2SB955(K)

Silicon PNP Triple Diffused

HITACHI

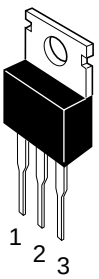
ADE-208-863 (Z)
1st. Edition
Sep. 2000

Application

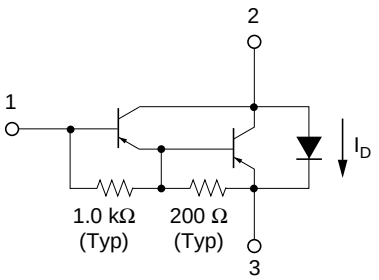
Power switching complementary pair with 2SD1126(K)

Outline

TO-220AB



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



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Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating	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	–10	A
Collector peak current	$I_{C(peak)}$	–15	A
C to E diode forward current	I_D*[1]	10	A
Collector power dissipation	P_C*[2]	50	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

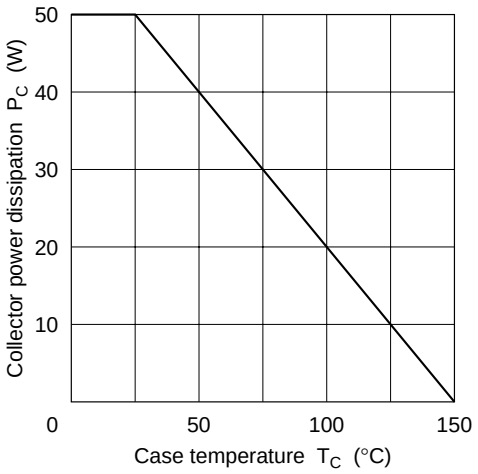
Notes: 1. Value at T_C = 25°C
2. PW ≤ 1 ms 1 shot

Electrical Characteristics (Ta = 25°C)

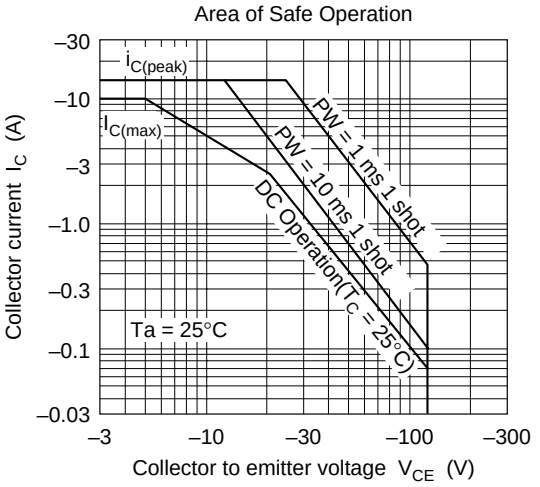
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	–120	—	—	V	I_C = –25 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	–7	—	—	V	I_E = –200 mA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	–100	µA	V_{CB} = –120 V, I_E = 0
	I_{CEO}	—	—	–10	µA	V_{CE} = –100 V, R_{BE} = ∞
DC current transfer ratio	h_{FE}	1000	—	20000		V_{CE} = –3 V, I_C = –5 A*[1]
Collector to emitter saturation voltage	$V_{CE(sat)1}$	—	—	–1.5	V	I_C = –5 A, I_B = –10 mA*[1]
	$V_{CE(sat)2}$	—	—	–3.0	V	I_C = –10 A, I_B = –0.1 A*[1]
Base to emitter saturation voltage	$V_{BE(sat)1}$	—	—	–2.0	V	I_C = –5 A, I_B = –10 mA*[1]
	$V_{BE(sat)2}$	—	—	–3.5	V	I_C = –10 A, I_B = –0.1 A*[1]
C to E diode forward voltage	V_D	—	—	3.0	V	I_D = 10 A*[1]
Turn on time	t_{on}	—	0.8	—	µs	V_{CC} = –30 V
Turn off time	t_{off}	—	4.0	—	µs	I_C = –5 A, I_{B1} = –I_{B2} = –10 mA

