
2SC2309

Silicon NPN Epitaxial

HITACHI

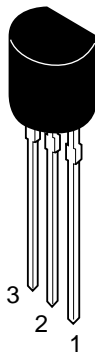
ADE-208-1061 (Z)
1st. Edition
Mar. 2001

Application

Low frequency amplifier

Outline

TO-92 (1)



1. Emitter
2. Collector
3. Base

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

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	55	V
Collector to emitter voltage	V_{CEO}	50	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_{C}	100	mA
Collector power dissipation	P_{C}	200	mW
Junction temperature	T_{j}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

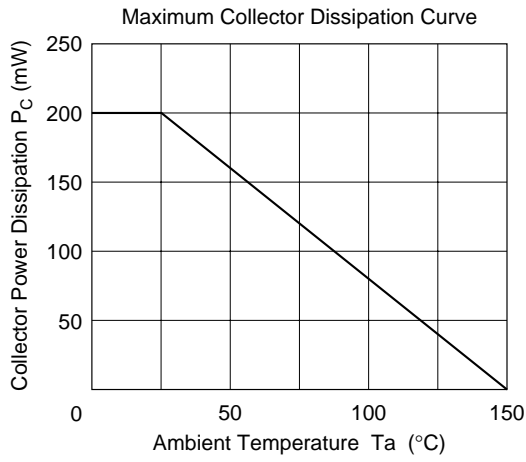
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	55	—	—	V	$I_{\text{C}} = 10 \mu\text{A}$, $I_{\text{E}} = 0$
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	50	—	—	V	$I_{\text{C}} = 1 \text{ mA}$, $R_{\text{BE}} = \infty$
Emitter to base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	5	—	—	V	$I_{\text{E}} = 10 \mu\text{A}$, $I_{\text{C}} = 0$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{\text{CB}} = 18 \text{ V}$, $I_{\text{E}} = 0$
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	$V_{\text{EB}} = 2 \text{ V}$, $I_{\text{C}} = 0$
DC current transfer ratio	h_{FE}^{*1}	250	—	1200		$V_{\text{CE}} = 12 \text{ V}$, $I_{\text{C}} = 2 \text{ mA}$
Base to emitter voltage	V_{BE}	—	—	0.75	V	$V_{\text{CE}} = 12 \text{ V}$, $I_{\text{C}} = 2 \text{ mA}$
Collector to emitter saturation voltage	$V_{\text{CE}(\text{sat})}$	—	—	0.2	V	$I_{\text{C}} = 10 \text{ mA}$, $I_{\text{B}} = 1 \text{ mA}$
Gain bandwidth product	f_{T}	—	230	—	MHz	$V_{\text{CE}} = 12 \text{ V}$, $I_{\text{C}} = 2 \text{ mA}$
Collector output capacitance	C_{ob}	—	1.8	3.5	pF	$V_{\text{CB}} = 10 \text{ V}$, $I_{\text{E}} = 0$, $f = 1 \text{ MHz}$

Note: 1. The 2SC2309 is grouped by h_{FE} as follows.

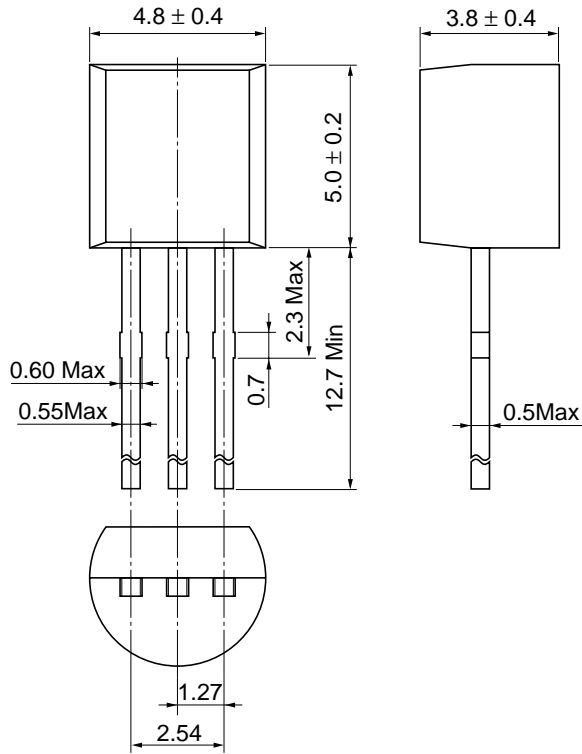
D	E	F
250 to 500	400 to 800	600 to 1200

See characteristic curves of 2SC1345.



Package Dimensions

As of January, 2001
Unit: mm



Hitachi Code	TO-92 (1)
JEDEC	Conforms
EIAJ	Conforms
Mass (reference value)	0.25 g

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