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# 2SC1472(K)

Silicon NPN Epitaxial, Darlington

# HITACHI

ADE-208-1054 (Z)

1st. Edition

Mar. 2001

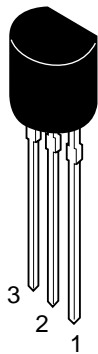
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## Application

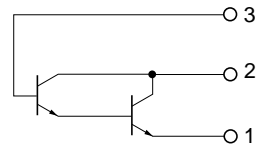
High gain amplifier

## Outline

TO-92 (1)



1. Emitter
2. Collector
3. Base



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## 2SC1472 (K)

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

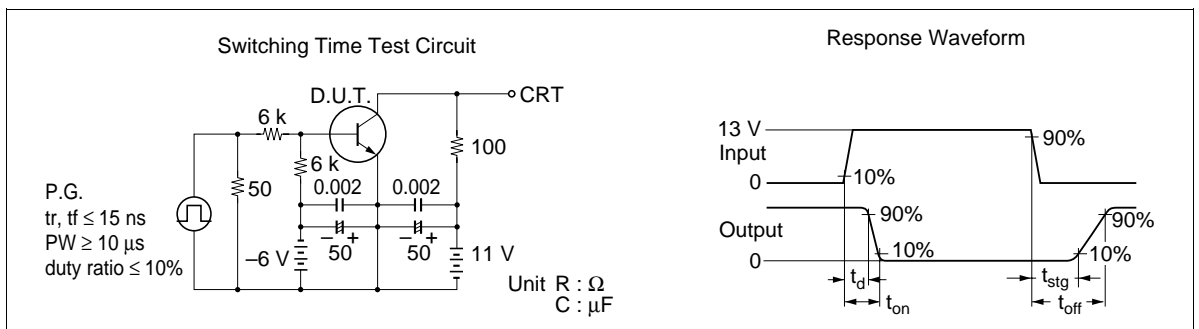
Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	40	V
Collector to emitter voltage	$V_{CEO}$	30	V
Emitter to base voltage	$V_{EBO}$	10	V
Collector current	$I_C$	300	mA
Collector peak current	$i_{C(peak)}$	500	mA
Collector power dissipation	$P_C$	500	mW
Junction temperature	$T_J$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

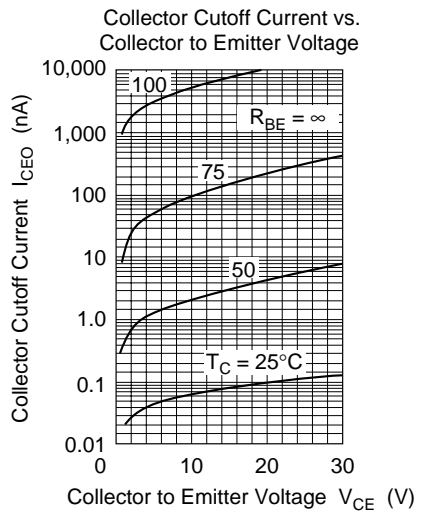
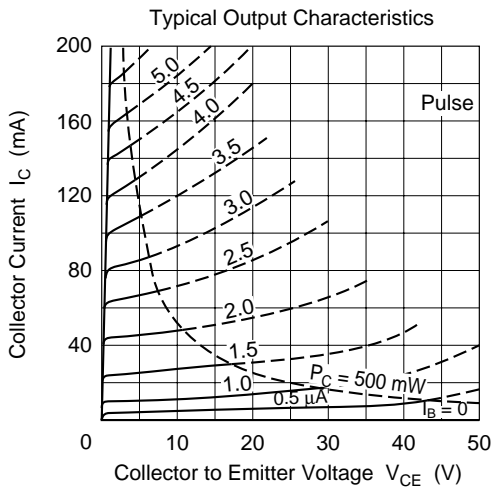
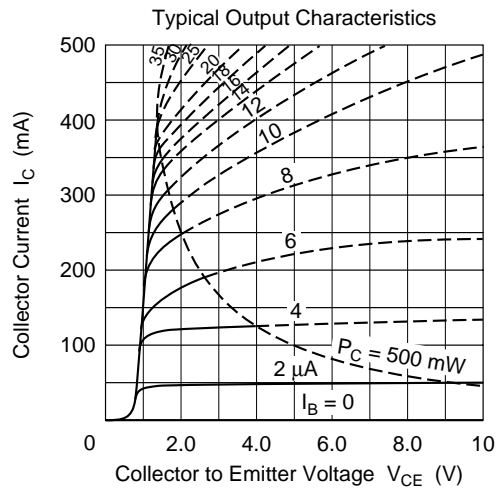
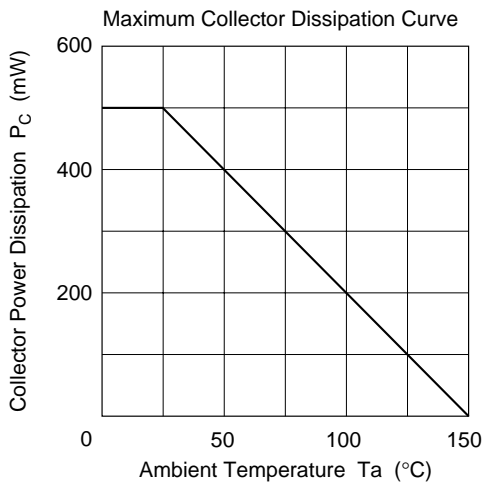
Electrical Characteristics (Ta = 25°C)

