

# 2SC1213, 2SC1213A

Silicon NPN Epitaxial

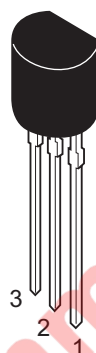
R07DS0431EJ0300  
(Previous: REJ03G0684-0200)  
Rev.3.00  
Jun 07, 2011

## Application

- Low frequency amplifier
- Complementary pair with 2SA673 and 2SA673A

## Outline

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



1. Emitter
2. Collector
3. Base

## Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	2SC1213	2SC1213A	Unit
Collector to base voltage	$V_{CBO}$	35	50	V
Collector to emitter voltage	$V_{CEO}$	35	50	V
Emitter to base voltage	$V_{EBO}$	4	4	V
Collector current	$I_C$	500	500	mA
Collector power dissipation	$P_C$	400	400	mW
Junction temperature	$T_j$	150	150	°C
Storage temperature	$T_{stg}$	-55 to +150	-55 to +150	°C

## Electrical Characteristics

(Ta = 25°C)

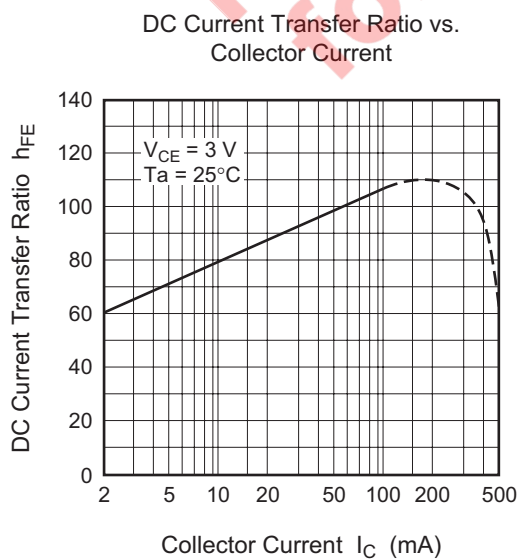
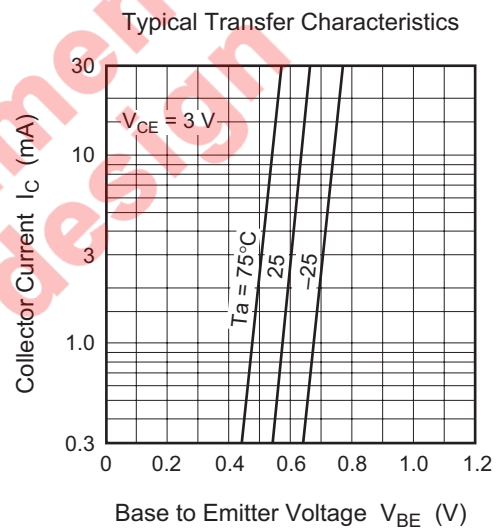
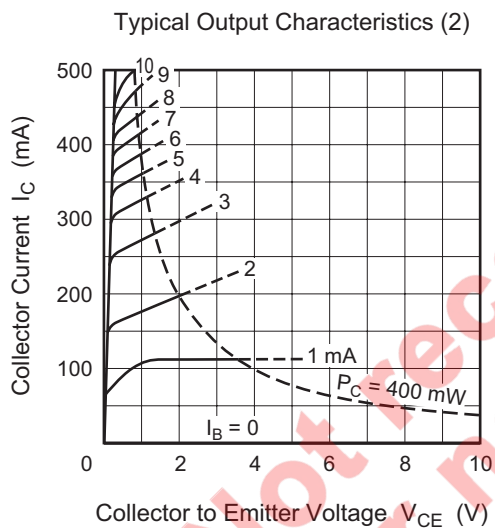
