

2SD2046

Silicon NPN Epitaxial, Darlington

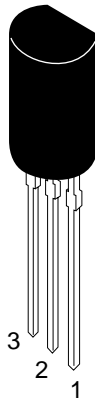
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Application

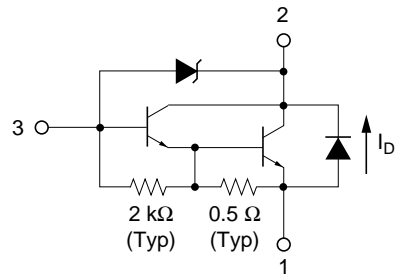
Low frequency power amplifier

Outline

TO-92MOD



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



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

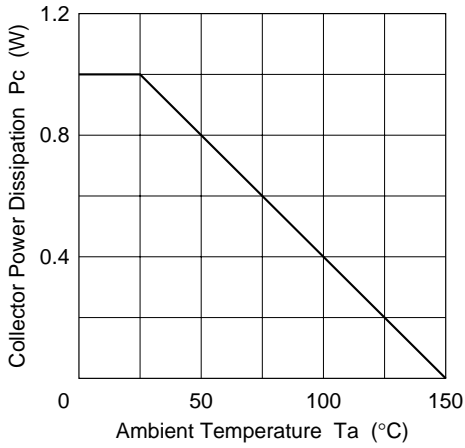
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	50	V
Emitter to base voltage	V_{EBO}	7	V
Collector current	I_{C}	1.5	A
Collector peak current	$i_{\text{c (peak)}}$	3.0	A
Collector power dissipation	P_{C}	1.0	W
Junction temperature	T_{j}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$
E to C diode forward current	I_{D}	1.5	A

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

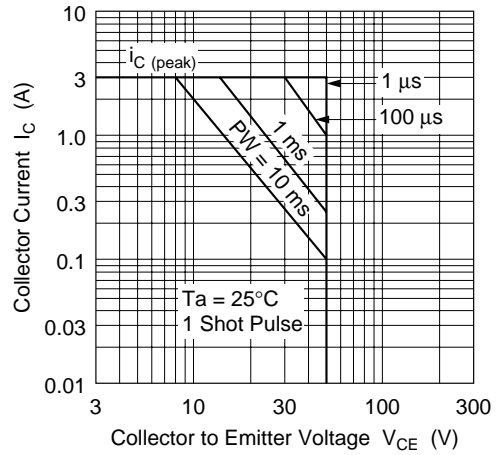
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage (Zener breakdown voltage)	$V_{(\text{BR})\text{CBO}}$ (V_{z})	50	60	70	V	$I_{\text{C}} = 0.1 \text{ mA}$, $I_{\text{E}} = \infty$
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	50	—	—	V	$I_{\text{C}} = 10 \text{ mA}$, $R_{\text{BE}} = \infty$
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_{CEO}	—	—	10	μA	$V_{\text{CE}} = 40 \text{ V}$, $R_{\text{BE}} = \infty$
DC current transfer ratio	h_{FE}	2000	—	10000		$V_{\text{CE}} = 3 \text{ V}$, $I_{\text{C}} = 1 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{\text{CE}(\text{sat})1}$	—	—	1.5	V	$I_{\text{C}} = 1 \text{ A}$, $I_{\text{B}} = 1 \text{ mA}^{*1}$
	$V_{\text{CE}(\text{sat})2}$	—	—	2.0	V	$I_{\text{C}} = 1.5 \text{ A}$, $I_{\text{B}} = 1.5 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{\text{BE}(\text{sat})1}$	—	—	2.0	V	$I_{\text{C}} = 1 \text{ A}$, $I_{\text{B}} = 1 \text{ mA}^{*1}$
	$V_{\text{BE}(\text{sat})2}$	—	—	2.5	V	$I_{\text{C}} = 1.5 \text{ A}$, $I_{\text{B}} = 1.5 \text{ mA}^{*1}$
E to C diode forward voltage	V_{D}	—	—	3.0	V	$I_{\text{D}} = 1.5 \text{ A}^{*1}$

