

To all our customers

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Renesas Technology Corp.  
Customer Support Dept.  
April 1, 2003

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Keep safety first in your circuit designs!

1. Renesas Technology Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage.

Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of nonflammable material or (iii) prevention against any malfunction or mishap.

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# 2SD755, 2SD756, 2SD756A

Silicon NPN Epitaxial

**RENESAS**

## Application

- Low frequency high voltage amplifier
- Complementary pair with 2SB715, 2SB716 and 2SB716A

## Outline

TO-92MOD



1. Emitter
2. Collector
3. Base

## 2SD755, 2SD756, 2SD756A

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

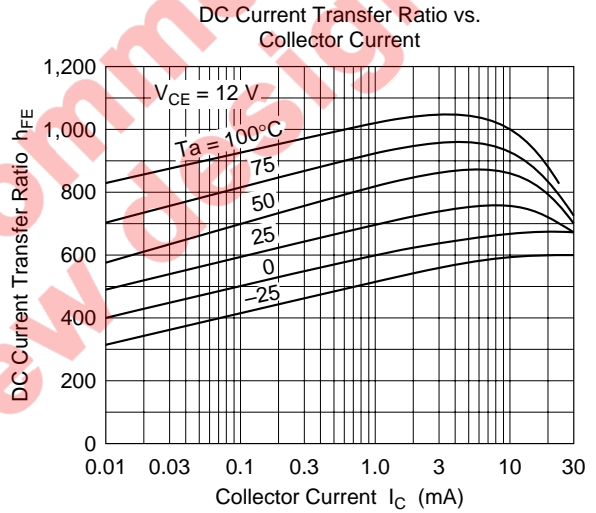
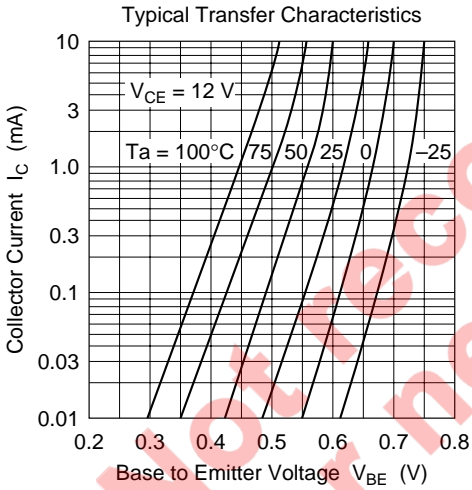
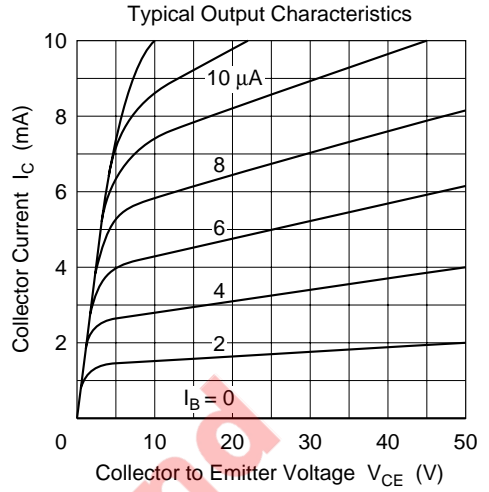
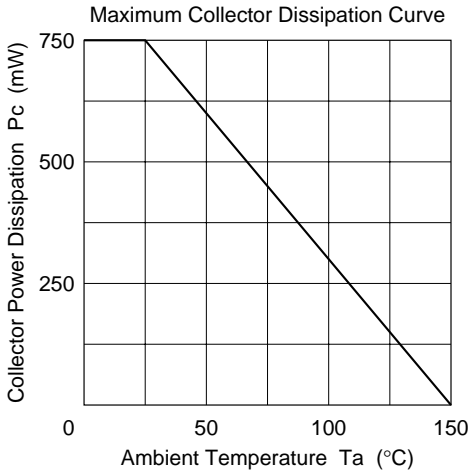
Item	Symbol	2SD755	2SD756	2SD756A	Unit
Collector to base voltage	$V_{CBO}$	100	120	140	V
Collector to emitter voltage	$V_{CEO}$	100	120	140	V
Emitter to base voltage	$V_{EBO}$	5	5	5	V
Collector current	$I_C$	50	50	50	mA
Collector power dissipation	$P_C$	750	750	750	mW
Junction temperature	$T_j$	150	150	150	°C
Storage temperature	$T_{stg}$	-55 to +150	-55 to +150	-55 to +150	°C

