HITACHI

4AE11

Silicon NPN/PNP Triple Diffused
Low Frequency Power Amplifier

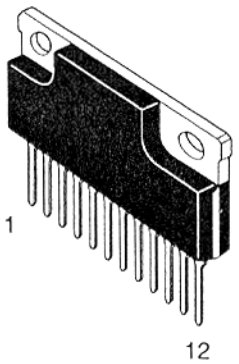
Absolute Maximum Ratings

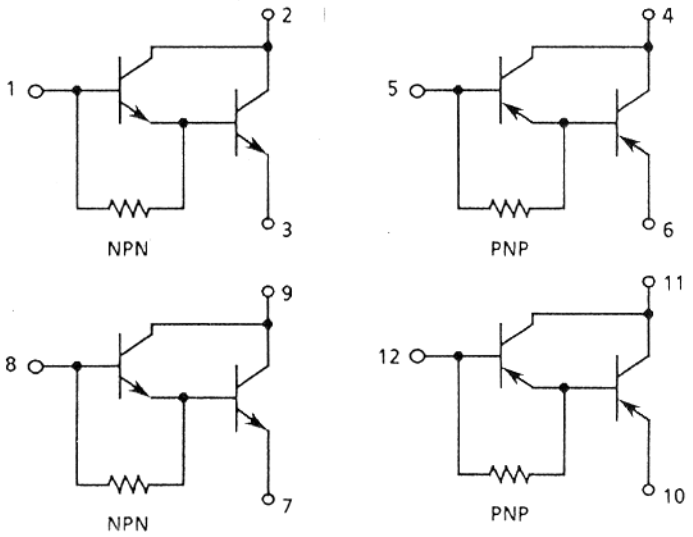
(for each device, Ta = 25°C)

Item	Symbol	Rating NPN	Rating PNP	Unit
Collector to base voltage	V_{CBO}	300	–300	V
Collector to emitter voltage	V_{CEO}	300	–300	V
Emitter to base voltage	V_{EBO}	7	–7	V
Collector current	I_C	0.3	–0.3	A
Collector peak current	$i_{C(peak)}$	0.6	–0.6	A
Collector power dissipation	P_C*1	32	32	W
Junction temperature	Tj	150	150	°C
Storage temperature	Tstg	–55 to 150	–55 to 150	°C

Note: 1. Value at T_C = 25°C.

SP-12TA



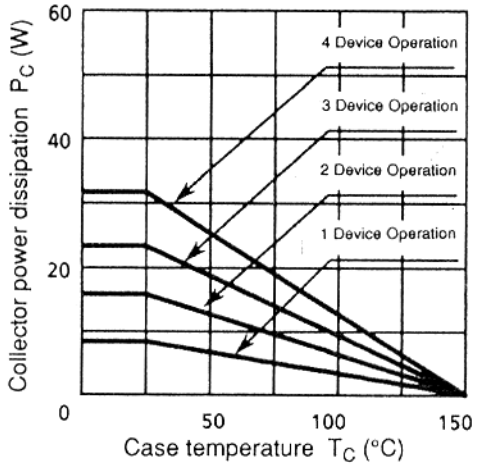


Electrical Characteristics (Ta = 25°C)