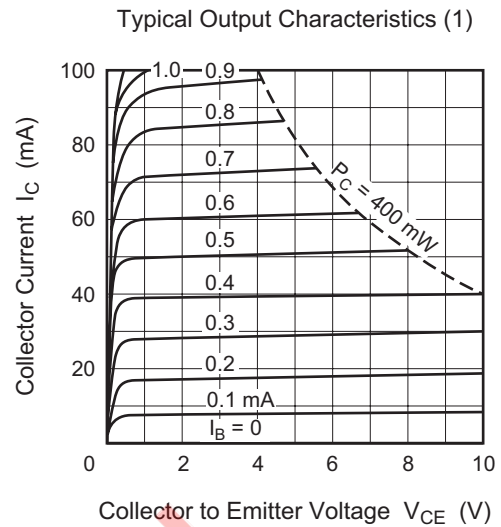
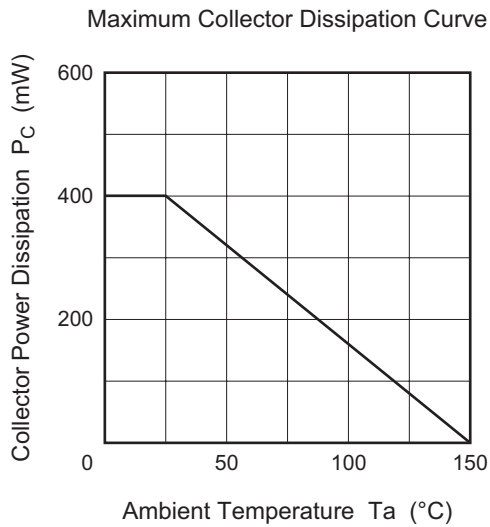
Item	Symbol	2SC1213			2SC1213A			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max		
Collector to base breakdown voltage	$V_{(BR)CBO}$	35	—	—	50	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	35	—	—	50	—	—	V	$I_C = 1 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	4	—	—	4	—	—	V	$I_E = 10 \mu A, I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	0.5	—	—	0.5	$\mu A$	$V_{CB} = 20 \text{ V}, I_E = 0$
DC current transfer ratio	$h_{FE}^{*1}$	60	—	320	60	—	320		$V_{CE} = 3 \text{ V}, I_C = 10 \text{ mA}$
	$h_{FE}$	10	—	—	10	—	—		$V_{CE} = 3 \text{ V}, I_C = 500 \text{ mA}^{*2}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	0.2	0.6	—	0.2	0.6	V	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}^{*2}$
Base to emitter voltage	$V_{BE}$	—	0.64	—	—	0.64	—	V	$V_{CE} = 3 \text{ V}, I_C = 10 \text{ mA}$

