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# 2SD974

Silicon NPN Epitaxial

# HITACHI

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## Application

- Power switching
- TV horizontal deflection output

## Outline

TO-92MOD



1. Emitter
2. Collector
3. Base

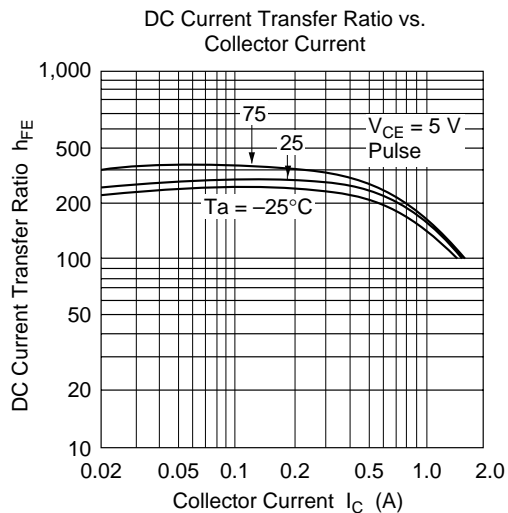
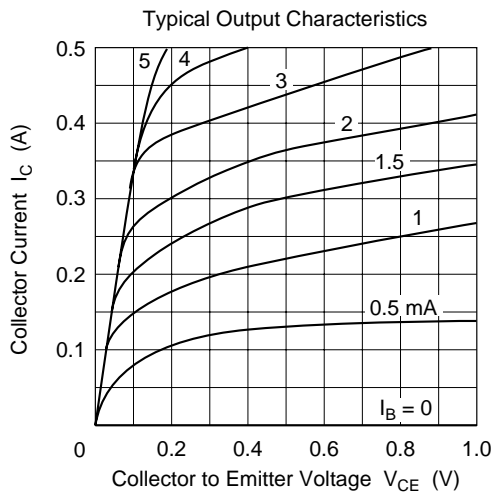
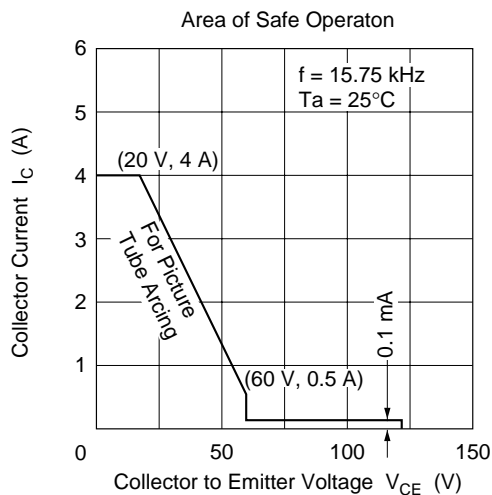
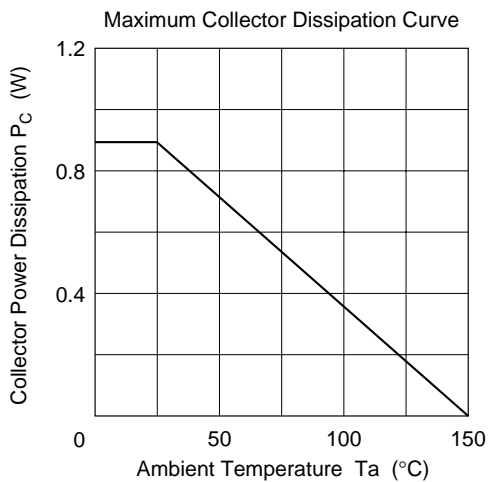
**Absolute Maximum Ratings** ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{\text{CBO}}$	120	V
Collector to emitter voltage	$V_{\text{CEO}}$	60	V
Emitter to base voltage	$V_{\text{EBO}}$	5	V
Collector current	$I_{\text{C}}$	1	A
Collector peak current	$i_{\text{C(peak)}}$	1.5	A
Surge collector current	$I_{\text{C(surge)}}$	4	A
Collector power dissipation	$P_{\text{C}}$	0.9	W
Junction temperature	$T_{\text{j}}$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

