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# 2SC1472(K)

Silicon NPN Epitaxial, Darlington

# HITACHI

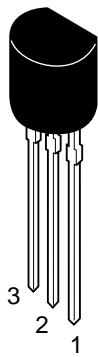
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## Application

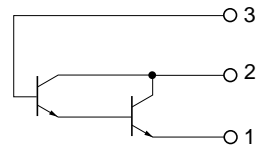
High gain amplifier

## Outline

TO-92 (1)



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



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## 2SC1472 (K)

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### Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

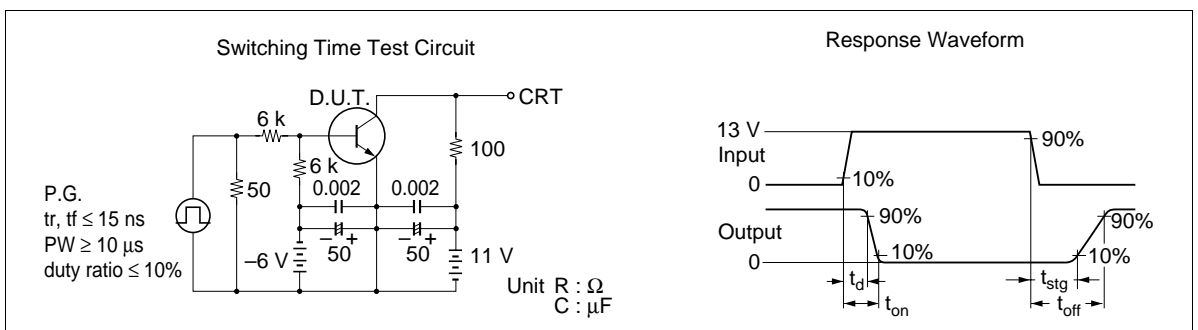
Item	Symbol	Ratings	Unit
Collector to base voltage	V <sub>CBO</sub>	40	V
Collector to emitter voltage	V <sub>CEO</sub>	30	V
Emitter to base voltage	V <sub>EBO</sub>	10	V
Collector current	I <sub>C</sub>	300	mA
Collector peak current	i <sub>C(peak)</sub>	500	mA
Collector power dissipation	P <sub>C</sub>	500	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

