2SB1091

Silicon PNP Triple Diffused

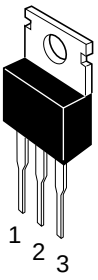
HITACHI

Application

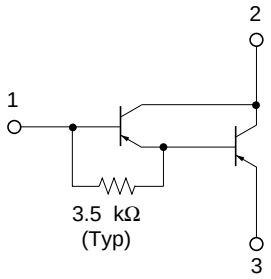
Low frequency power amplifier

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}	–60	V
Collector to emitter voltage	V_{CEO}	–60	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	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Note: 1. Value at T_C = 25°C.

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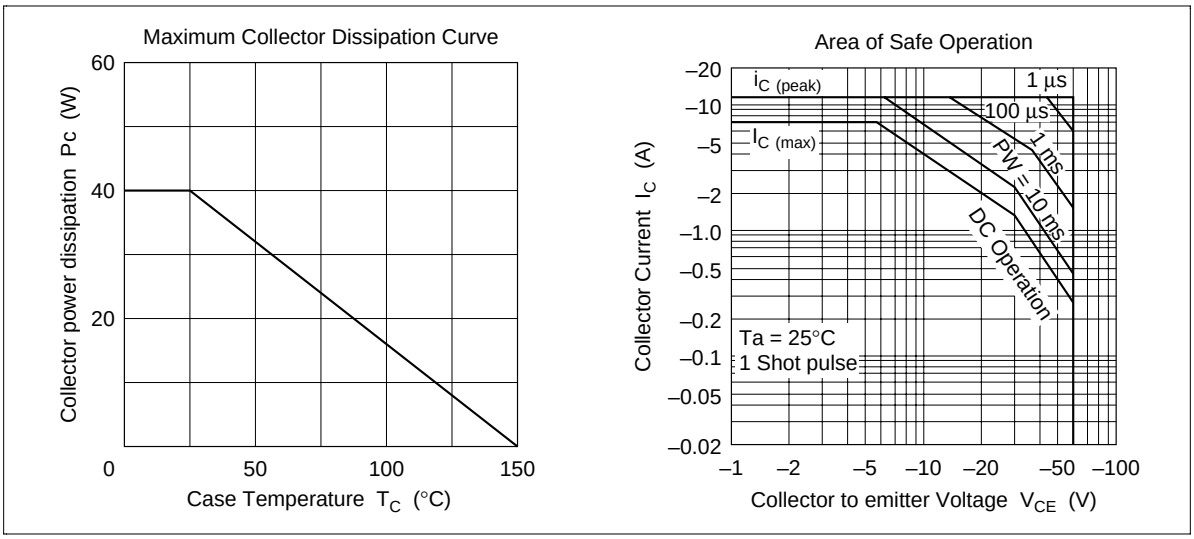
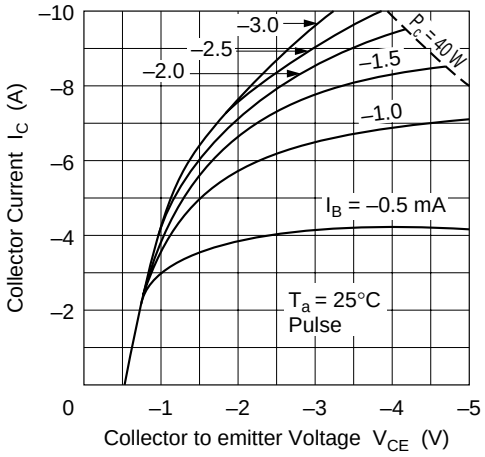
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	–60	—	—	V	I_C = –25 mA, R_{BE} =
Emitter to base breakdown voltage	$V_{(BR)EBO}$	–7	—	—	V	I_E = –50 mA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	–100	µA	V_{CB} = –60 V, I_E = 0
	I_{CEO}	—	—	–10	µA	V_{CE} = –50 V, R_{BE} =
DC current transfer ratio	h_{FE}	1000	—	20000		V_{CE} = –3 V, I_C = –4 A*[1]
Collector to emitter saturation	$V_{CE(sat)1}$	—	—	–1.5	V	I_C = –4 A, I_B = –8 mA*[1]
voltage	$V_{CE(sat)2}$	—	—	–3.0	V	I_C = –8 A, I_B = –80 mA*[1]
Base to emitter saturation	$V_{BE(sat)1}$	—	—	–2.0	V	I_C = –4 A, I_B = –8 mA*[1]
voltage	$V_{BE(sat)2}$	—	—	–3.5	V	I_C = –8 A, I_B = –80 mA*[1]
Turn on time	t_{on}	—	1.0	—	µs	I_C = –4 A, I_{B1} = $-I_{B2}$ = –8 mA
Storage time	t_{stg}	—	2.5	—	µs	
Fall time	t_f	—	0.5	—	µs	

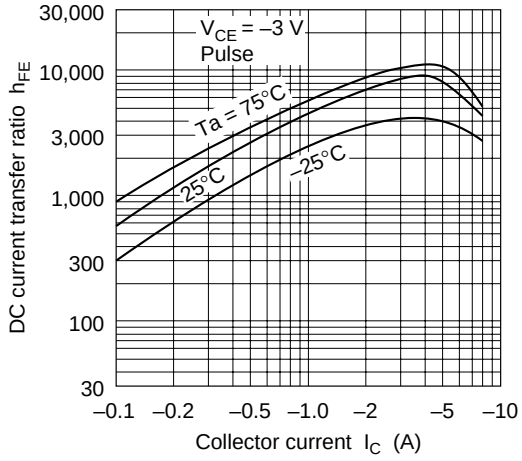
Note: 1. Pulse Test.



