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# 2SC4499(L)/(S)

Silicon NPN Triple Diffused

# HITACHI

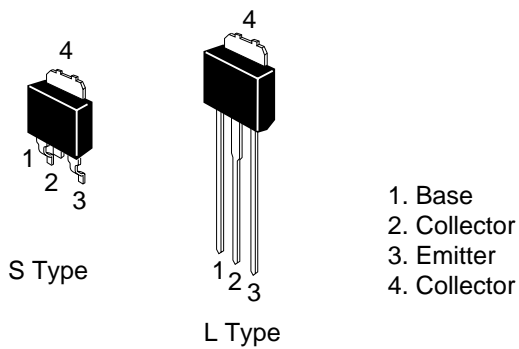
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## Application

High speed and high voltage switching

## Outline

DPAK



## 2SC4499(L)/(S)

### Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	500	V
Collector to emitter voltage	$V_{CEO}$	400	V
Emitter to base voltage	$V_{EBO}$	10	V
Collector current	$I_C$	0.5	A
Collector peak current	$I_{C(peak)}$	1.0	A
Collector power dissipation	$P_C$	0.75	W
	$P_C^{*1}$	10	
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

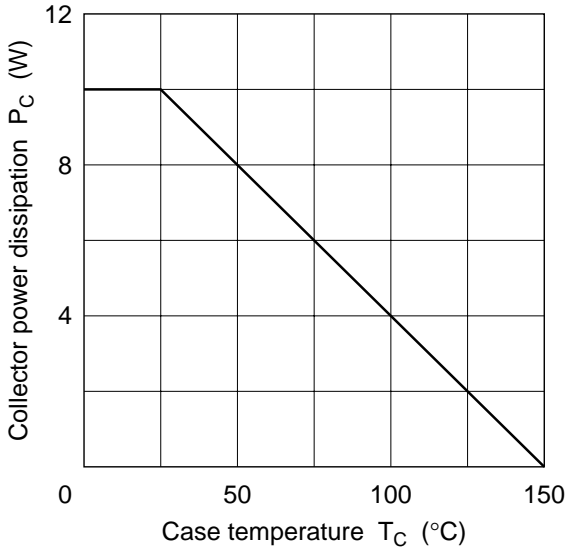
Note: 1. Value at  $T_C = 25^\circ\text{C}$ .

### Electrical Characteristics (Ta = 25°C)

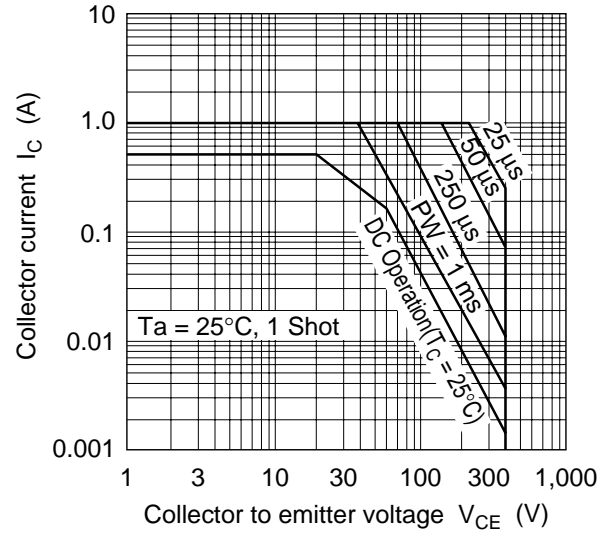
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter sustain voltage	$V_{CEO(sus)}$	400	—	—	V	$I_C = 0.1\text{ A}$ , $R_{BE} = \infty$ $L = 100\text{ mH}$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	10	—	—	V	$I_E = 10\text{ mA}$ , $I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	20	$\mu\text{A}$	$V_{CB} = 400\text{ V}$ , $I_E = 0$
	$I_{CEO}$	—	—	50		$V_{CE} = 350\text{ V}$ , $R_{BE} = \infty$
DC current transfer ratio	$h_{FE1}$	12	—	—		$V_{CE} = 5\text{ V}$ , $I_C = 0.25\text{ A}^{*1}$
	$h_{FE2}$	5	—	—		$V_{CE} = 5\text{ V}$ , $I_C = 0.5\text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.0	V	$I_C = 0.25\text{ A}$ , $I_B = 0.05\text{ A}^{*1}$
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	1.5	V	$I_C = 0.25\text{ A}$ , $I_B = 0.05\text{ A}^{*1}$
Turn on time	$t_{on}$	—	—	1.0	$\mu\text{s}$	$I_C = 0.5\text{ A}$ , $I_{B1} = -I_{B2} = 0.1\text{ A}$ ,
Storage time	$t_{stg}$	—	—	2.0	$\mu\text{s}$	$V_{CC} \cong 150\text{ V}$
Fall time	$t_f$	—	—	1.0	$\mu\text{s}$	

