

# 2SC1472(K)

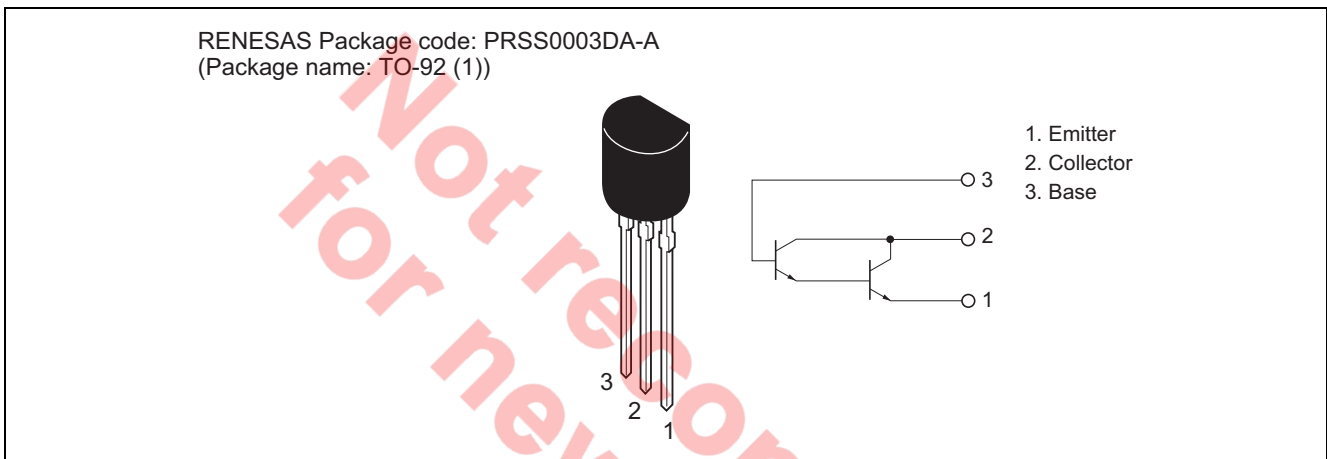
Silicon NPN Epitaxial, Darlington

REJ03G0688-0200  
 (Previous ADE-208-1054)  
 Rev.2.00  
 Aug.10.2005

## Application

High gain amplifier

## Outline



## 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

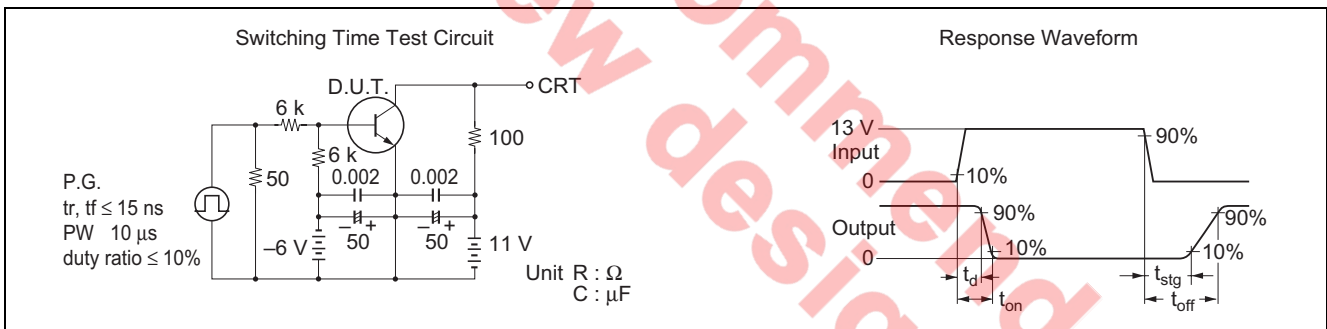
Electrical Characteristics

(Ta = 25°C)

