

# 4AC12

Silicon NPN Epitaxial

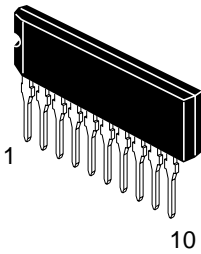
# HITACHI

## Application

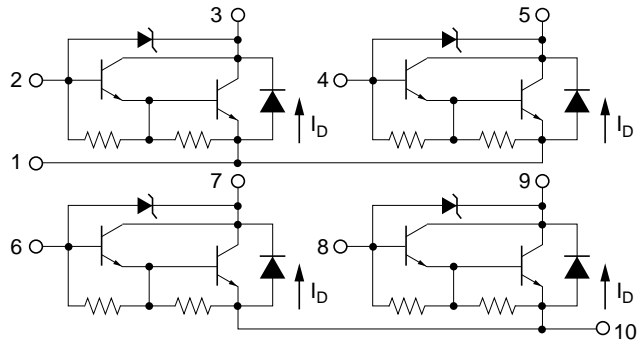
Low frequency power amplifier

## Outline

SP-10



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



# 4AC12

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

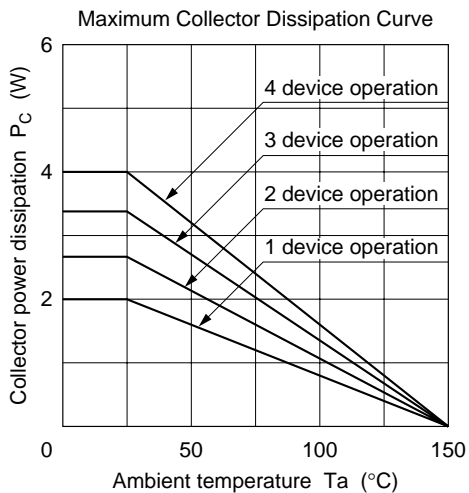
Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{\text{CBO}}$	27	V
Collector to emitter voltage	$V_{\text{CEO}}$	27	V
Emitter to base voltage	$V_{\text{EBO}}$	7	V
Collector current	$I_{\text{C}}$	2	A
Collector peak current	$I_{\text{C(peak)}}$	4	A
Diode current	$I_{\text{D}}$	2	A
Collector power dissipation	$P_{\text{C}}^{*1}$	4	W
	$P_{\text{C}}^{*1} (T_{\text{C}} = 25^\circ\text{C})$	28	
Junction temperature	$T_{\text{J}}$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

Note: 1. 4 devices operation.

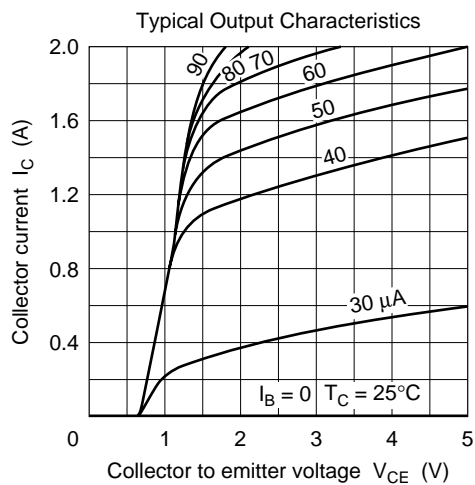
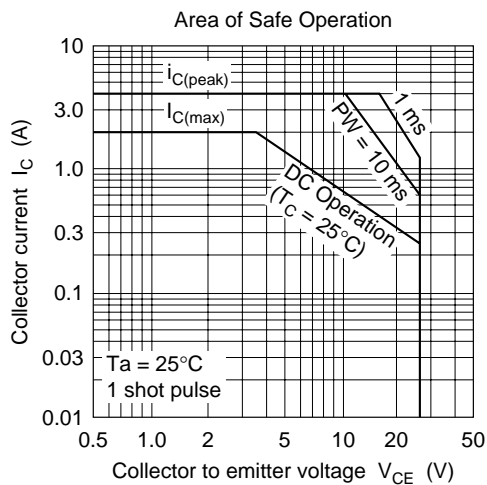
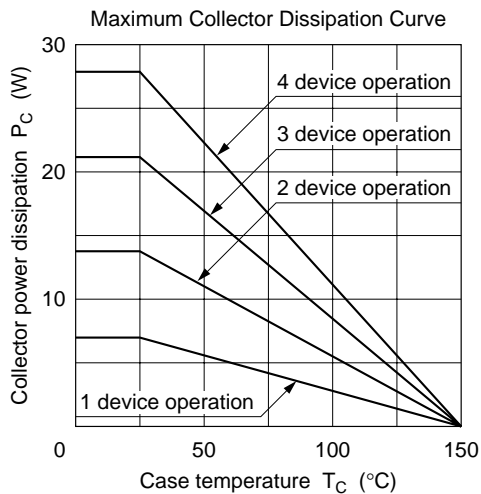
## Electrical Characteristics (for each device, $T_a = 25^\circ\text{C}$ )