Note: 1. Pulse test.

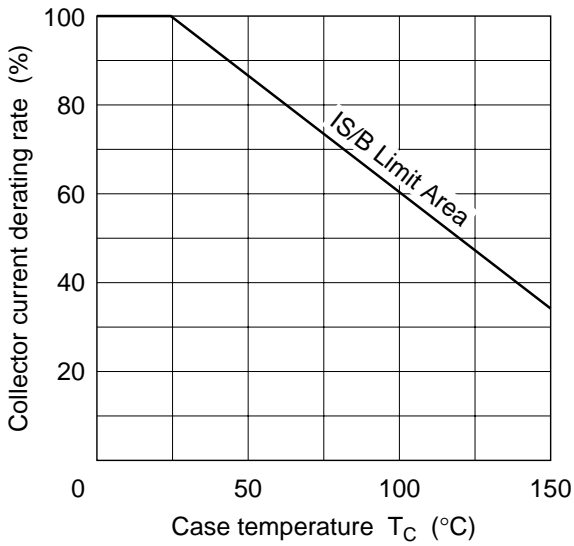
Maximum Collector Dissipation Curve



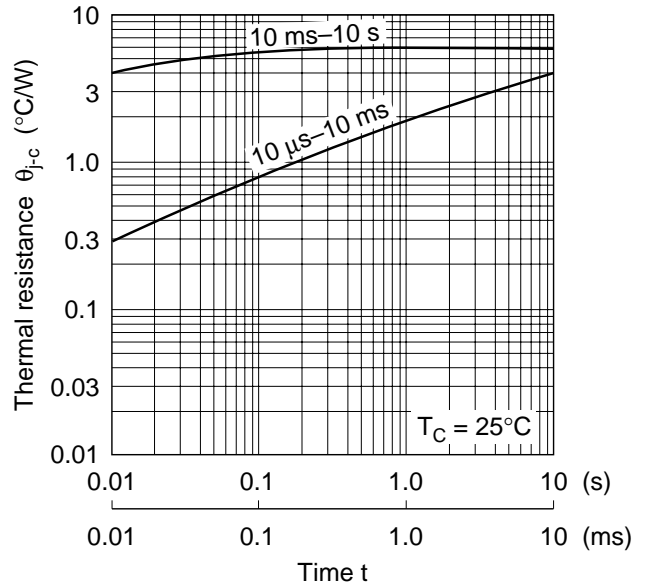
Area of Safe Operation