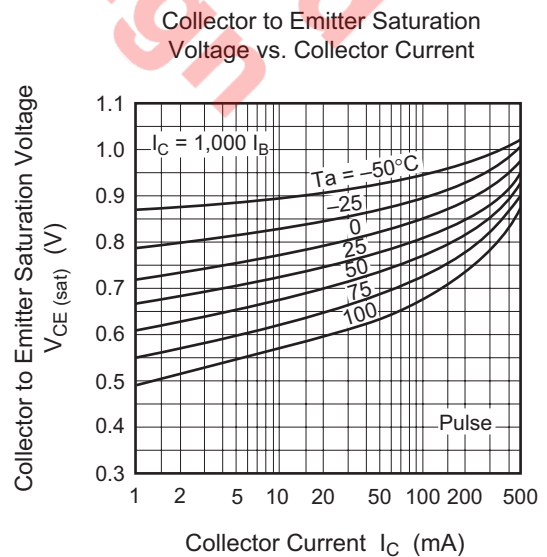
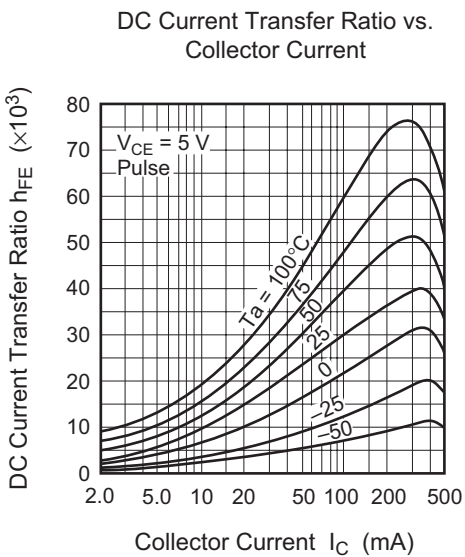
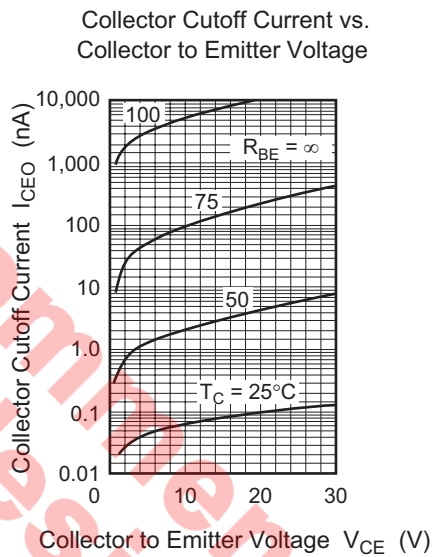
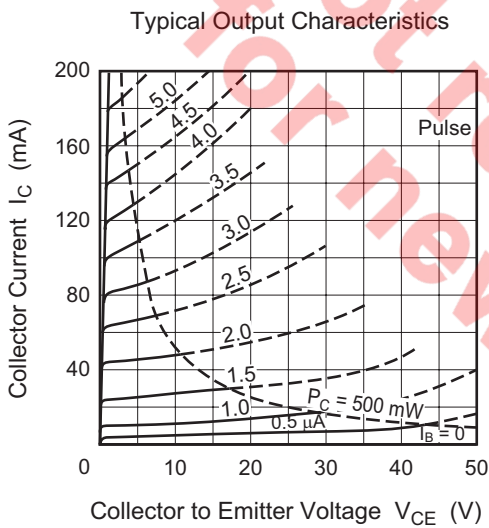
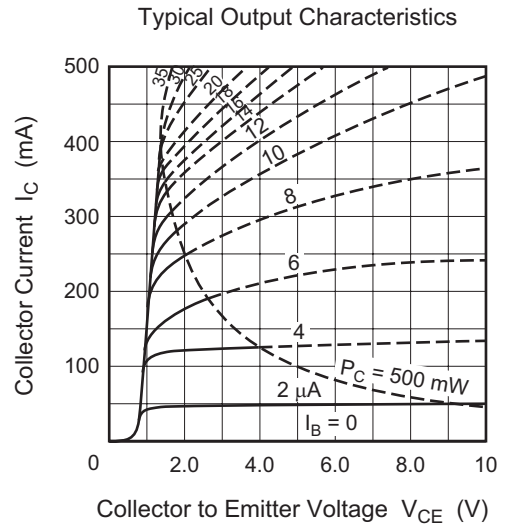
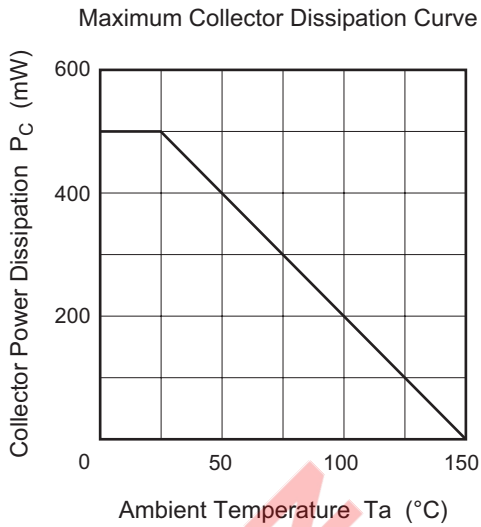
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	30	—	—	V	$I_C = 1 \text{ mA}, R_{BE} = \infty$
Collector cutoff current	$I_{CBO}$	—	—	100	nA	$V_{CB} = 30 \text{ V}, I_E = 0$
Emitter cutoff current	$I_{EBO}$	—	—	100	nA	$V_{EB} = 10 \text{ V}, I_C = 0$
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.