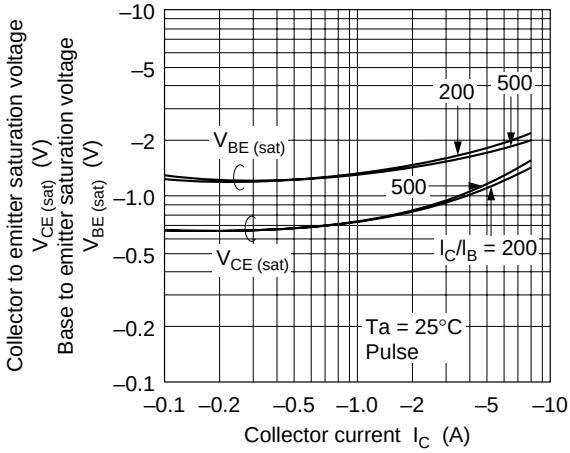
Typical Output Characteristics



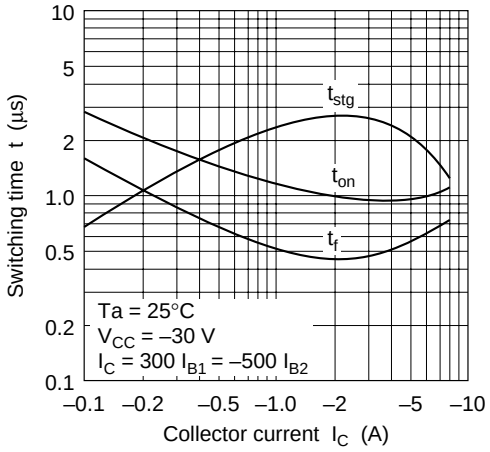
DC Current Transfer Ratio vs. Collector Current

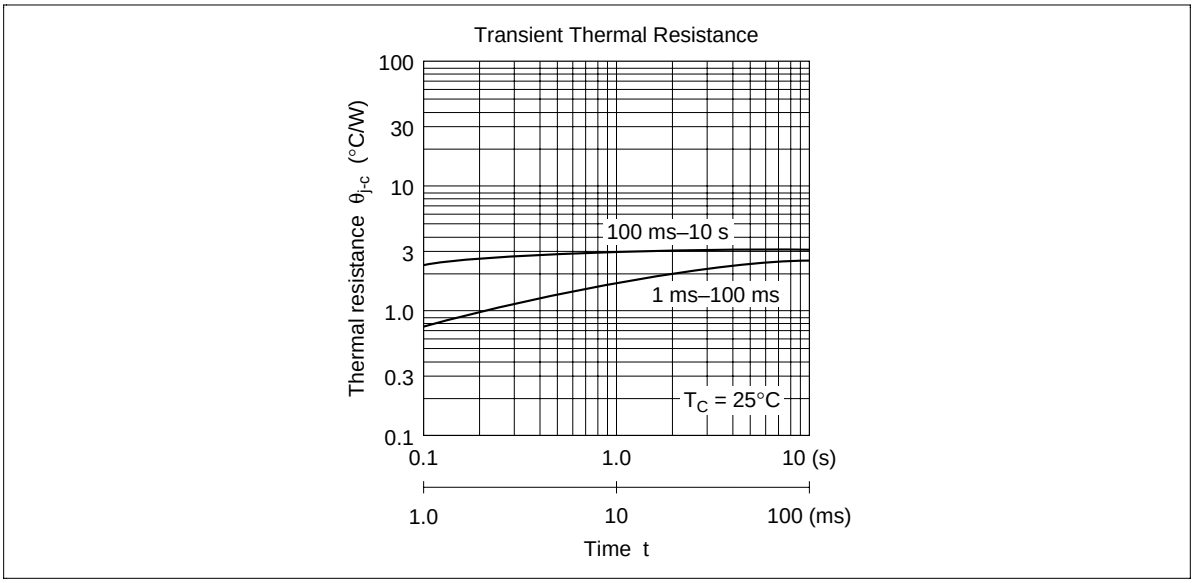


Saturation Voltage vs. Collector Current



Switching Time vs. Collector Current




Transient Thermal Resistance
Thermal resistance θ_{j-c} (°C/W)
100
30
10
3
1.0
0.3
0.1
100 ms–10 s
1 ms–100 ms
T_C = 25°C
0.1
1.0
10 (s)
1.0
10
100 (ms)
Time t

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