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	

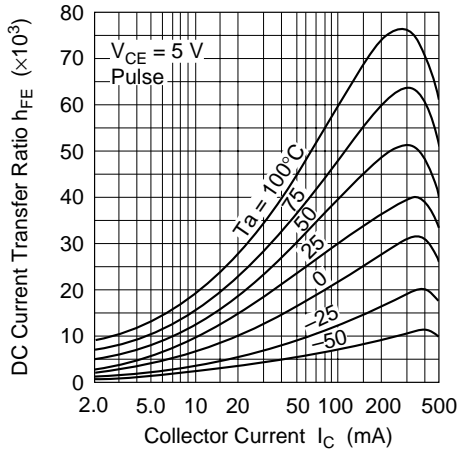
Note: 1. The 2SC1472(K) is grouped by  $h_{FE}$  as follows.

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

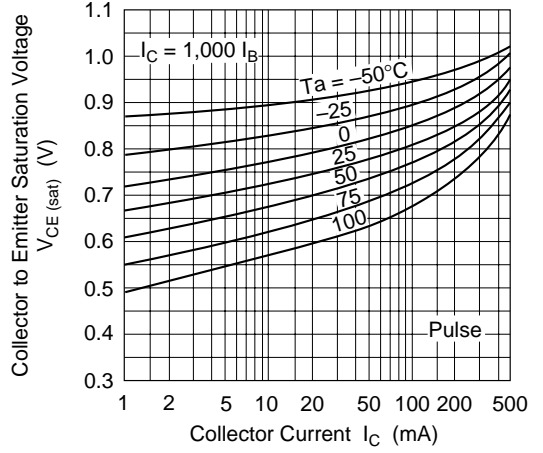




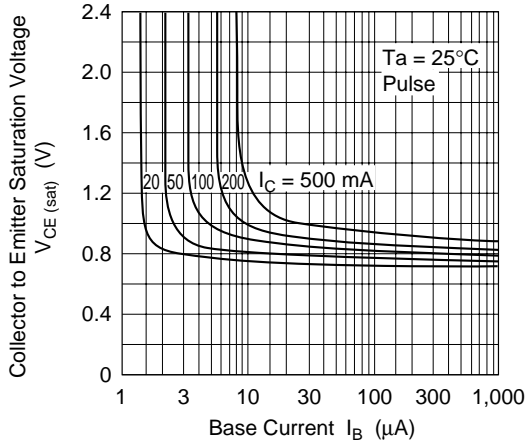
DC Current Transfer Ratio vs. Collector Current



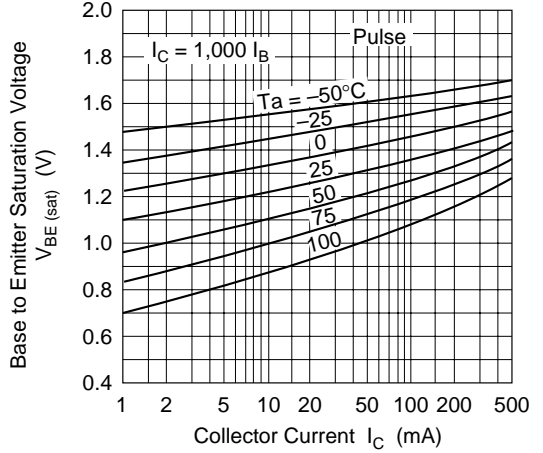
Collector to Emitter Saturation Voltage vs. Collector Current

