_{CE} = 100\text{ V}$, $R_{BE} = \infty$
DC current transfer ratio	h_{FE}	1000	—	20000		$V_{CE} = 3\text{ V}$, $I_C = 4\text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)1}$	—	—	1.5	V	$I_C = 4\text{ A}$, $I_B = 8\text{ mA}^{*1}$
	$V_{CE(sat)2}$	—	—	3.0	V	$I_C = 8\text{ A}$, $I_B = 80\text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{BE(sat)1}$	—	—	2.0	V	$I_C = 4\text{ A}$, $I_B = 8\text{ mA}^{*1}$
	$V_{BE(sat)2}$	—	—	3.5	V	$I_C = 8\text{ A}$, $I_B = 80\text{ mA}^{*1}$
Turn on time	t_{on}	—	0.4	—	μs	$I_C = 4\text{ A}$, $I_{B1} = -I_{B2} = 8\text{ mA}$
Storage time	t_{stg}	—	5.4	—	μs	
Fall time	t_f	—	1.1	—	μs	

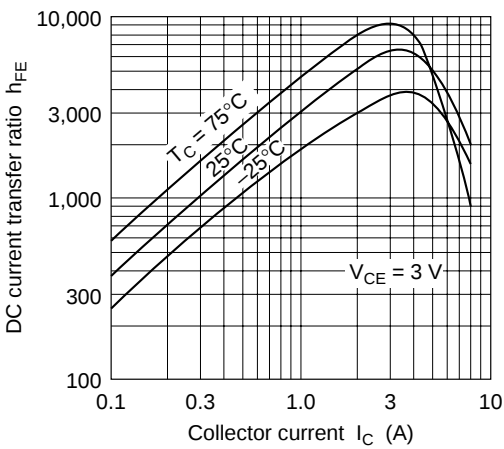
Note: 1. Pulse test.



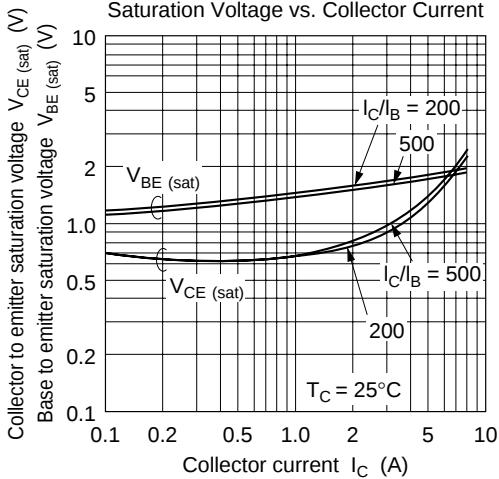
Typical Output Characteristics



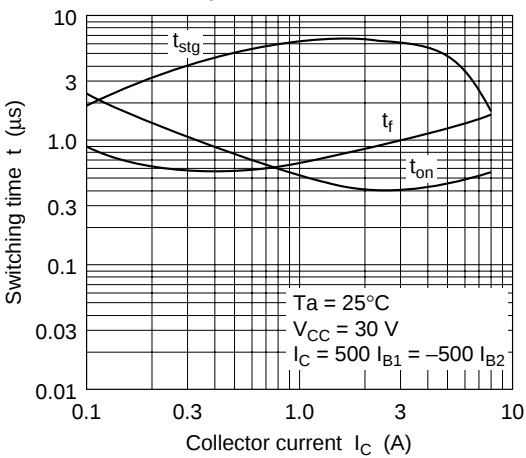
DC Current Transfer Ratio vs. Collector Current