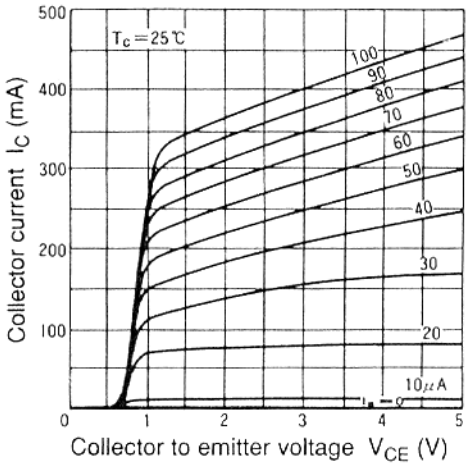
Item	Symbol	Min	Typ	Max	Unit	Test condition
Collector to base breakdown voltage	$V_{(BR)CBO}$	300	—	—	V	I_C = 1 mA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	300	—	—	V	I_C = 10 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	I_E = 1 mA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	10	μA	V_{CB} = 300 V, I_E = 0
	I_{CEO}	—	—	10		V_{CE} = 60 V, R_{BE} = ∞
Emitter cutoff current	I_{EBO}	—	—	10	μA	V_{EB} = 5 V, I_C = 0
DC current transfer ratio	h_{FE1}	1000	—	—		V_{CE} = 1.5 V, I_C = 20 mA*1
	h_{FE2}	3000	—	30000		V_{CE} = 1.5 V, I_C = 100 mA*1
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.5	V	I_C = 100 mA, I_B = 0.2 mA*1
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	2.0	V	I_C = 100 mA, I_B = 0.2 mA*1

Note: 1. Pulse Test.
2. The minus sign of PNP is omitted.

Maximum Collector Dissipation Curve



Typical Output Characteristics (NPN)



Note: Collector power dissipation of each devices is identicall.

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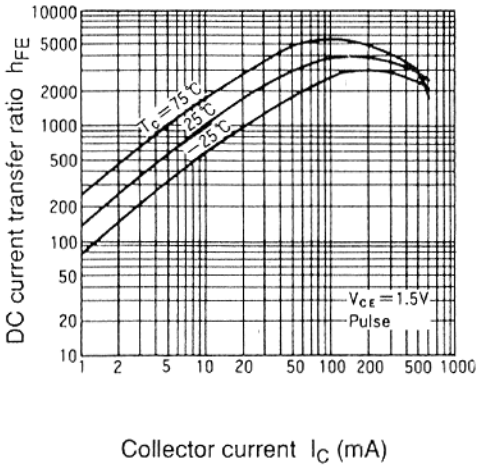
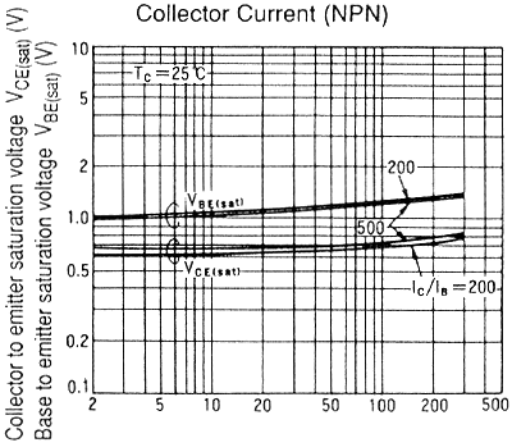
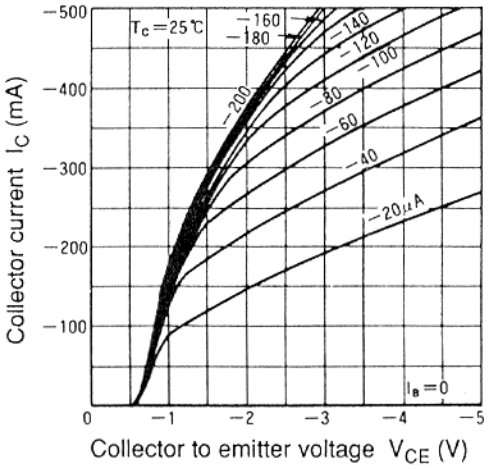
DC Current Transfer Ratio vs. Collector Current (NPN)



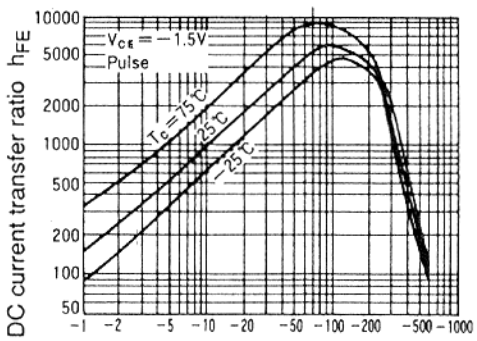
Saturation Voltage vs. Collector Current (NPN)