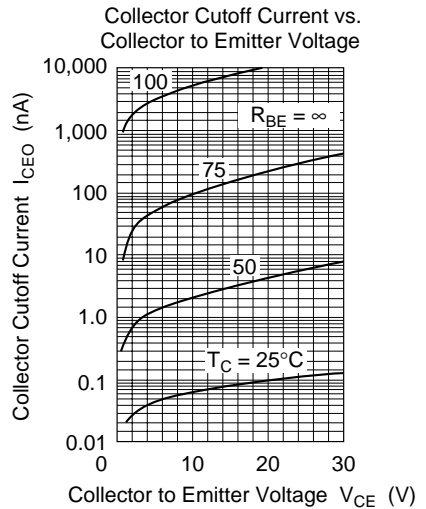
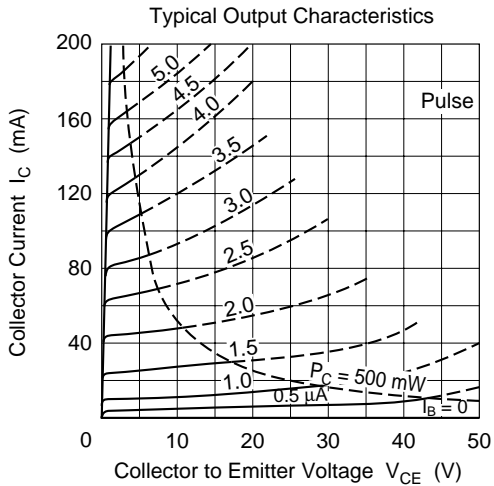
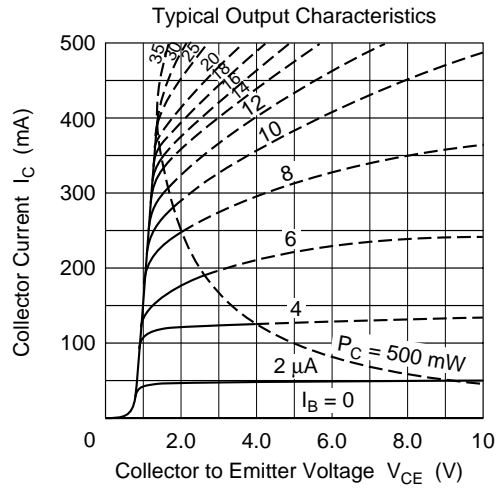
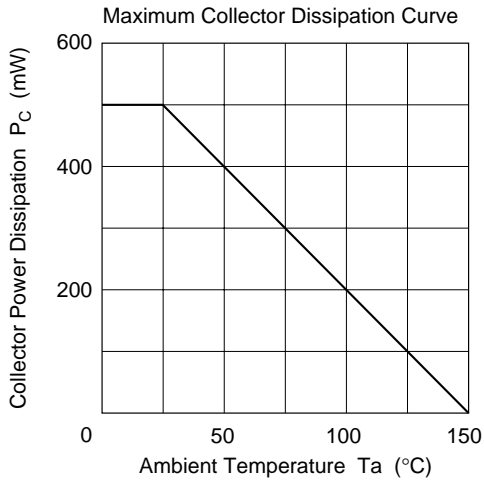
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	30	—	—	V	$I_C = 1 \text{ mA}, R_{BE} = \infty$
Collector cutoff current	$I_{CBO}$	—	—	100	nA	$V_{CB} = 30 \text{ V}, I_E = 0$
Emitter cutoff current	$I_{EBO}$	—	—	100	nA	$V_{EB} = 10 \text{ V}, I_C = 0$
DC current transfer ratio	$h_{FE1}^{*1}$	2000	—	100000		$I_C = 10 \text{ mA}, V_{CE} = 5 \text{ V}$
	$h_{FE2}^{*1}$	3000	—	—		$I_C = 100 \text{ mA}, V_{CE} = 5 \text{ V}$ (Pulse Test)
	$h_{FE3}^{*1}$	3000	—	—		$I_C = 400 \text{ mA}, V_{CE} = 5 \text{ V}$ (Pulse Test)
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.5	V	$I_C = 100 \text{ mA}, I_B = 0.1 \text{ mA}$
Base to emitter voltage	$V_{BE(sat)}$	—	—	2.0	V	$I_C = 100 \text{ mA}, I_B = 0.1 \text{ mA}$
Gain bandwidth product	$f_T$	50	—	—	MHz	$V_{CE} = 5 \text{ V}, I_C = 10 \text{ mA}$
Collector output capacitance	$C_{ob}$	—	—	10	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$
Turn on time	$t_{on}$	—	60	—	ns	$V_{CC} = 11 \text{ V}$ $I_C = 100 \text{ mA}, I_{B1} = 100 \text{ mA}$ $I_{B2} = -I_{B1}$
Turn off time	$t_{off}$	—	800	—	ns	
Storage time	$t_{stg}$	—	350	—	ns	

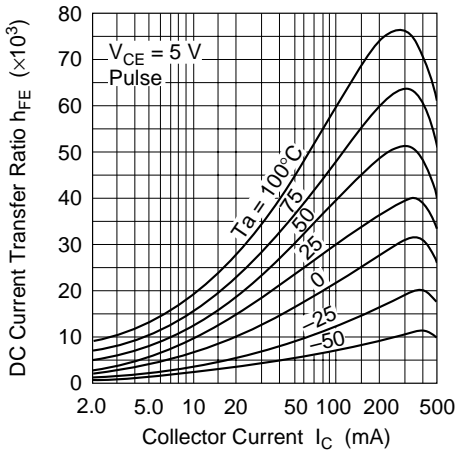
Note: 1. The 2SC1472(K) is grouped by  $h_{FE}$  as follows.