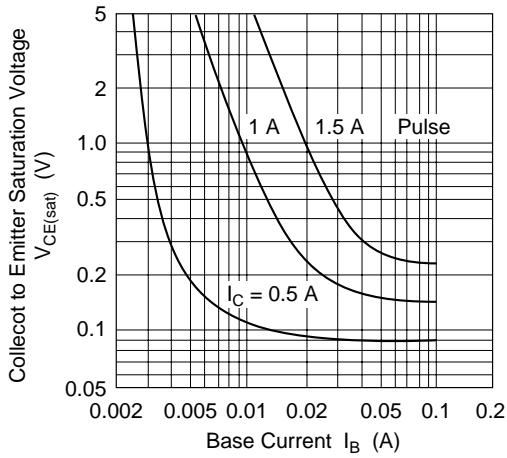
**Electrical Characteristics** ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	120	—	—	V	$I_{\text{C}} = 10 \mu\text{A}$ , $I_{\text{E}} = 0$
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	60	—	—	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	$I_{\text{CBO}}$	—	—	1.0	$\mu\text{A}$	$V_{\text{CB}} = 100 \text{ V}$ , $I_{\text{E}} = 0$
DC current transfer ratio	$h_{\text{FE}}$	150	—	—		$V_{\text{CE}} = 5 \text{ V}$ , $I_{\text{C}} = 1 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{\text{CE(sat)}}$	—	—	0.3	V	$I_{\text{C}} = 1 \text{ A}$ , $I_{\text{B}} = 0.05 \text{ A}^{*1}$
Base to emitter saturation voltage	$V_{\text{BE(sat)}}$	—	—	1.2	MHz	
Fall time	$t_{\text{f}}$	—	0.4	—	pF	$I_{\text{CP}} = 1 \text{ A}$ , $I_{\text{B1}} = -I_{\text{B2}} = 50 \text{ mA}^{*1}$

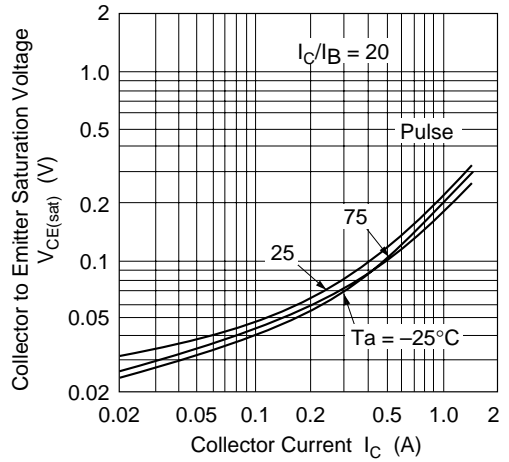
Note: 1. Pulse test



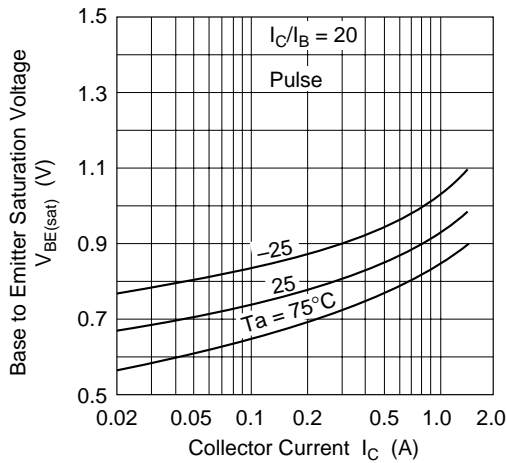
Collector to Emitter Saturation Voltage vs. Base Current



Collector to Emitter Saturation Voltage vs. Collector Current



Base to Emitter Saturation Voltage vs. Collector Current





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

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