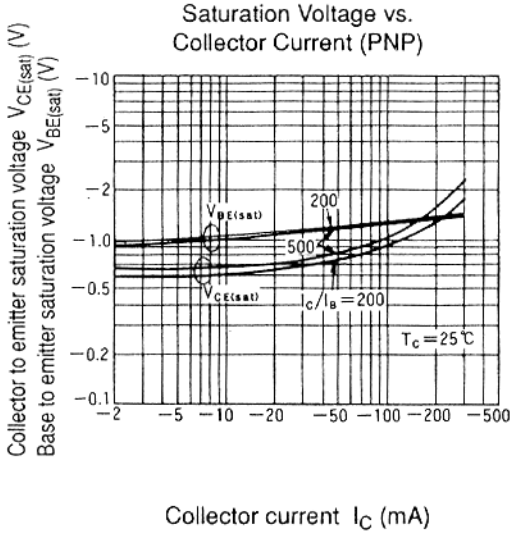
Typical Output Characteristics (PNP)



DC Current Transfer Ratio vs. Collector Current (PNP)



Saturation Voltage vs.
Collector Current (PNP)



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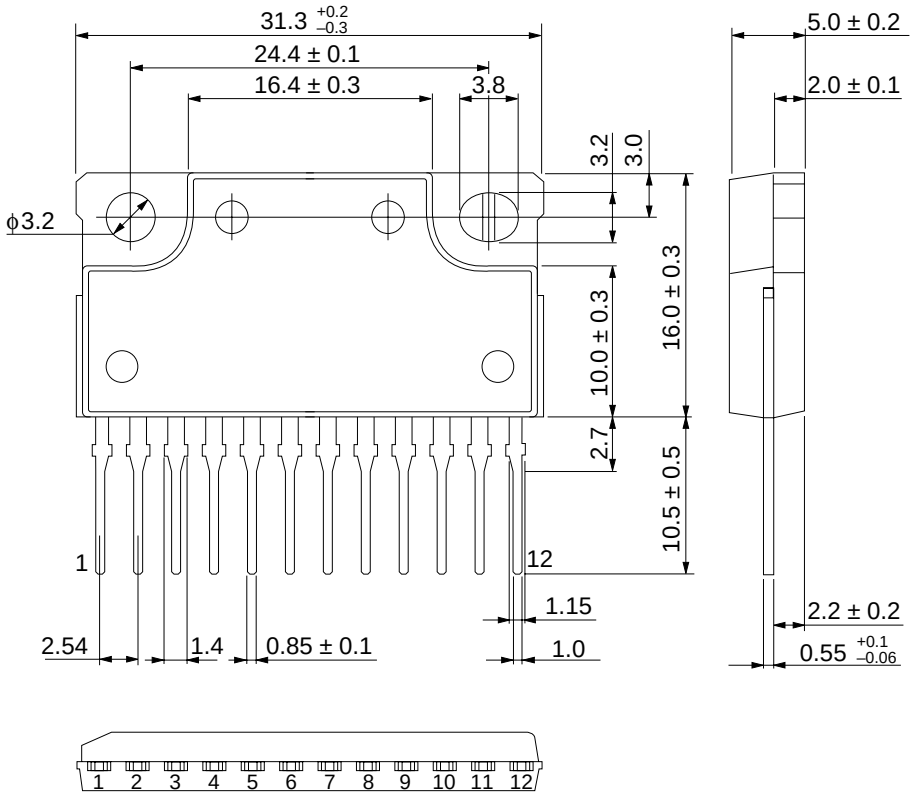
Unit: mm



Pin No.	1	2	3	4	5	6	7	8	9	10	11	12
Electrode	B	C	E	C	B	E	E	B	C	E	C	B

Note: B: Base
C: Collector
E: Emitter