	A	B
$h_{FE1}$	2000 to 100000	5000 to 100000
$h_{FE2}$	3000 min	10000 min
$h_{FE3}$	3000 min	10000 min

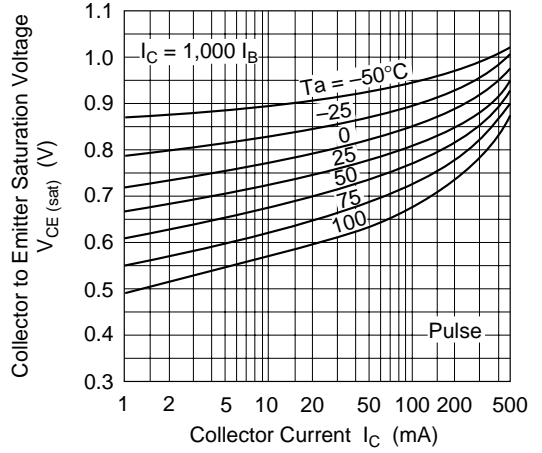




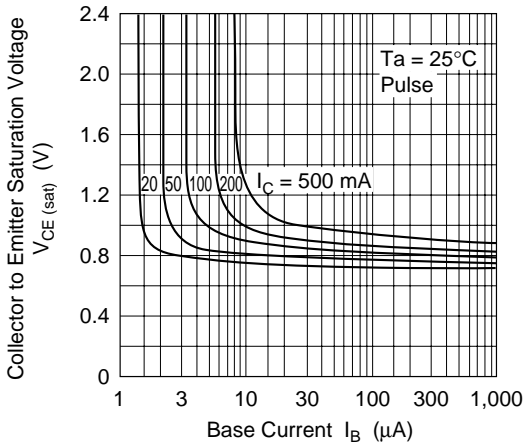
DC Current Transfer Ratio vs. Collector Current



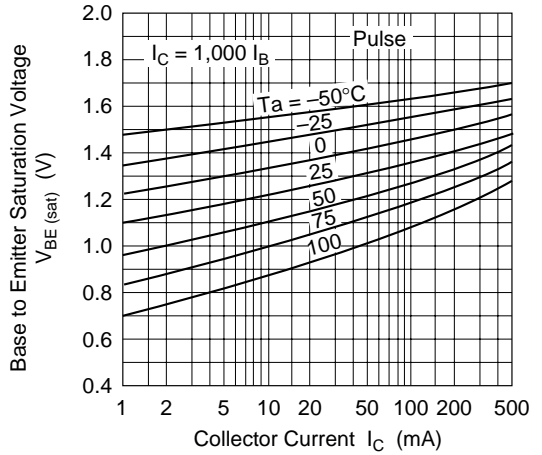
Collector to Emitter Saturation Voltage vs. Collector Current

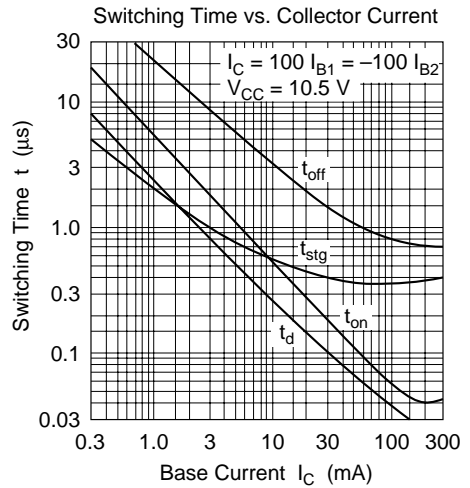
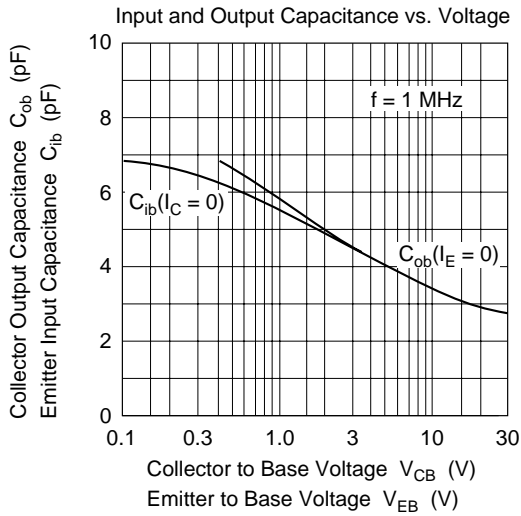