Notes: 1. The 2SC1213 and 2SC1213A are grouped by  $h_{FE}$  as follows.

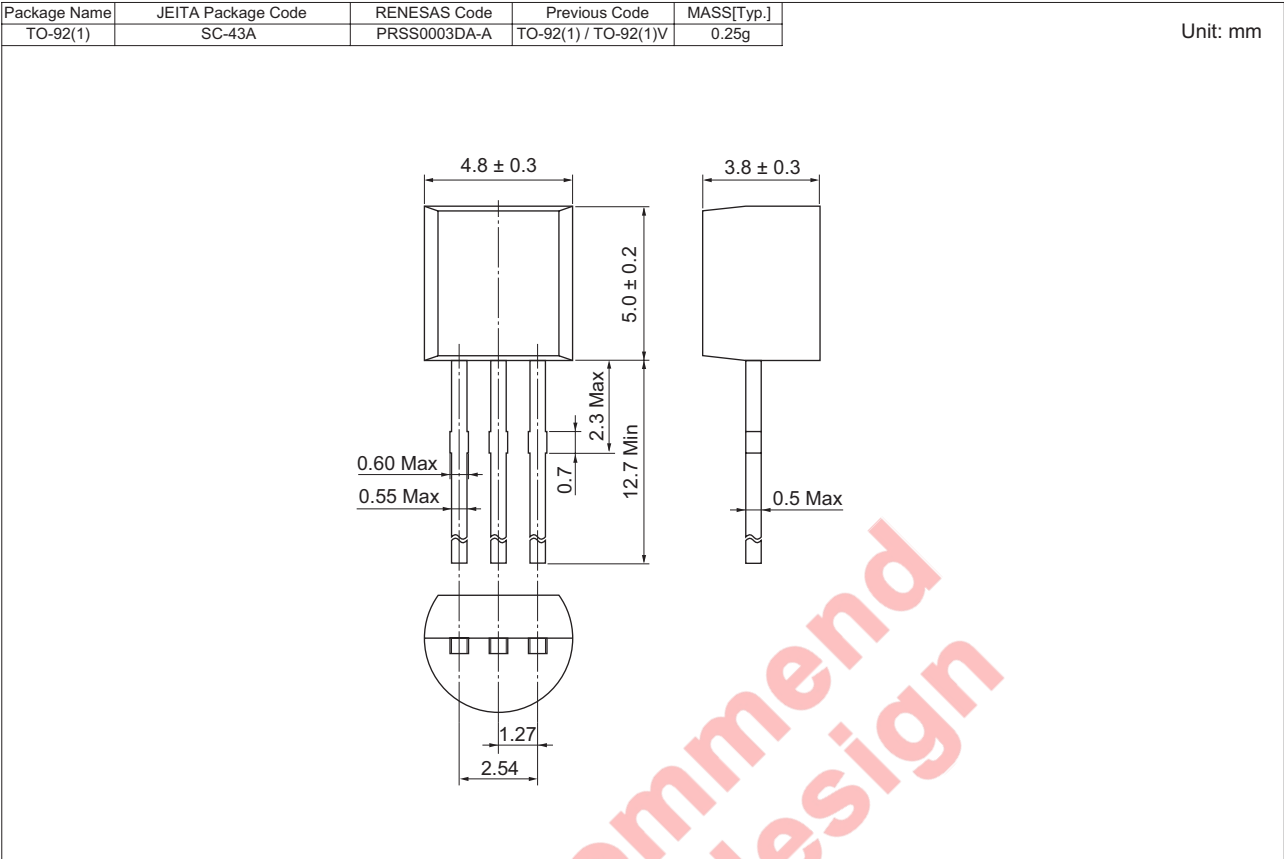
2. Pulse test

B	C	D
60 to 120	100 to 200	160 to 320

## Main Characteristics



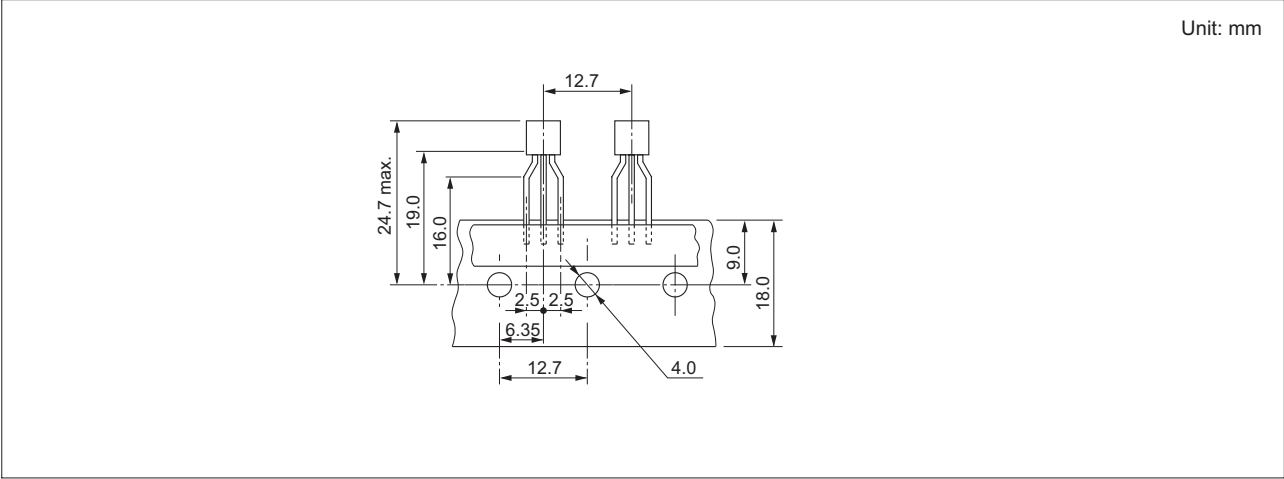
Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SC1213CTZ-E 2SC1213DTZ-E 2SC1213ABTZ-E 2SC1213ACTZ-E 2SC1213ADTZ-E	2500	Hold Box, Radial Taping

- Notes: 1. For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.
2. Leads is forming applied as following figure.



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