

2SC1472(K)

Silicon NPN Epitaxial, Darlington

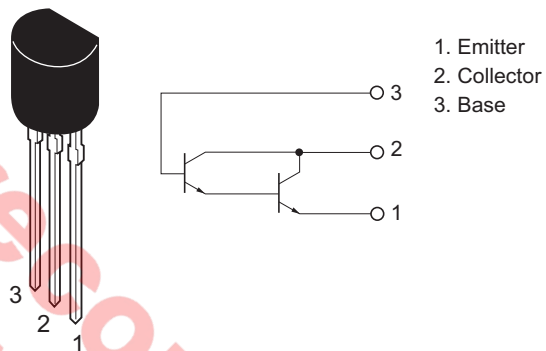
REJ03G0688-0200
(Previous ADE-208-1054)
Rev.2.00
Aug.10.2005

Application

High gain amplifier

Outline

RENESAS Package code: PRSS0003DA-A
(Package name: TO-92 (1))



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

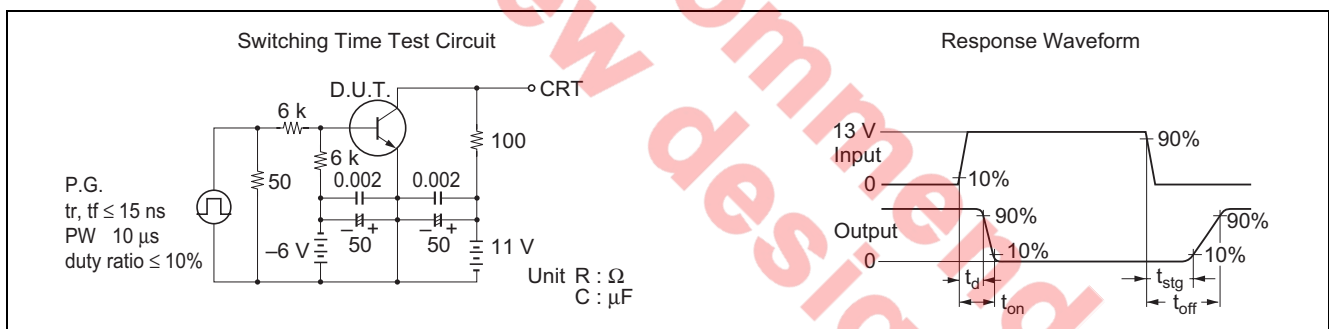
Electrical Characteristics

(Ta = 25°C)

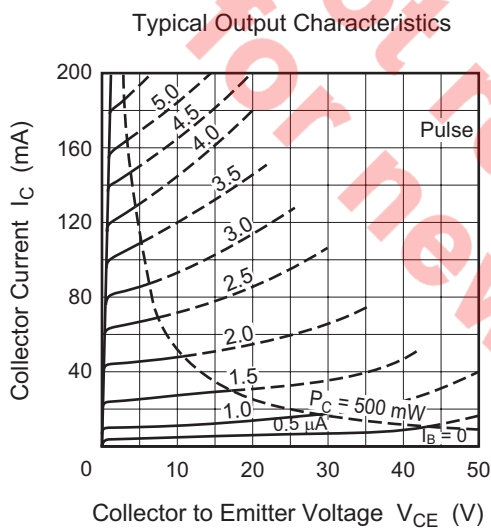
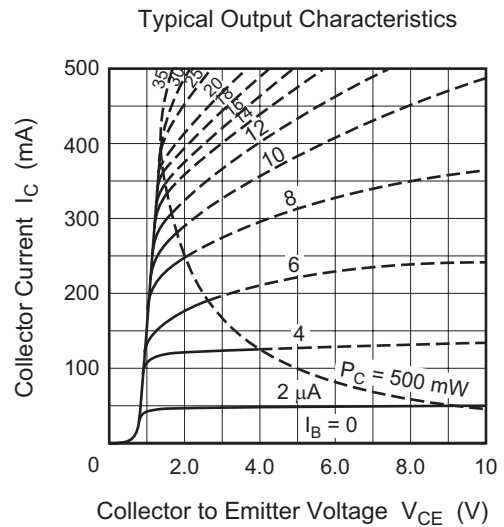
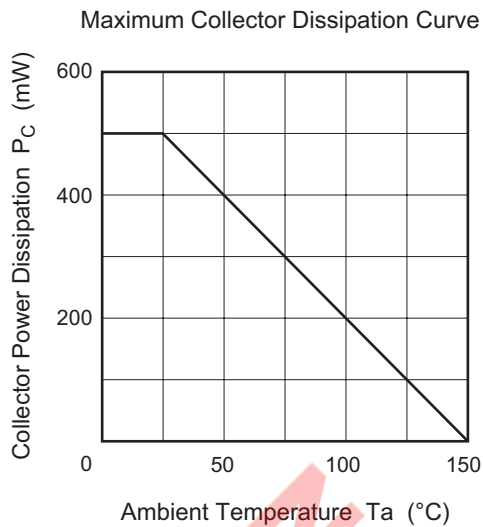
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	30	—	—	V	$I_C = 1 \text{ mA}$, $R_{BE} = \infty$
Collector cutoff current	I_{CBO}	—	—	100	nA	$V_{CB} = 30 \text{ V}$, $I_E = 0$
Emitter cutoff current	I_{EBO}	—	—	100	nA	$V_{EB} = 10 \text{ V}$, $I_C = 0$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

