

2SD2019

Silicon NPN Epitaxial

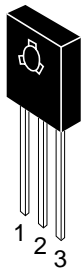
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Application

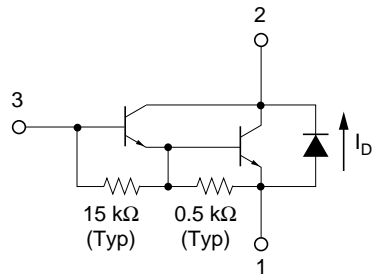
Low frequency power amplifier

Outline

TO-126 MOD



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



Absolute Maximum Ratings (Ta = 25°C)

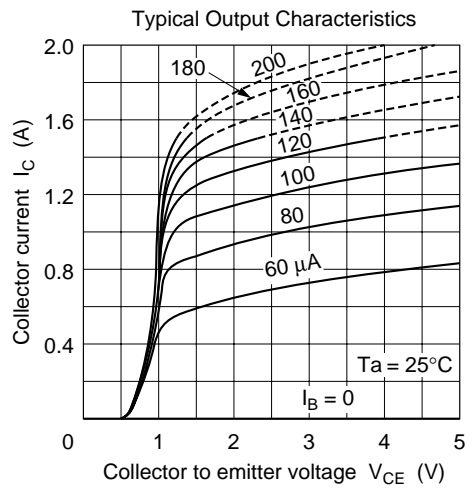
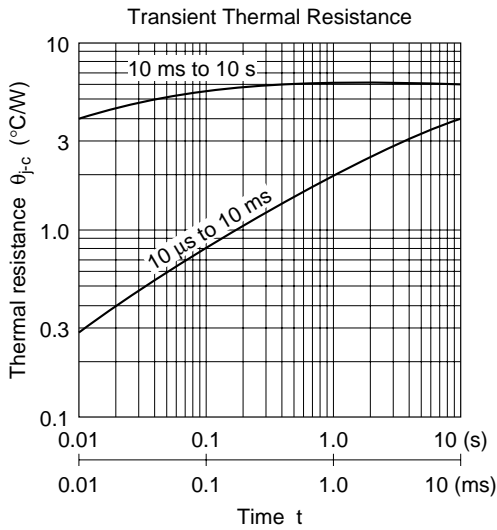
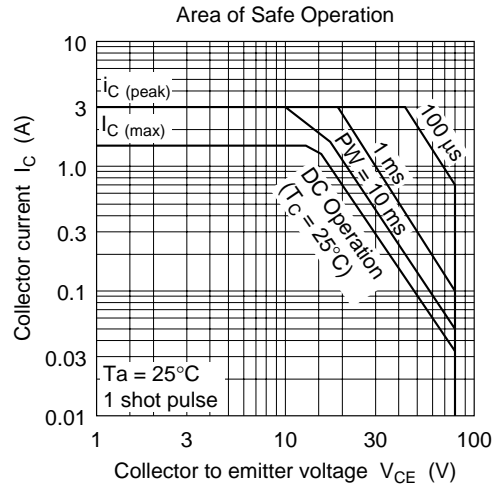
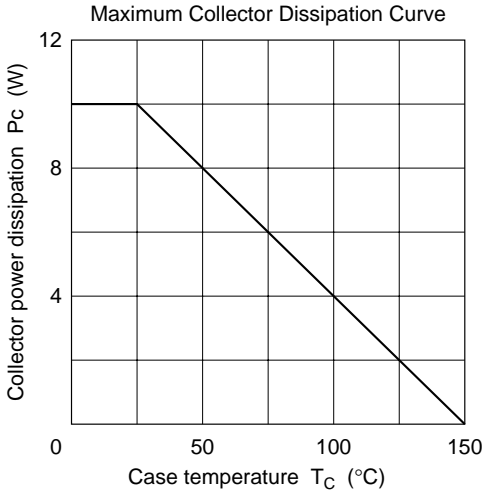
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	150	V
Collector to emitter voltage	V_{CEO}	80	V
Emitter to base voltage	V_{EBO}	8	V
Collector current	I_C	1.5	A
Collector peak current	$I_{C(peak)}$	3	A
Collector power dissipation	P_C^{*1}	10	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C
C to E diode forward current	I_D^{*1}	1.5	A

