HITACHI

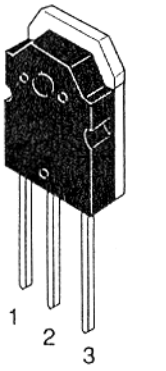
2SB1494

Silicon PNP Triple Diffused
Low Frequency Power Amplifier
Complementary Pair with 2SD2256

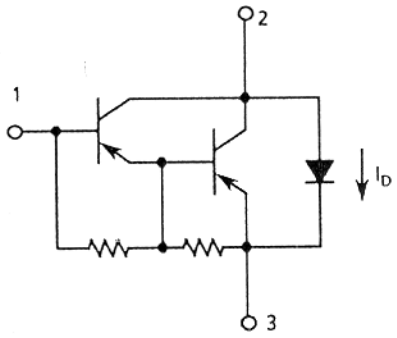
Feature

- High Voltage and High Current (V_{CEO} = –120 V, I_C = –25 A)
- Built-in C-E diode

TO-3P



1. Base
2. Collector
3. Emitter



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	–25	A
Collector peak current	$i_{C(peak)}$	–35	A
Collector power dissipation	P_C*1	120	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C
C to E diode forward current	I_D*1	25	A

Note: 1. Value at T_C = 25°C.

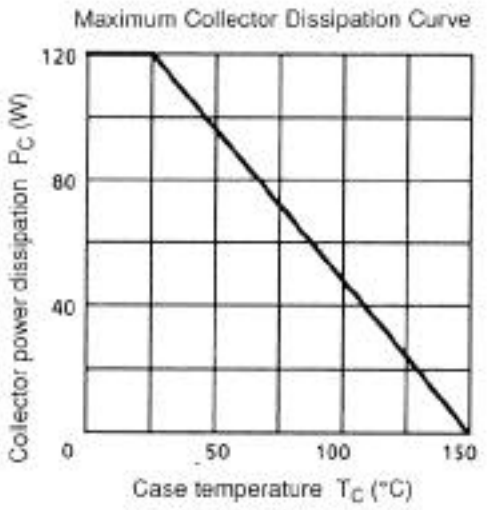
Electrical Characteristics (Ta = 25°C)

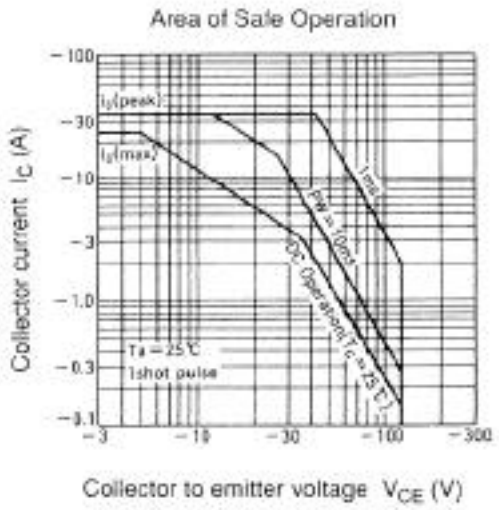
Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to base breakdown voltage	$V_{(BR)CBO}$	–120	—	—	V	I_C = –0.1 mA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	–120	—	—	V	I_C = –25 mA, R_{BE} = ∞
Collector to emitter sustain voltage	$V_{CEO(SUS)}$	–120	—	—	V	I_C = –200 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	–7	—	—	V	I_E = –50 mA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	–10	µA	V_{CB} = –100 V, I_E = 0
	I_{CEO}	—	—	–10		V_{CE} = –100 V, R_{BE} = ∞
DC current transfer ratio	h_{FE1}	2000	—	20000		V_{CE} = –4 V, I_C = –12 A*1
	h_{FE2}	500	—	—		V_{CE} = –4 V, I_C = –25 A*1

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

Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to emitter saturation voltage	$V_{CE(sat)1}$	—	—	–2.0	V	I_C = –12 A, I_B = –24 mA*1
	$V_{CE(sat)2}$	—	—	–3.5		I_C = –25 A, I_B = –250 mA*1
Base to emitter saturation voltage	$V_{BE(sat)1}$	—	—	–3.0	V	I_C = –12 A, I_B = –24 mA
	$V_{BE(sat)2}$	—	—	–4.5		I_C = –25 A, I_B = –250 mA*1