Note: 1. Pulse test

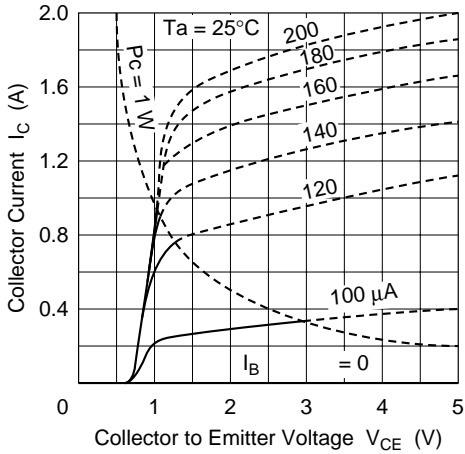
Maximum Collector Dissipation Curve



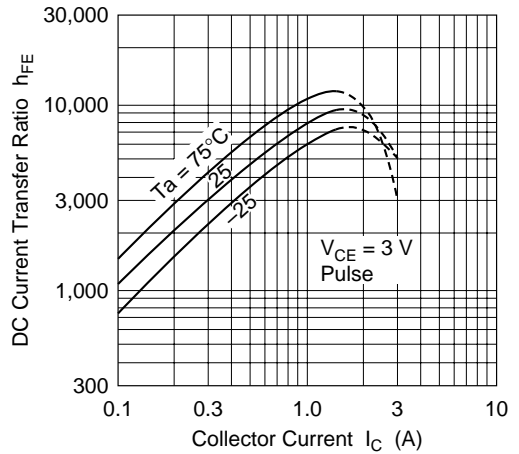
Area of Safe Operation

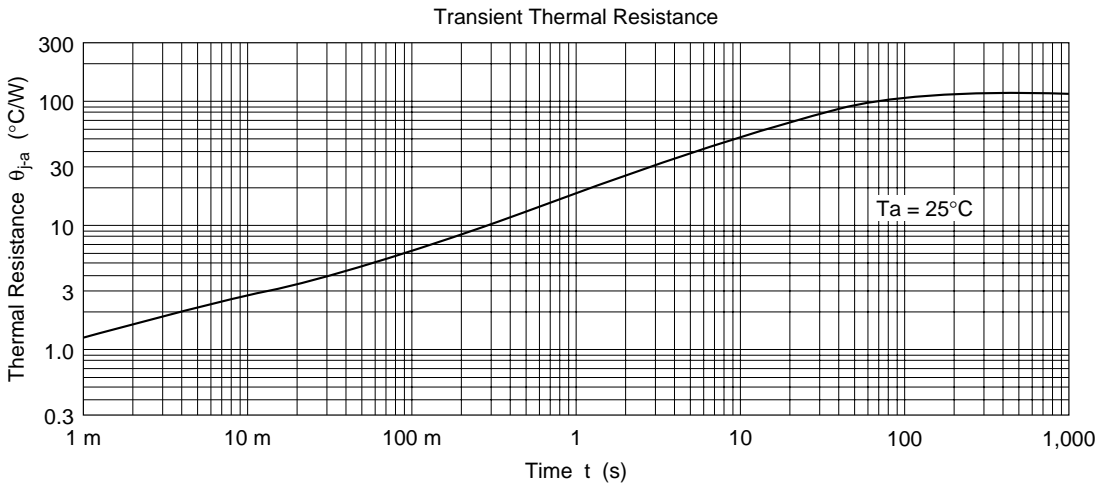
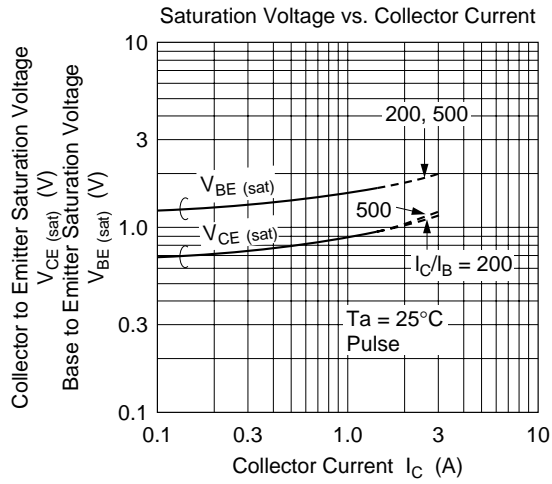


Typical Output Characteristics



DC Current Transfer Ratio vs. Collector Current







Hitachi Code	TO-92 Mod
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.35 g

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