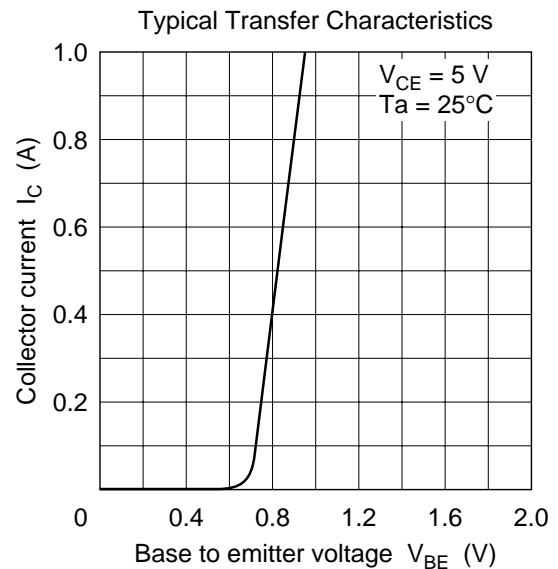
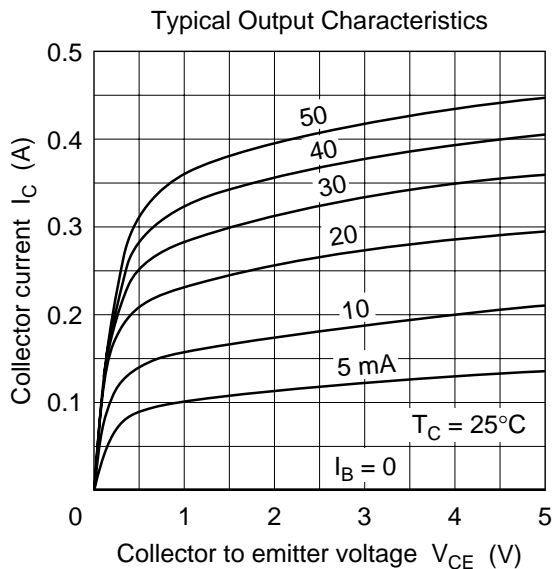
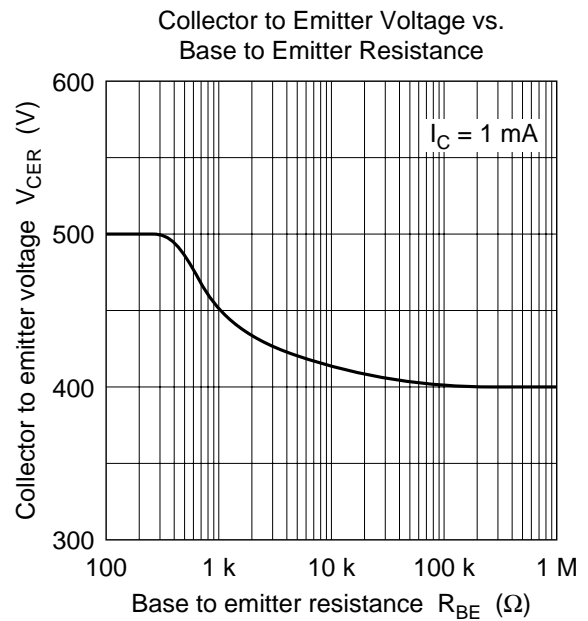
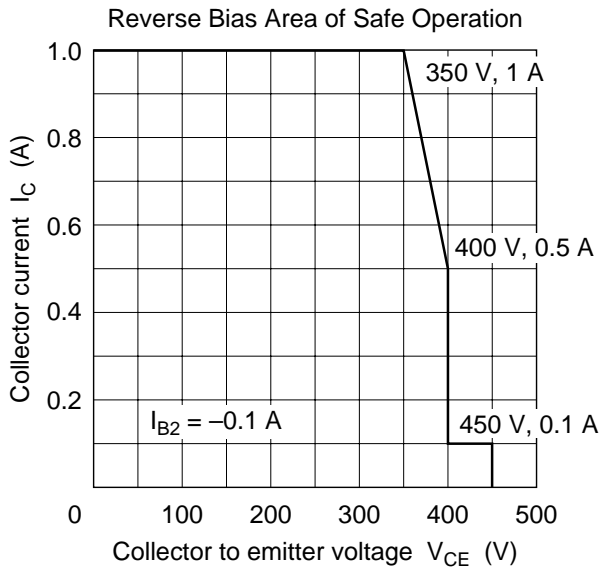