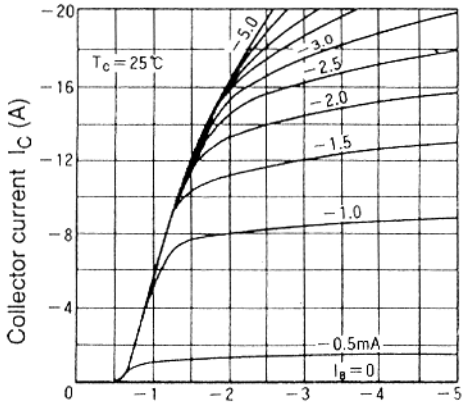
Note: 1. Pulse Test





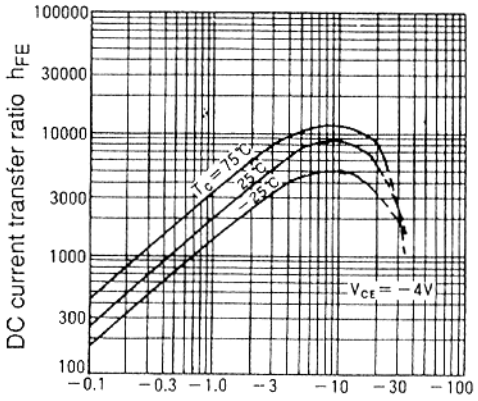
2SB1494

Typical Output Characteristics



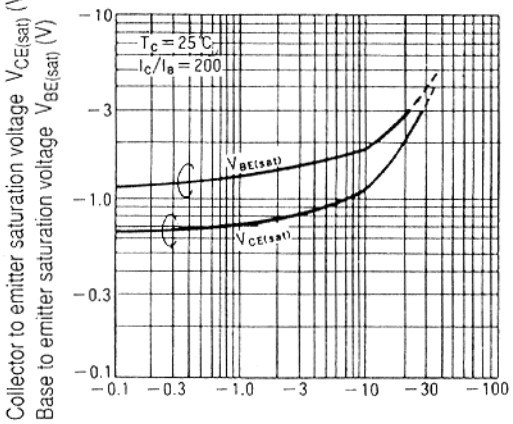
Collector to emitter voltage V_{CE} (V)

DC Current Transfer Ratio vs. Collector Current

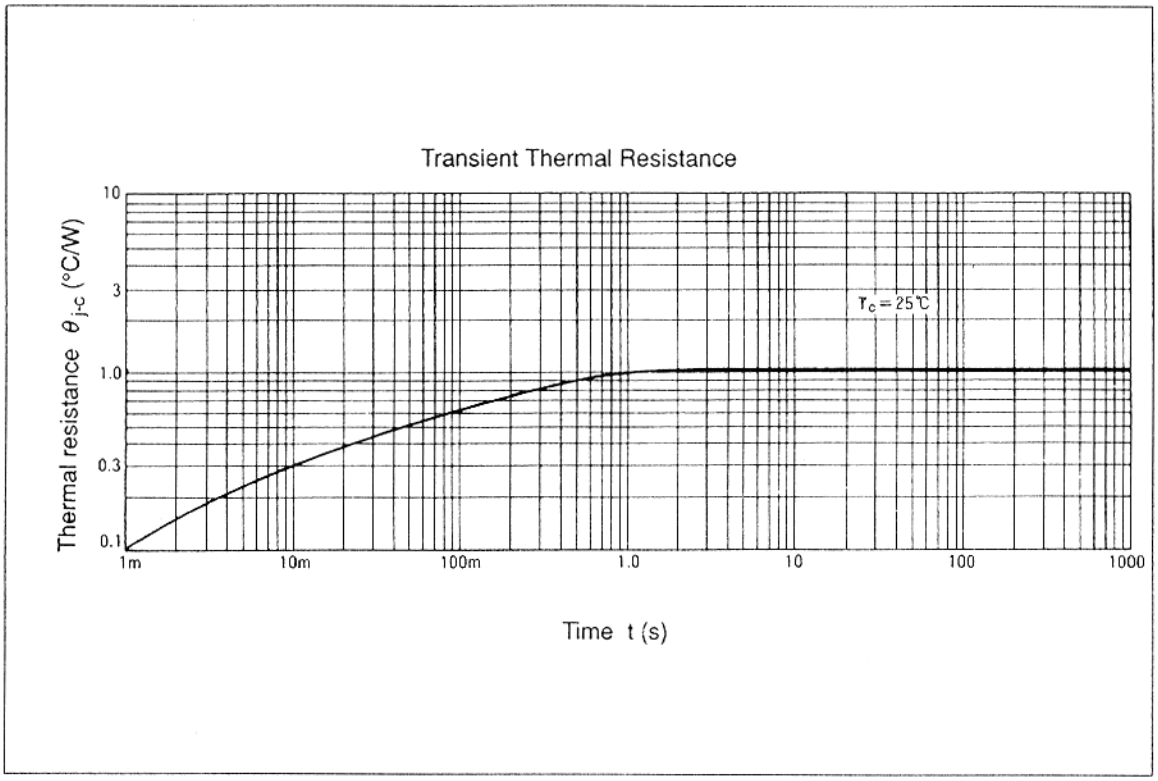


Collector current I_C (A)

Saturation Voltage vs. Collector Current



Collector current I_C (A)


Transient Thermal Resistance
Thermal resistance θj-c (°C/W)
10
3
1.0
0.3
0.1
Tc = 25°C
1m
10m
100m
1.0
10
100
1000
Time t (s)