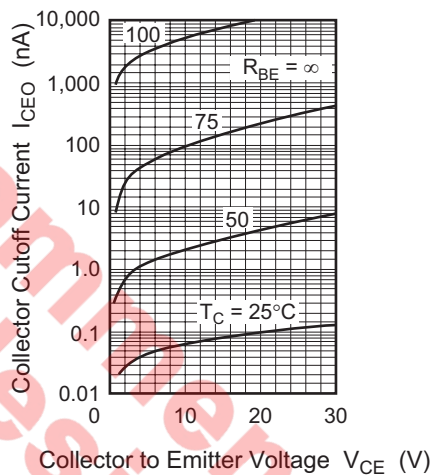
	A	B
h_{FE1}	2000 to 100000	5000 to 100000
h_{FE2}	3000 min	10000 min
h_{FE3}	3000 min	10000 min



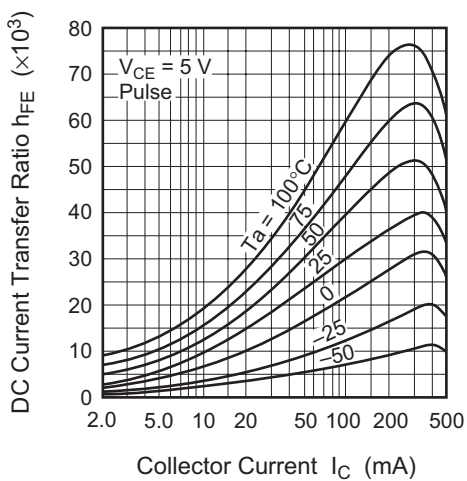
Main Characteristics



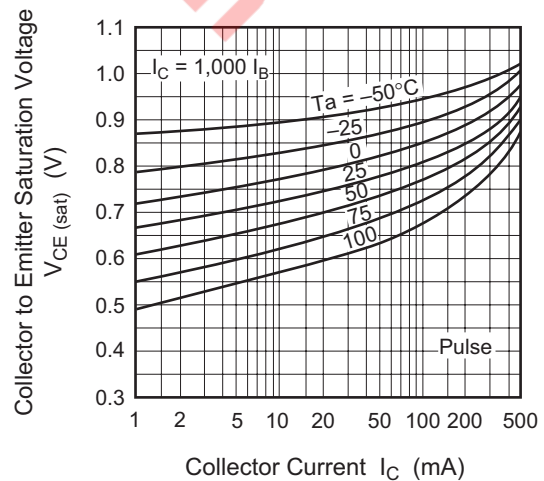
Collector Cutoff Current vs.
Collector to Emitter Voltage