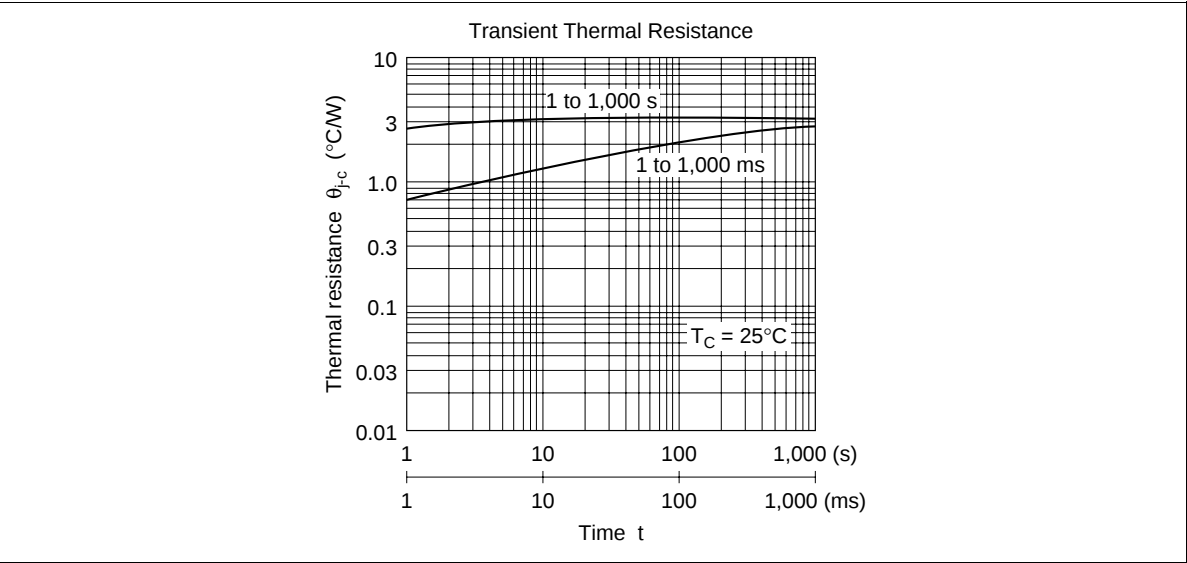


Saturation Voltage vs. Collector Current



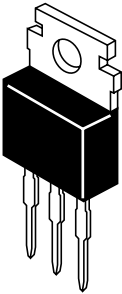
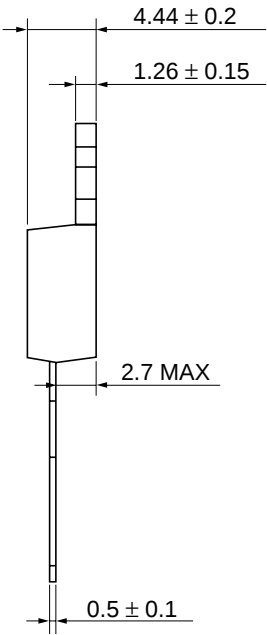
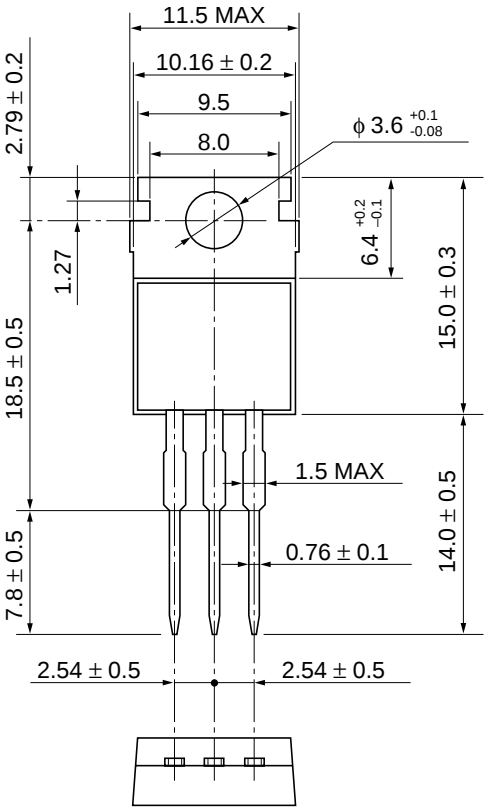
Switching Time vs. Collector Current





Package Dimensions

Unit: mm



Hitachi Code	TO-220AB
JEDEC	Conforms
EIAJ	Conforms
Mass (reference value)	1.8 g

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