

4AC14

Silicon NPN Triple Diffused

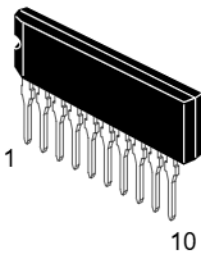
HITACHI

Application

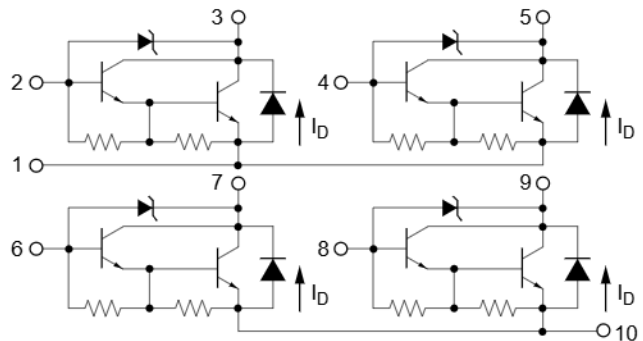
Low frequency power amplifier

Outline

SP-10



1, 10 Emitter
2, 4, 6, 8 Base
3, 5, 7, 9 Collector



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

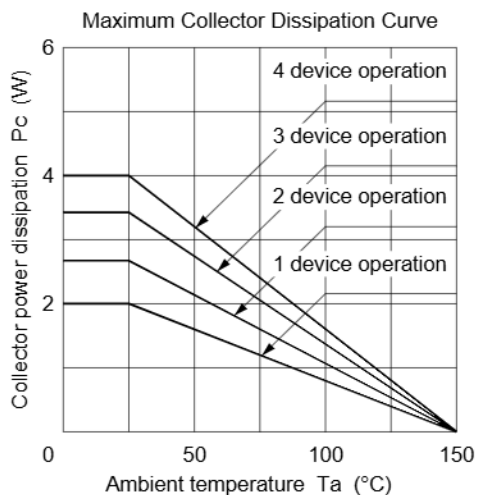
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	150	V
Collector to emitter voltage	V_{CEO}	150	V
Emitter to base voltage	V_{EBO}	7	V
Collector current	I_{C}	5	A
Collector peak current	$I_{\text{C(peak)}}$	10	A
Diode current	I_{D}	5	A
Collector power dissipation	P_{C}^{*1}	4	W
	$P_{\text{C}}^{*1} (T_{\text{C}} = 25^\circ\text{C})$	28	
Junction temperature	T_{j}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Note: 1. 4 devices operation.

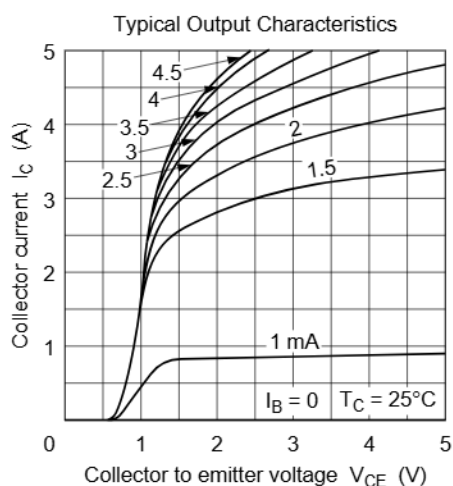
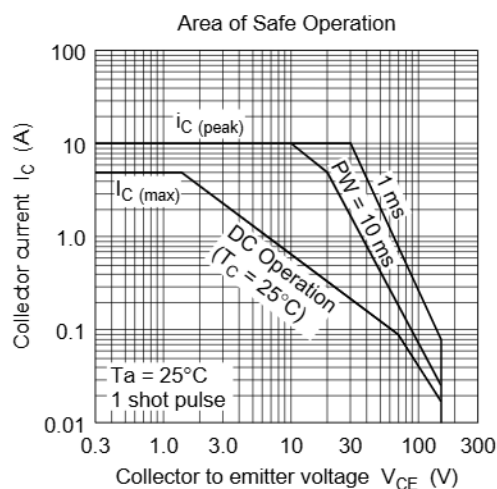
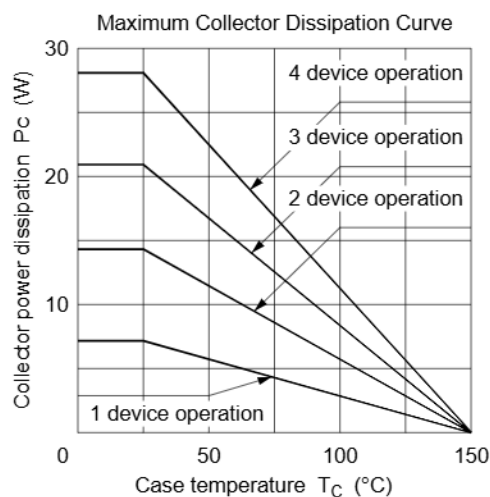
Electrical Characteristics (for each device, $T_a = 25^\circ\text{C}$)