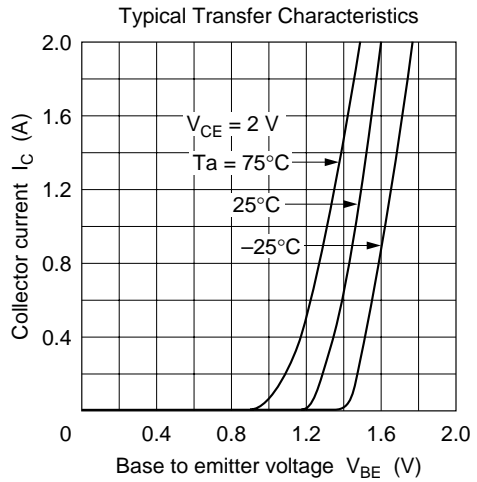
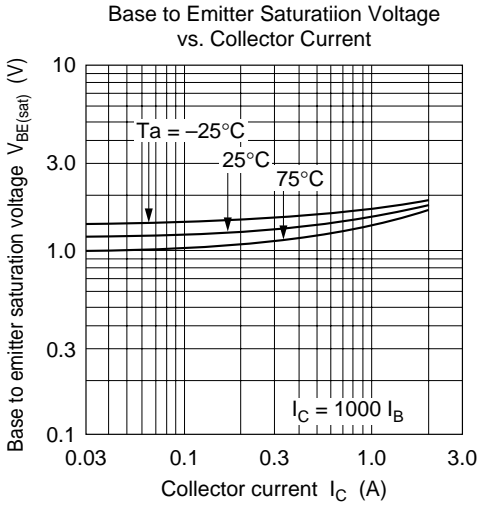
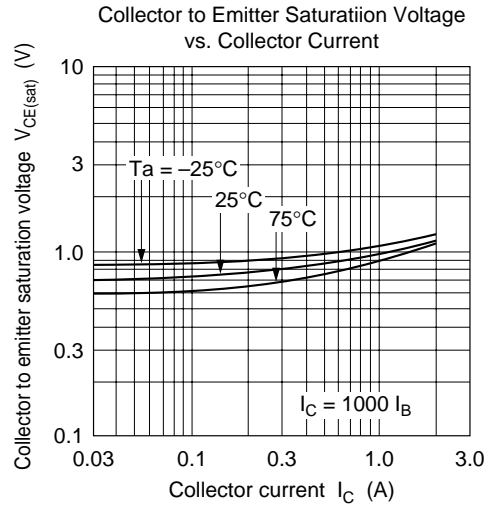
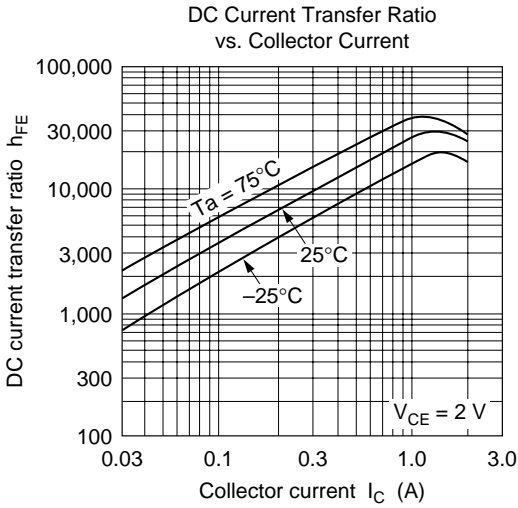
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CBO}}$	27	—	—	V	$I_{\text{C}} = 1 \text{ mA}, I_{\text{E}} = 0$
Collector to emitter sustain voltage	$V_{\text{CEO}(\text{SUS})}$	28	—	36	V	$I_{\text{C}} = 1 \text{ A}, L = 20 \text{ mH}, R_{\text{BE}} = \infty$
Emitter to base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	7	—	—	V	$I_{\text{E}} = 5 \text{ mA}, I_{\text{C}} = 0$
Collector cutoff current	$I_{\text{CBO}}$	—	—	10	$\mu\text{A}$	$V_{\text{CB}} = 20 \text{ V}, I_{\text{E}} = 0$
	$I_{\text{CEO}}$	—	—	10		$V_{\text{CE}} = 20 \text{ V}, R_{\text{BE}} = \infty$
DC current transfer ratio	$h_{\text{FE}}$	7000	—	30000		$V_{\text{CE}} = 2 \text{ V}, I_{\text{C}} = 0.5 \text{ A}$
	$h_{\text{FE}}$	2000	—	—		$V_{\text{CE}} = 2 \text{ V}, I_{\text{C}} = 2 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{\text{CE}(\text{sat})}$	—	—	1.5	V	$I_{\text{C}} = 2 \text{ A}, I_{\text{B}} = 2 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{\text{BE}(\text{sat})}$	—	—	2.0	V	$I_{\text{C}} = 2 \text{ A}, I_{\text{B}} = 2 \text{ mA}^{*1}$
C to E diode forward current	$V_{\text{D}}$	—	—	3.5	V	$I_{\text{D}} = 2 \text{ A}$