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

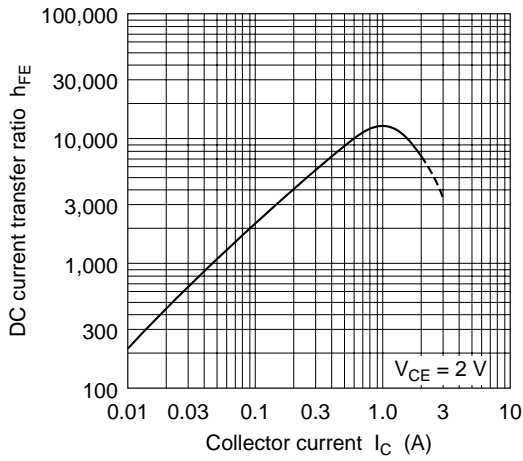
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	150	—	—	V	$I_C = 1 \text{ mA}, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	80	—	—	V	$I_C = 10 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	$I_E = 50 \text{ mA}, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	5	μA	$V_{CB} = 120 \text{ V}, I_E = 0$
	I_{CEO}	—	—	5	μA	$V_{CE} = 65 \text{ V}, R_{BE} = \infty$
DC current transfer ratio	h_{FE}	2000	—	—		$V_{CE} = 2 \text{ V}, I_C = 0.15 \text{ A}^{*1}$
	h_{FE}	5000	—	30000		$V_{CE} = 2 \text{ V}, I_C = 1 \text{ A}^{*1}$
	h_{FE}	1000	—	—		$V_{CE} = 2 \text{ V}, I_C = 1.5 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.5	V	$I_C = 1 \text{ A}, I_B = 1 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	2.0	V	$I_C = 1 \text{ A}, I_B = 1 \text{ mA}^{*1}$
C to E diode forward voltage	V_D	—	—	3.0	V	$I_D = 1.5 \text{ A}^{*1}$

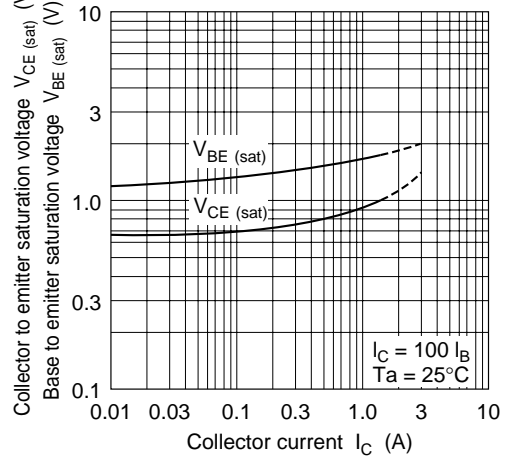
Note: 1. Pulse test.



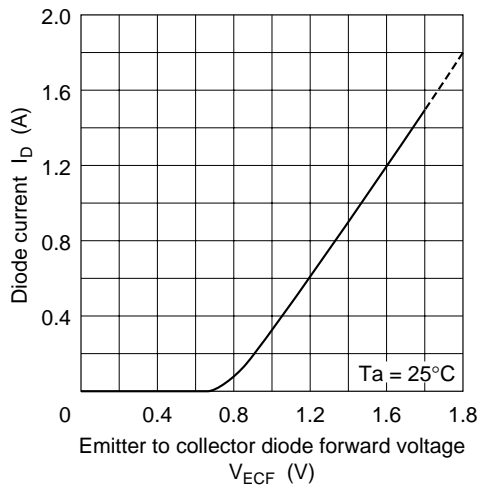
DC Current Transfer Ratio vs. Collector Current

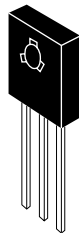
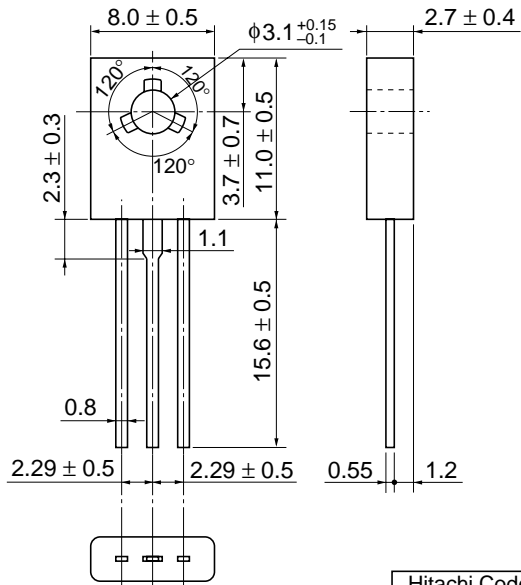


Saturation Voltage vs. Collector Current



Typical Characteristics of Emitter to Collector Diode





Hitachi Code	TO-126 Mod
JEDEC	—
EIAJ	—
Weight (reference value)	0.67 g

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