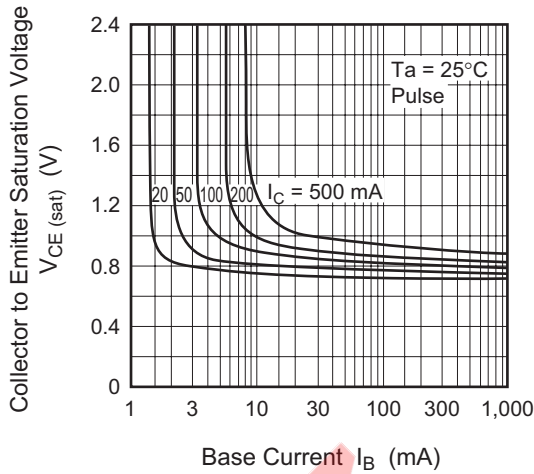
	A	B
$h_{FE1}$	2000 to 100000	5000 to 100000
$h_{FE2}$	3000 min	10000 min
$h_{FE3}$	3000 min	10000 min



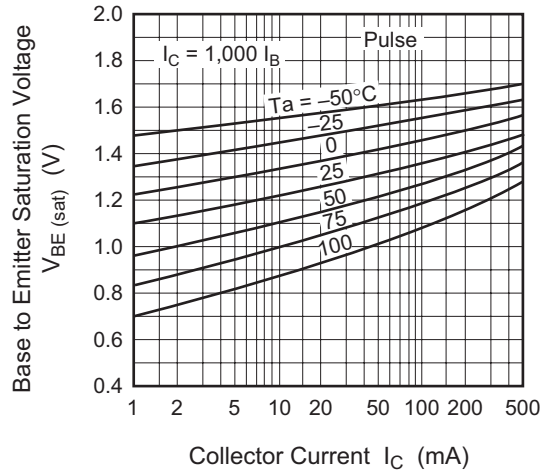
Main Characteristics



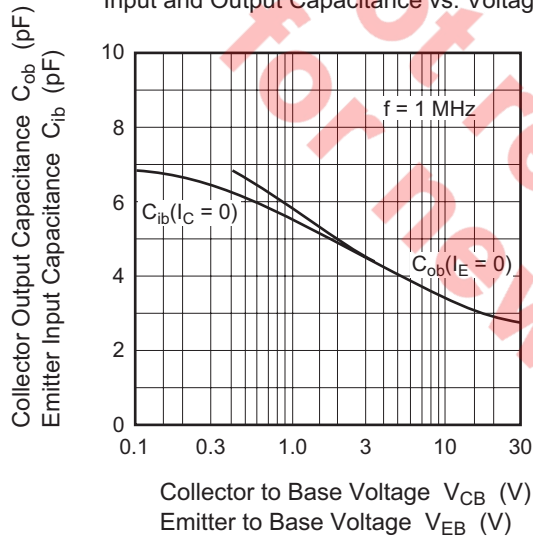
Collector to Emitter Saturation Voltage vs. Base Current



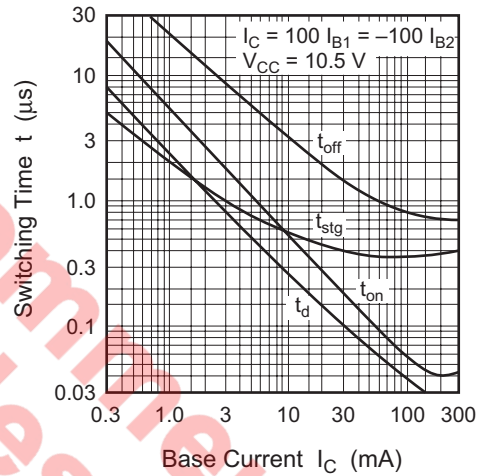
Base to Emitter Saturation Voltage vs. Collector Current



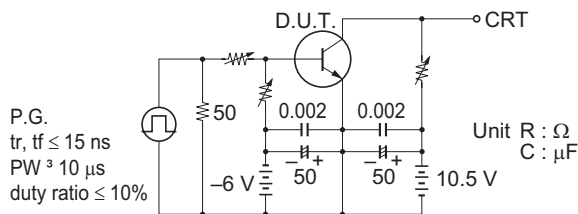
Input and Output Capacitance vs. Voltage



