
4AE11

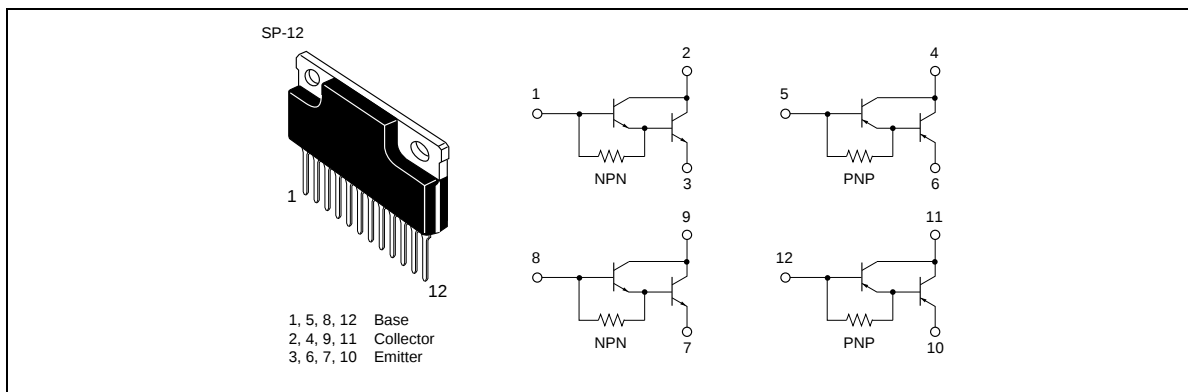
Silicon NPN/PNP Triple Diffused

HITACHI

Application

Low frequency power amplifier

Outline



4AE11

Absolute Maximum Ratings (for each device, $T_a = 25^\circ\text{C}$)

Item	Symbol	Ratings		Unit
		NPN	PNP	
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	$I_{\text{C(peak)}}$	0.6	−0.6	A
Collector power dissipation	P_{C}^{*1}	32	32	W
Junction temperature	T_{j}	150	150	$^\circ\text{C}$
Storage temperature	T_{stg}	−55 to 150	−55 to 150	$^\circ\text{C}$

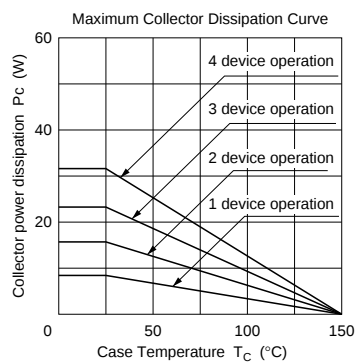
Note: 1. Value at $T_{\text{C}} = 25^\circ\text{C}$.

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

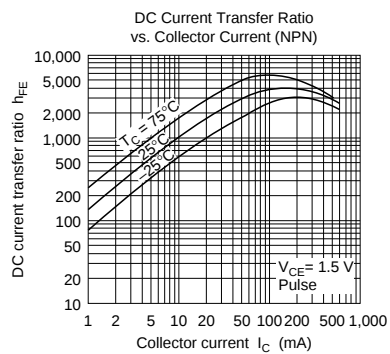
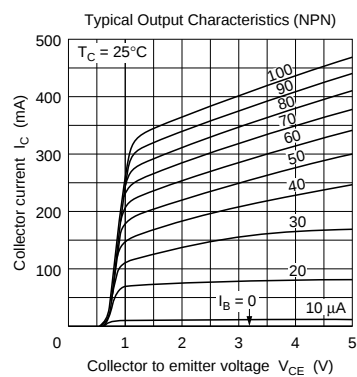
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	300	—	—	V	$I_{\text{C}} = 1 \text{ mA}, I_{\text{E}} = 0$
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	300	—	—	V	$I_{\text{C}} = 10 \text{ mA}, R_{\text{BE}} = \infty$
Emitter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

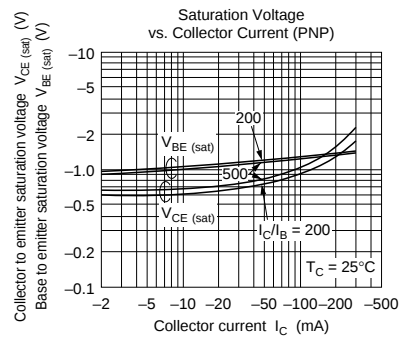
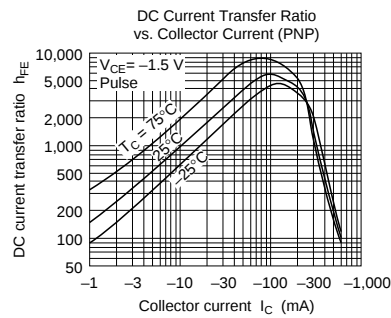
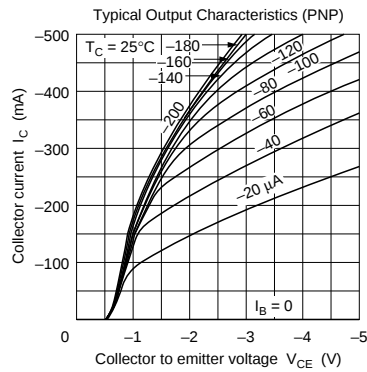
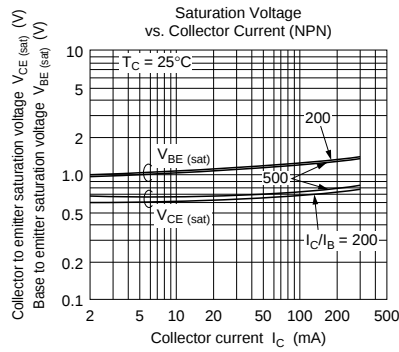
Notes: 1. Pulse test.

2. The minus sign of PNP is omitted.



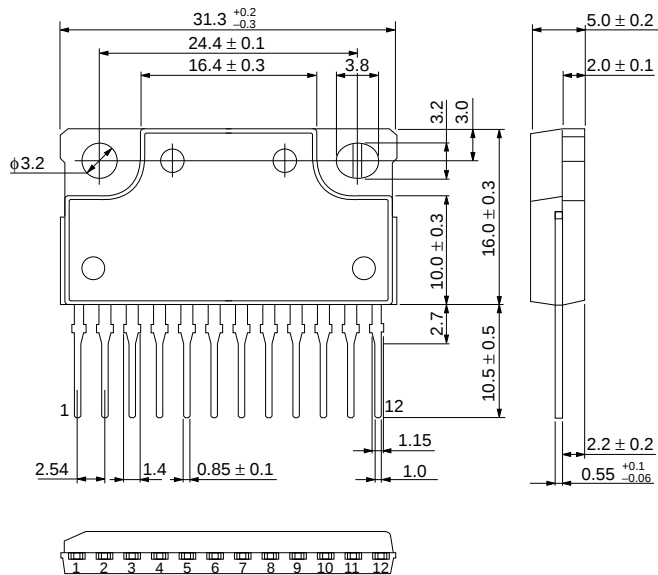
Note: Collector power dissipation of each devices is identical.





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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

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