Collector Current Derating Rate

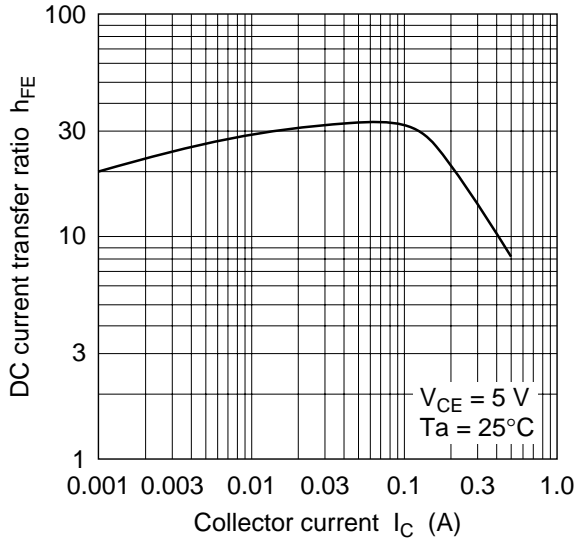


Transient Thermal Resistance

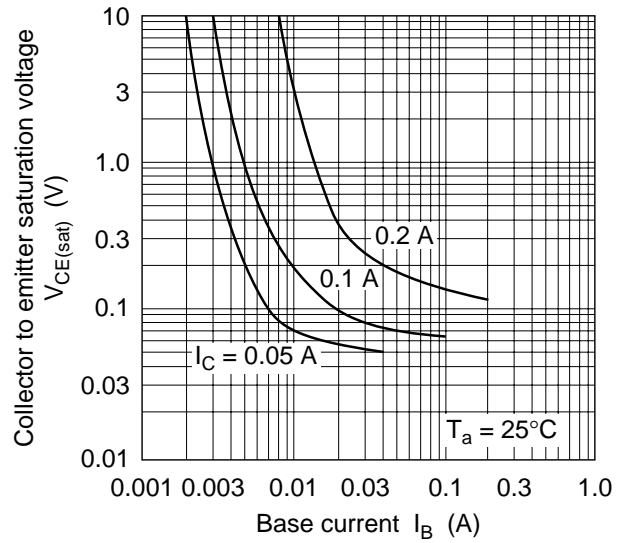




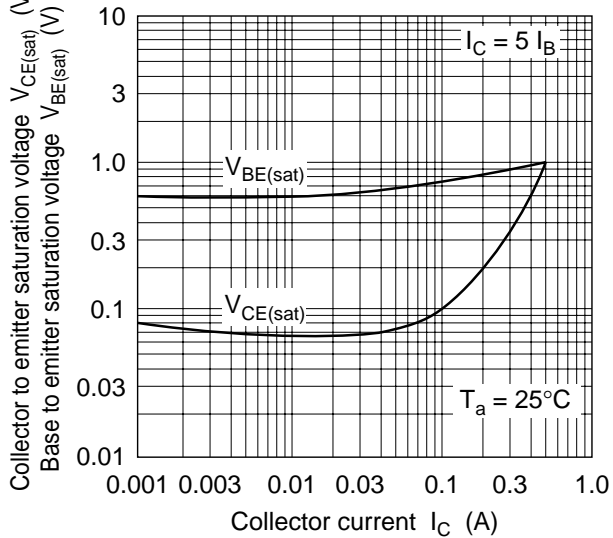
DC Current Transfer Ratio vs. Collector Current