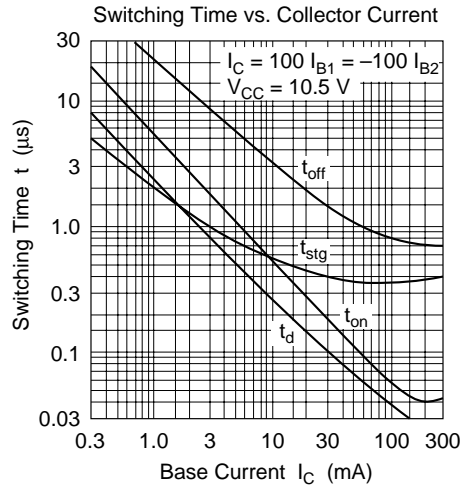
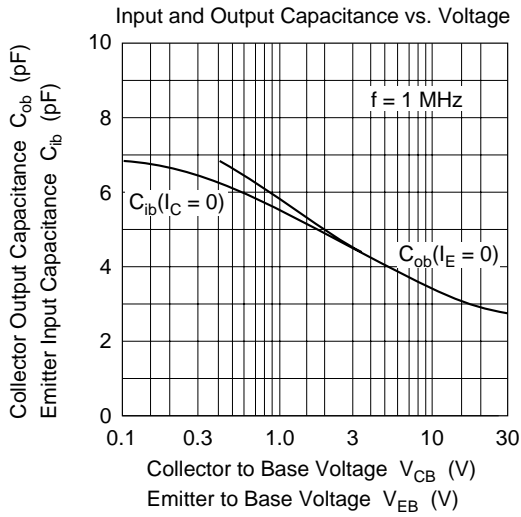


Collector to Emitter Saturation Voltage vs. Base Current

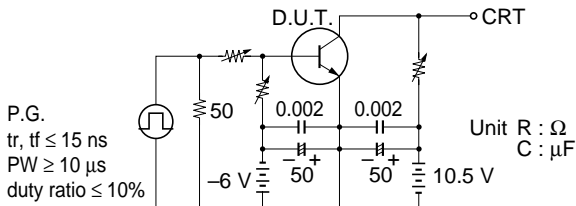


Base to Emitter Saturation Voltage vs. Collector Current

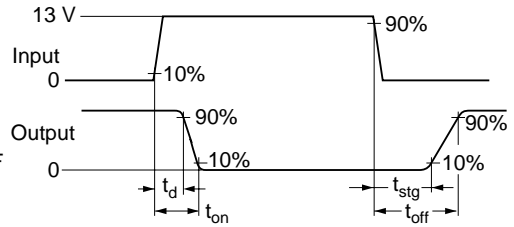




Switching Time Test Circuit

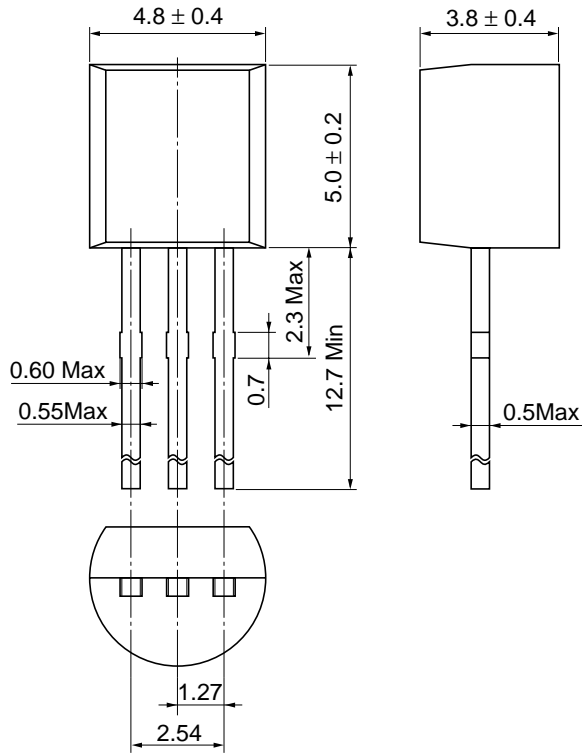


Response Waveform



Package Dimensions

As of January, 2001  
Unit: mm



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

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