Note: 1. Pulse test

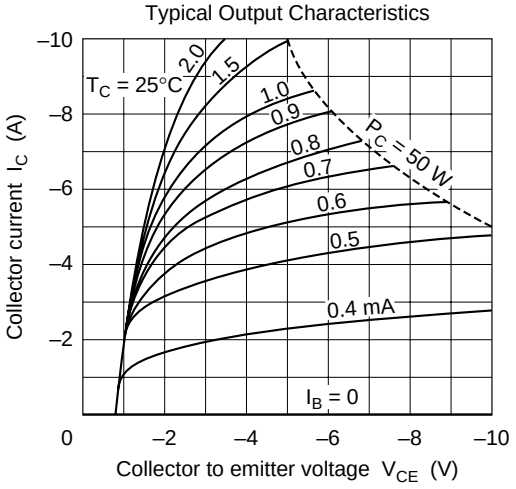
Maximum Collector Dissipation Curve



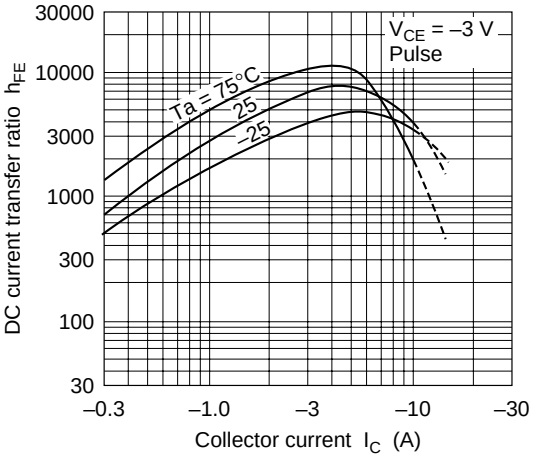
Area of Safe Operation

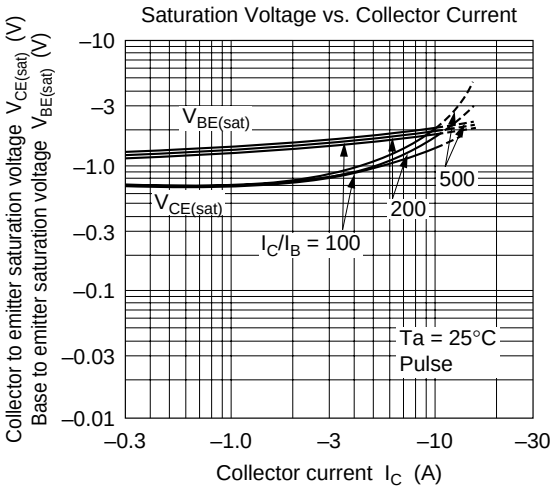


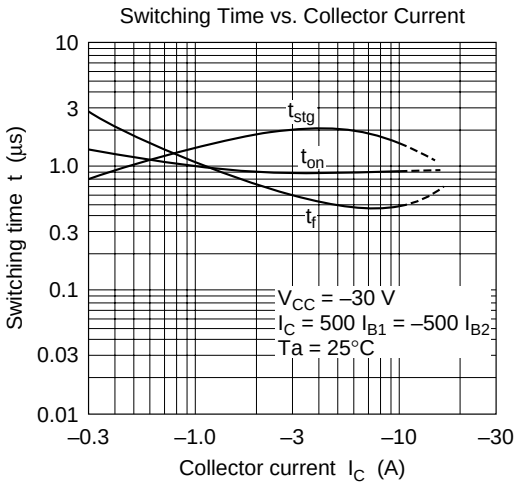
Typical Output Characteristics

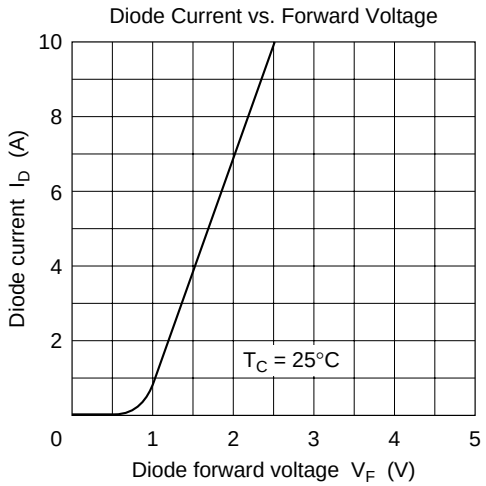


DC Current Transfer Ratio vs. Collector Current



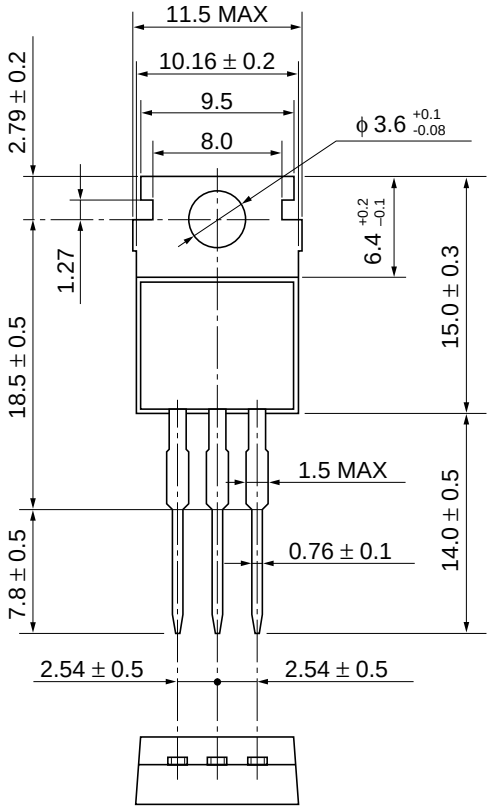

Saturation Voltage vs. Collector Current
Collector to emitter saturation voltage $V_{CE(sat)}$ (V)
Base to emitter saturation voltage $V_{BE(sat)}$ (V)
–10
–3
–1.0
–0.3
–0.1
–0.03
–0.01
$V_{BE(sat)}$
$V_{CE(sat)}$
500