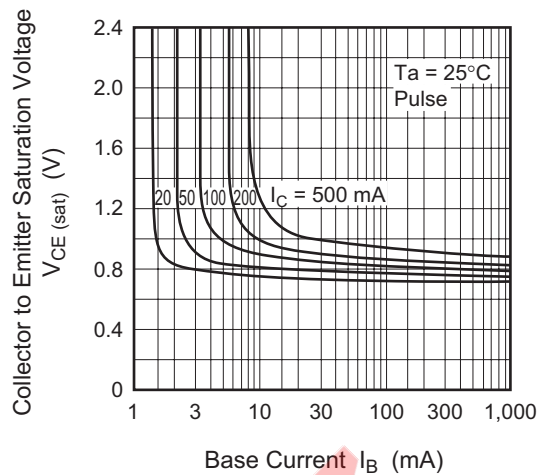
DC Current Transfer Ratio vs.
Collector Current



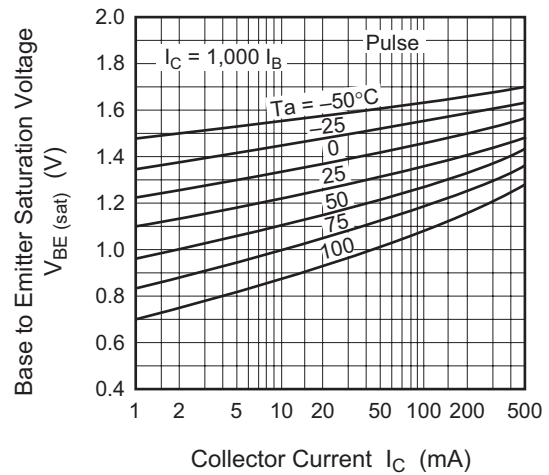
Collector to Emitter Saturation
Voltage vs. Collector Current



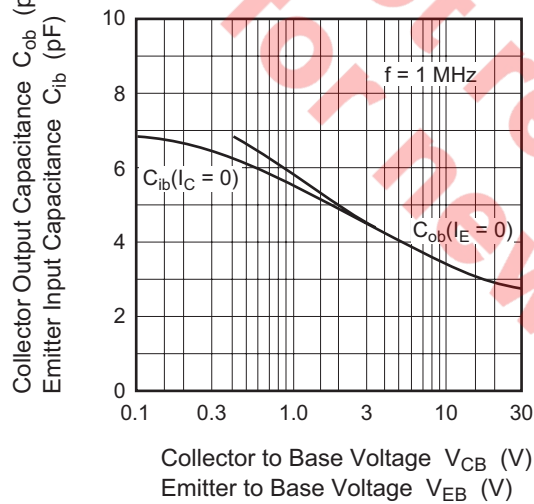
Collector to Emitter Saturation
Voltage vs. Base Current



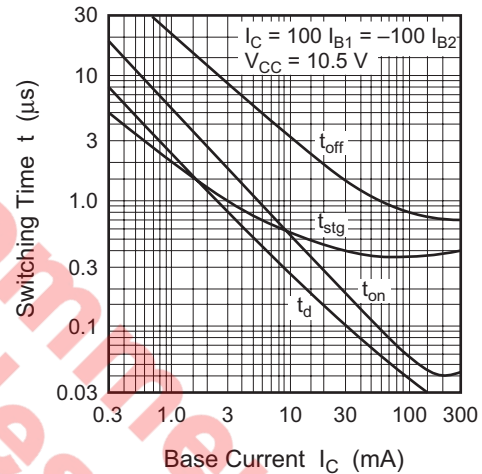
Base to Emitter Saturation
Voltage vs. Collector Current



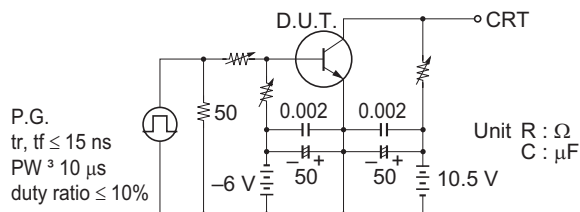
Input and Output Capacitance vs. Voltage