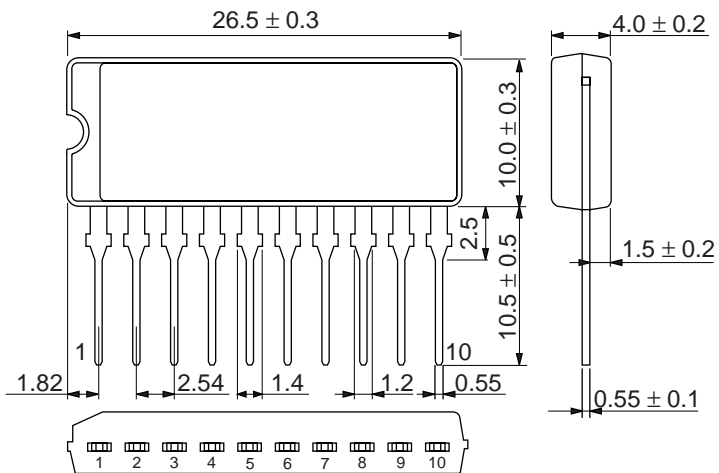
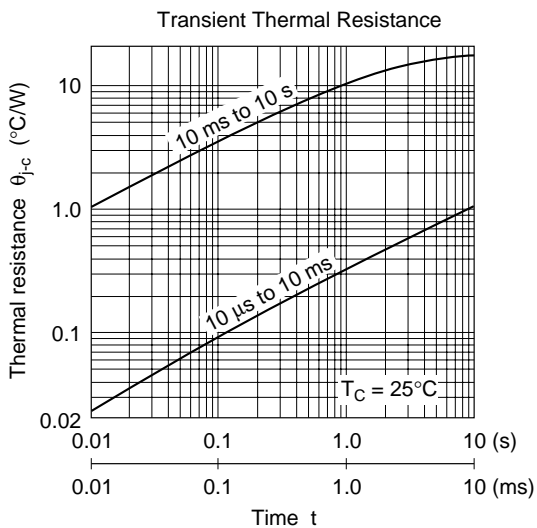
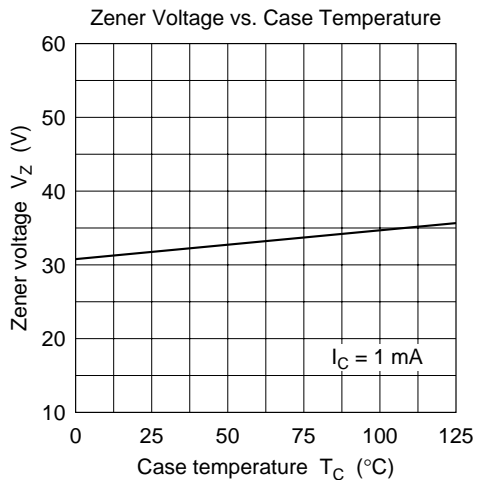
Note: 1. Pulse test.



Note: Collector power dissipation of each devices is identical.

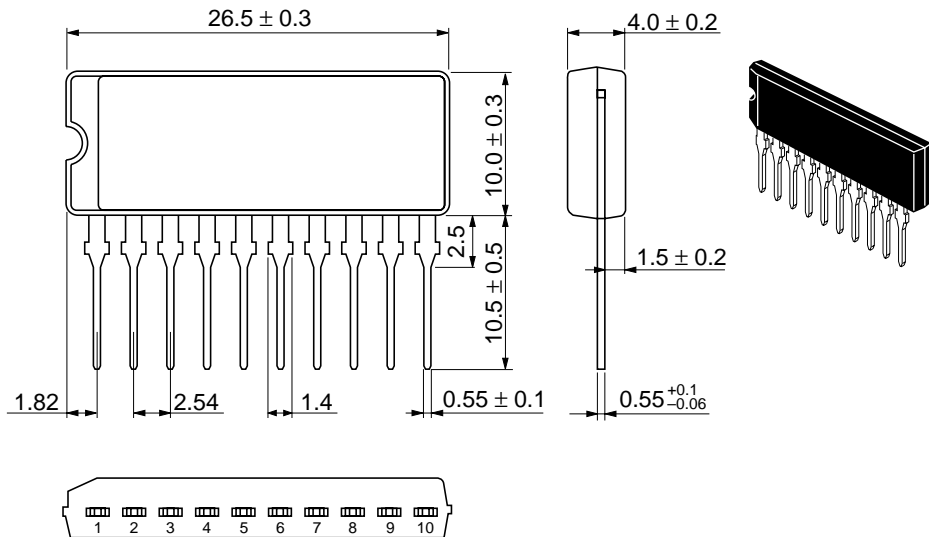






Pin No.	1	2	3	4	5	6	7	8	9	10
Electrode	E	B	C	B	C	B	C	B	C	E

Note: B: Base  
 C: Collector  
 E: Emitter



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

## Cautions

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