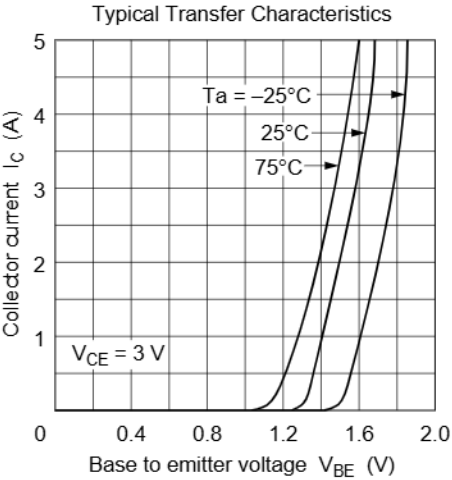
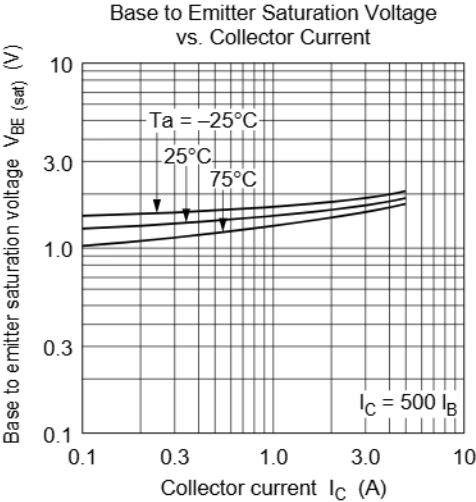
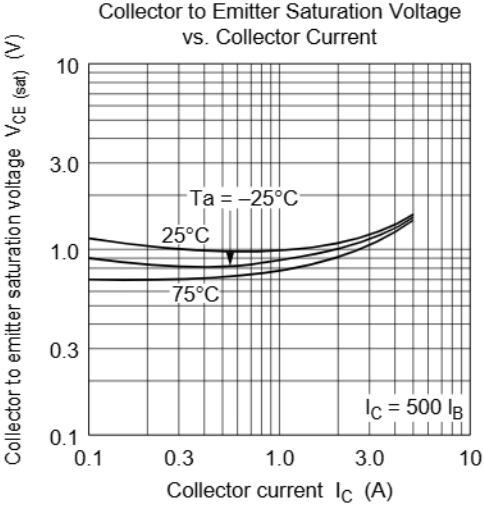
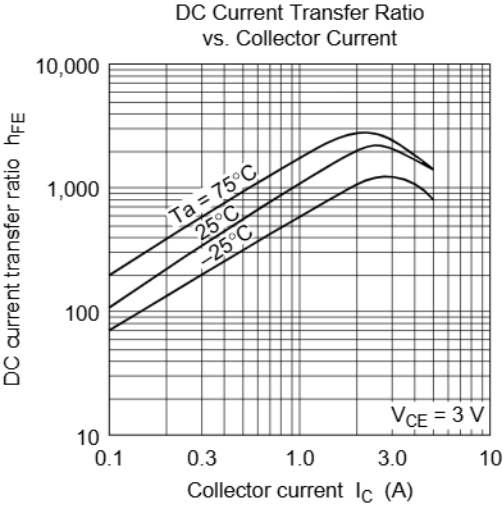
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CBO}}$	150	—	—	V	$I_{\text{C}} = 0.1 \text{ mA}$, $I_{\text{E}} = 0$
Collector to emitter sustain voltage	$V_{\text{CEO}(\text{SUS})}$	150	—	—	V	$I_{\text{C}} = 0.2 \text{ A}$, $L = 20 \text{ mHz}$, $R_{\text{BE}} = \infty$
Emitter to base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	7	—	—	V	$I_{\text{E}} = 50 \text{ mA}$, $I_{\text{C}} = 0$
Collector cutoff current	I_{CBO}	—	—	10	μA	$V_{\text{CB}} = 120 \text{ V}$, $I_{\text{E}} = 0$
	I_{CEO}	—	—	10		$V_{\text{CE}} = 120 \text{ V}$, $R_{\text{BE}} = \infty$
DC current transfer ratio	h_{FE}	1000	—	20000		$V_{\text{CE}} = 3 \text{ V}$, $I_{\text{C}} = 3 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{\text{CE}(\text{sat})}$	—	—	1.5	V	$I_{\text{C}} = 3 \text{ A}$, $I_{\text{B}} = 6 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{\text{BE}(\text{sat})}$	—	—	2.0	V	$I_{\text{C}} = 3 \text{ A}$, $I_{\text{B}} = 6 \text{ mA}^{*1}$
C to E diode forward current	V_{D}	—	—	3.5	V	$I_{\text{D}} = 5 \text{ A}$