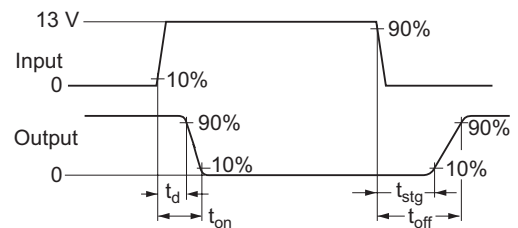
Switching Time vs. Collector Current



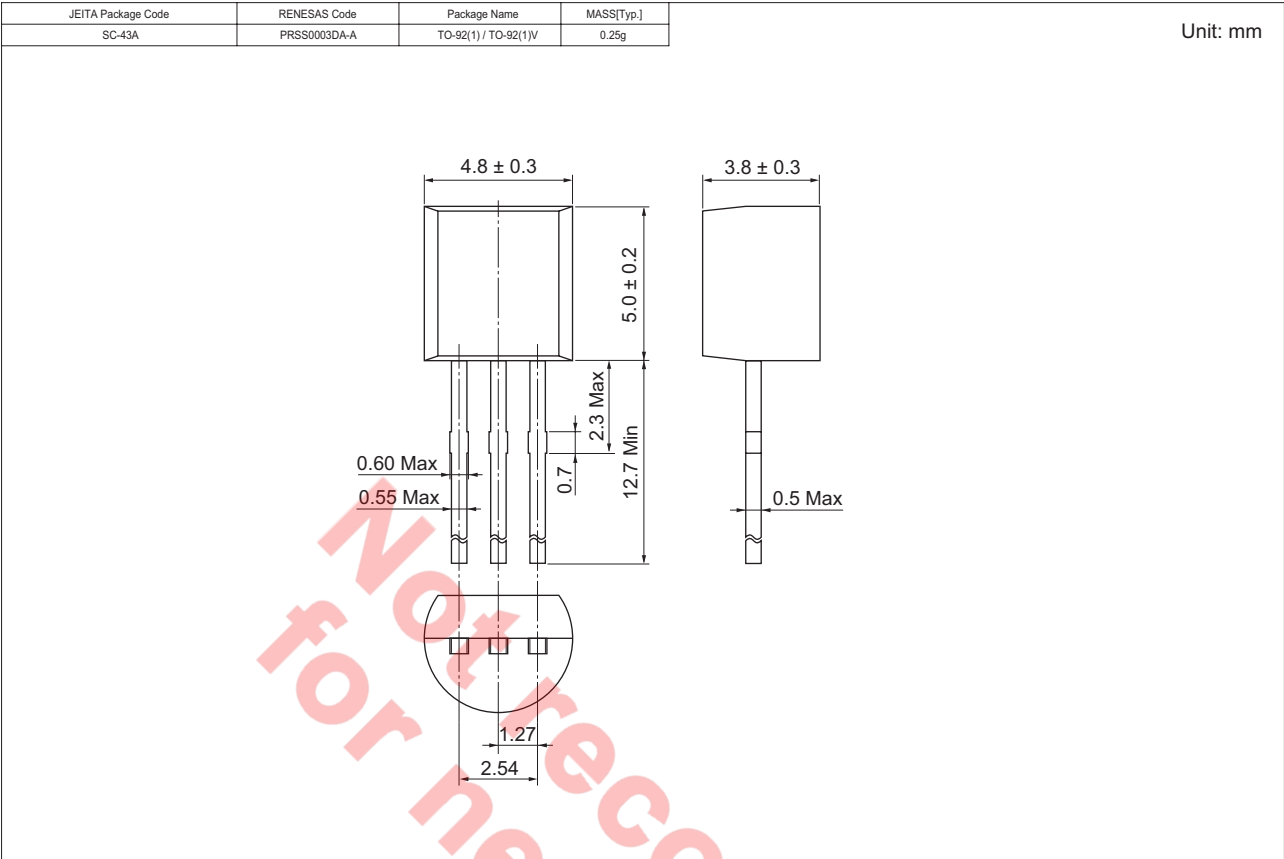
Switching Time Test Circuit



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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