200
I_C/I_B = 100
Ta = 25°C
Pulse
–0.3
–1.0
–3
–10
–30
Collector current I_C (A)

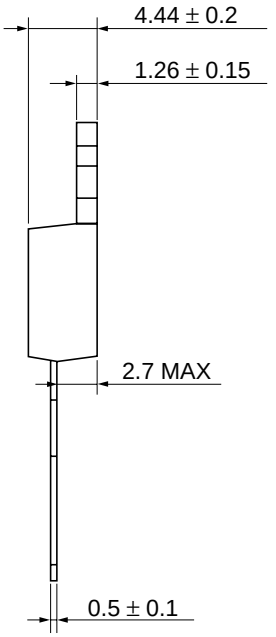

Switching Time vs. Collector Current
Switching time t (µs)
10
3
1.0
0.3
0.1
0.03
0.01
t_{stg}
t_{on}
t_f
V_{CC} = –30 V
I_C = 500 I_{B1} = –500 I_{B2}
Ta = 25°C
–0.3
–1.0
–3
–10
–30
Collector current I_C (A)

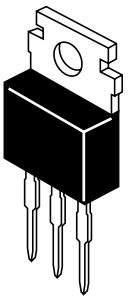

Diode Current vs. Forward Voltage
Diode current I_D (A)
10
8
6
4
2
0
T_C = 25°C
1
2
3
4
5
Diode forward voltage V_F (V)

Package Dimensions

Unit: mm







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

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