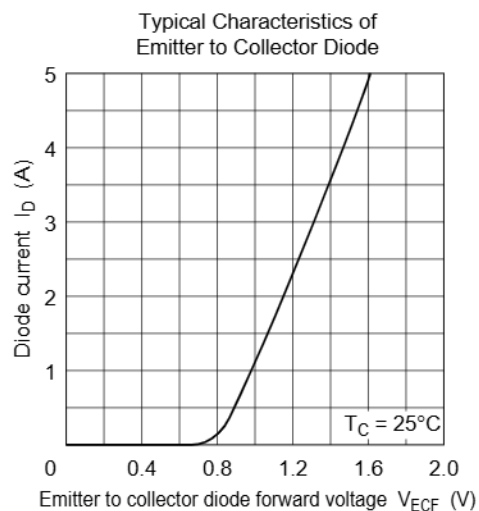
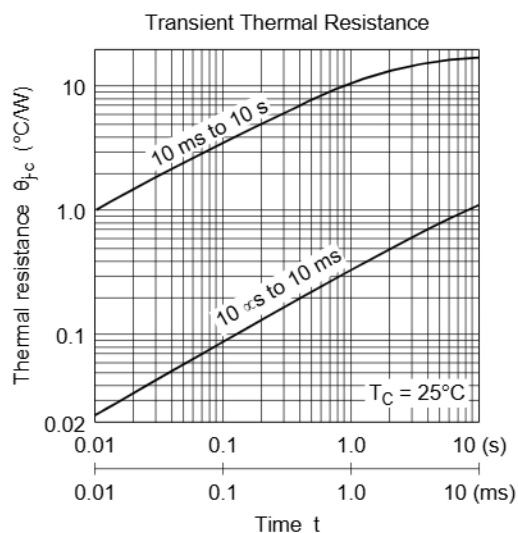
Note: 1. Pulse test.



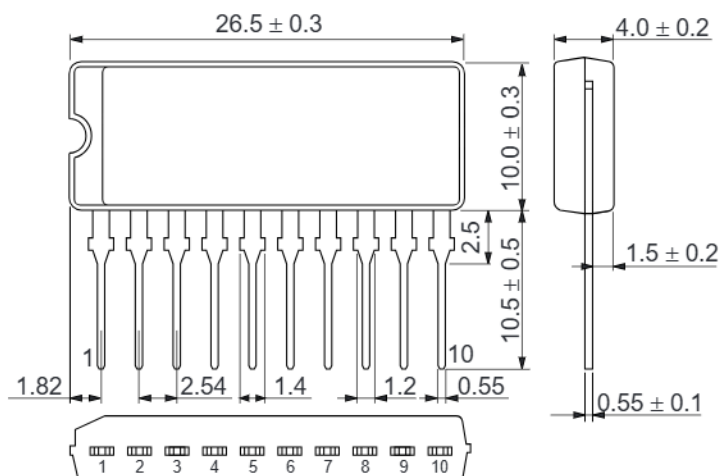
Note: Collector power dissipation of each devices is identical.





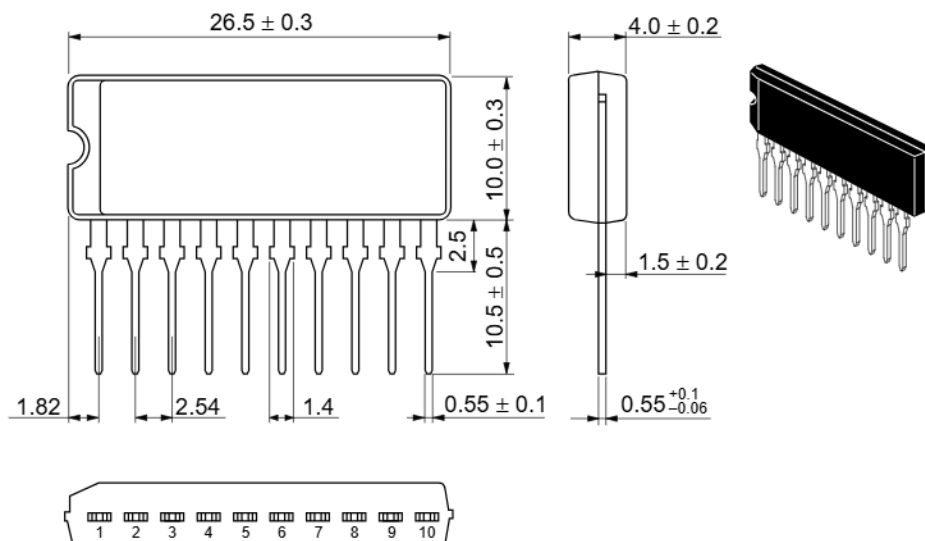


Unit: mm



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

Note: B: Base
C: Collector
E: Emitter



Hitachi Code	SP-10
JEDEC	—
EIAJ	—
Weight (reference value)	2.9 g

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