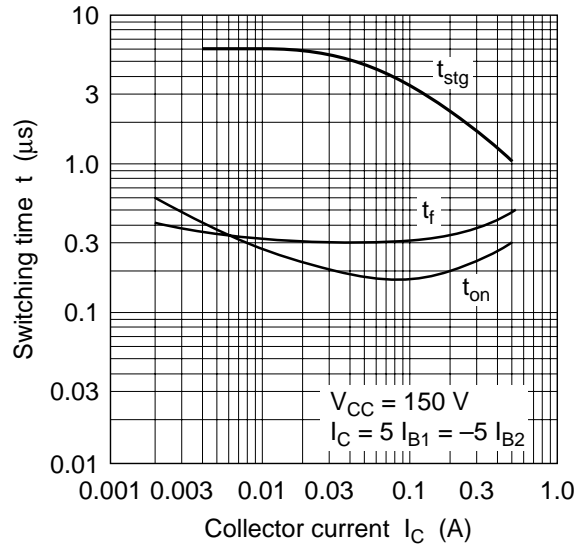
Collector to Emitter Saturation Voltage vs. Base Current

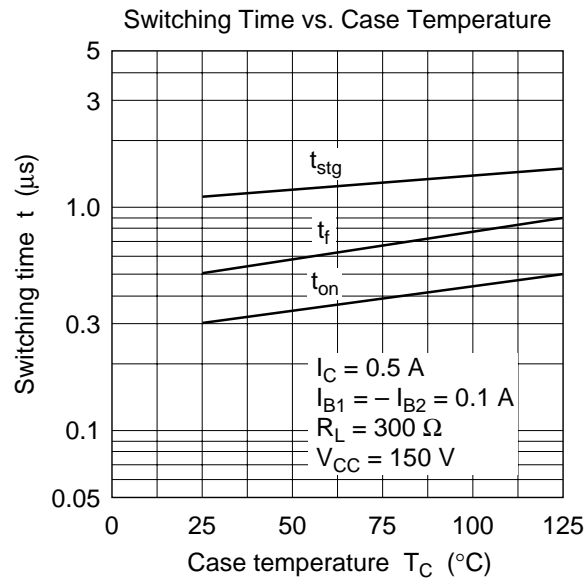


Saturation Voltage vs. Collector Current

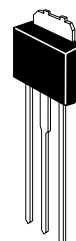
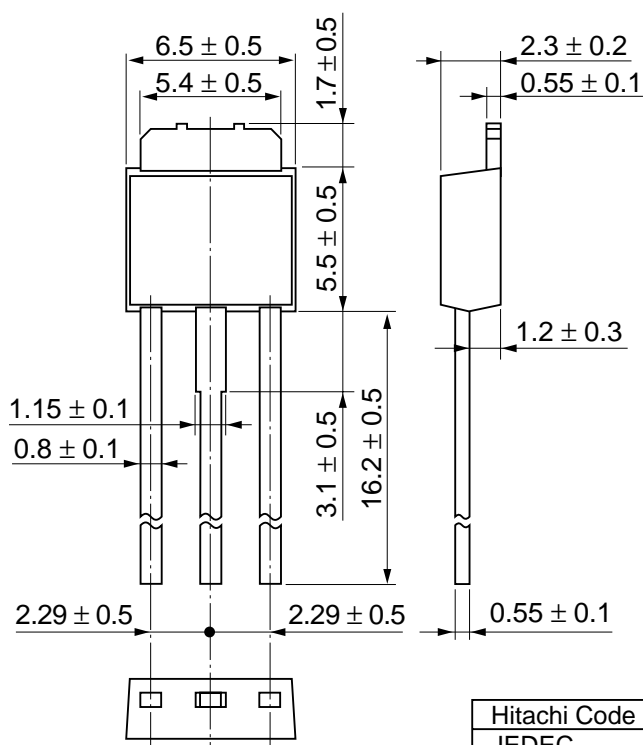


Switching Time vs. Collector Current





Unit: mm



Hitachi Code	DPAK (L)-(1)
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.42 g

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