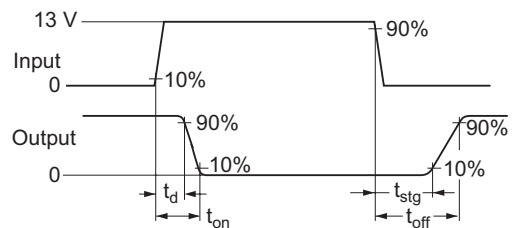
Switching Time vs. Collector Current



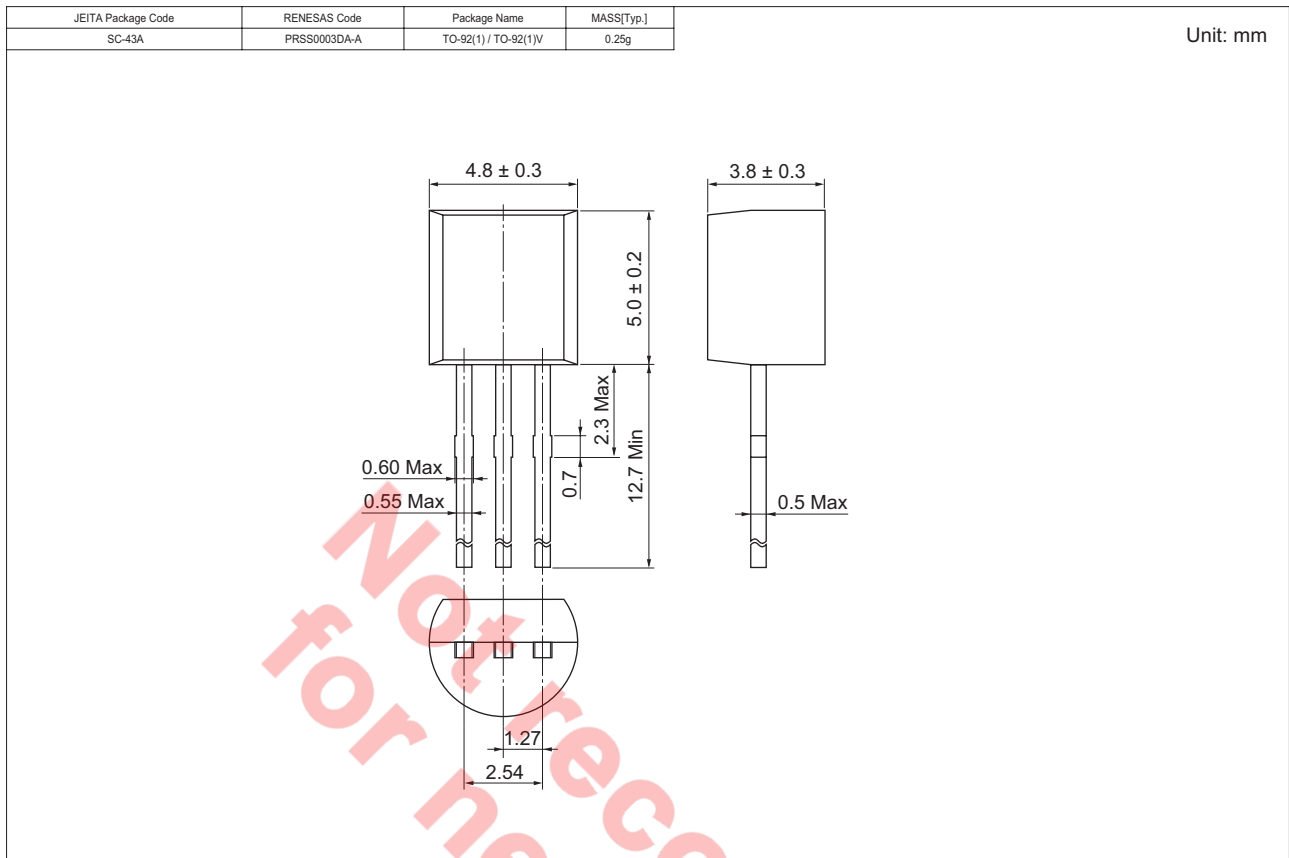
Switching Time Test Circuit



Response Waveform



## Package Dimensions



## Ordering Information

Part Name	Quantity	Shipping Container
2SC1472KATZ-E	2500	Hold Box, Radial Taping
2SC1472KBTZ-E		

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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