
2SD1306

Silicon NPN Epitaxial

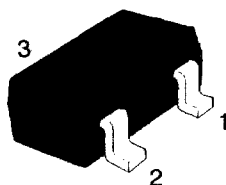
HITACHI

Application

Low frequency amplifier, Muting

Outline

MPAK



- 1. Emitter
- 2. Base
- 3. Collector

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

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	30	V
Collector to emitter voltage	V_{CEO}	15	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_{C}	0.7	A
Collector power dissipation	P_{C}	150	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	$V_{(\text{BR})\text{CBO}}$	30	—	—	V	$I_{\text{C}} = 10\text{ }\mu\text{A}$, $I_{\text{E}} = 0$
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	15	—	—	V	$I_{\text{C}} = 1\text{ mA}$, $R_{\text{BE}} = \infty$
Emitter to base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	5	—	—	V	$I_{\text{E}} = 10\text{ }\mu\text{A}$, $I_{\text{C}} = 0$
Collector cutoff current	I_{CBO}	—	—	1.0	μA	$V_{\text{CB}} = 20\text{ V}$, $I_{\text{E}} = 0$
DC current transfer ratio	h_{FE}^{*1}	250	—	800		$V_{\text{CE}} = 1\text{ V}$, $I_{\text{C}} = 150\text{ mA}^{*2}$
Base to emitter voltage	V_{BE}	—	—	1.0	V	$V_{\text{CE}} = 1\text{ V}$, $I_{\text{C}} = 150\text{ mA}^{*2}$
Collector to emitter saturation voltage	$V_{\text{CE}(\text{sat})}$	—	—	0.5	V	$I_{\text{C}} = 500\text{ mA}$, $I_{\text{B}} = 50\text{ mA}^{*2}$
Gain bandwidth product	f_{T}	—	250	—	MHz	$V_{\text{CE}} = 1\text{ V}$, $I_{\text{C}} = 150\text{ mA}^{*2}$

Notes: 1. The 2SD1306 is grouped by h_{FE} as follows.

2. Pulse test

Grade	D	E
Mark	ND	NE
h_{FE}	250 to 500	400 to 800

See characteristic curves of 2SD1504.