Collector to Emitter Saturation Voltage vs. Base Current

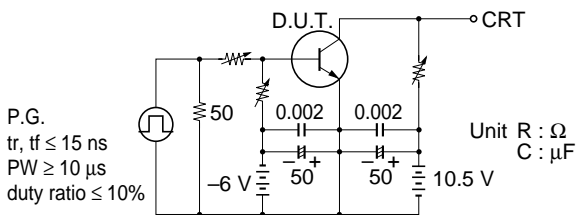


Base to Emitter Saturation Voltage vs. Collector Current

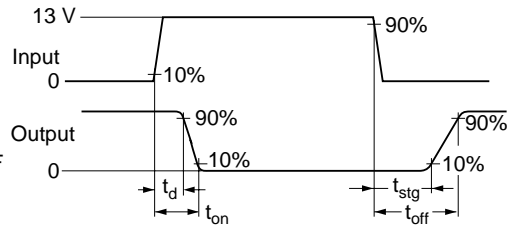


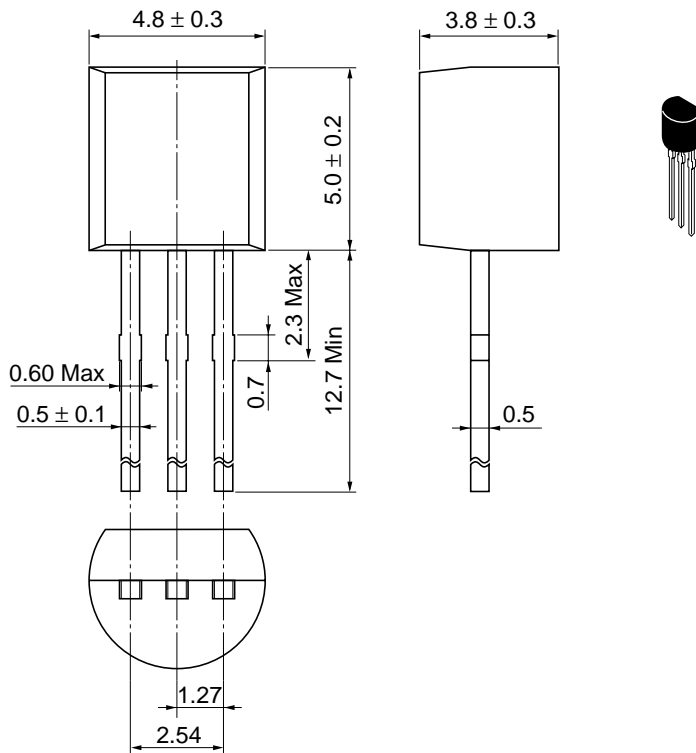


Switching Time Test Circuit



Response Waveform





Hitachi Code	TO-92 (1)
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	0.25 g

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# HITACHI

## Hitachi, Ltd.

Semiconductor & Integrated Circuits.  
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan  
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL      North America      : <http://semiconductor.hitachi.com/>  
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## For further information write to:

Hitachi Semiconductor  
(America) Inc.  
179 East Tasman Drive,  
San Jose, CA 95134  
Tel: <1> (408) 433-1990  
Fax: <1> (408) 433-0223

Hitachi Europe GmbH  
Electronic components Group  
Dornacher Straße 3  
D-85622 Feldkirchen, Munich  
Germany  
Tel: <49> (89) 9 9180-0  
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.  
Electronic Components Group.  
Whitebrook Park  
Lower Cookham Road  
Maidenhead  
Berkshire SL6 8YA, United Kingdom  
Tel: <44> (1628) 585000  
Fax: <44> (1628) 778322

Hitachi Asia Pte. Ltd.  
16 Collyer Quay #20-00  
Hitachi Tower  
Singapore 049318  
Tel: 535-2100  
Fax: 535-1533

Hitachi Asia Ltd.  
Taipei Branch Office  
3F, Hung Kuo Building, No.167,  
Tun-Hwa North Road, Taipei (105)  
Tel: <886> (2) 2718-3666  
Fax: <886> (2) 2718-8180

Hitachi Asia (Hong Kong) Ltd.  
Group III (Electronic Components)  
7/F., North Tower, World Finance Centre,  
Harbour City, Canton Road, Tsim Sha Tsui,  
Kowloon, Hong Kong  
Tel: <852> (2) 735 9218  
Fax: <852> (2) 730 0281  
Telex: 40815 HITEC HX

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