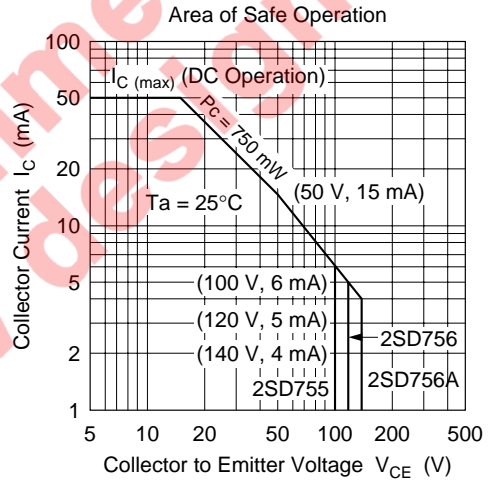
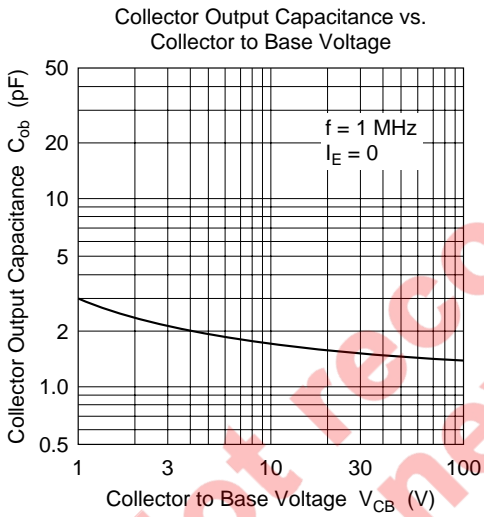
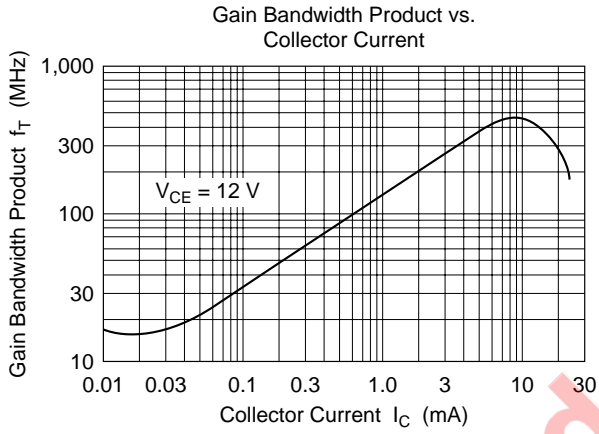
### Electrical Characteristics (Ta = 25°C)

Item	Symbol	2SD755			2SD756			2SD756A			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max		
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	100	—	—	120	—	—	140	—	—	V	$I_C = 1 \text{ mA}$ , $R_{BE} = \infty$
Collector to base breakdown voltage	$V_{(BR)CBO}$	100	—	—	120	—	—	140	—	—	V	$I_C = 10 \text{ }\mu\text{A}$ , $I_E = 0$
Collector cutoff current	$I_{CBO}$	—	—	0.5	—	—	0.5	—	—	0.5	$\mu\text{A}$	$V_{CB} = 100 \text{ V}$ , $I_E = 0$
DC current transfer ratio	$h_{FE1}^{*1}$	250	—	1200	250	—	800	250	—	500		$V_{CE} = 12 \text{ V}$ , $I_C = 2 \text{ mA}$
	$h_{FE2}$	125	—	—	125	—	—	125	—	—		$V_{CE} = 12 \text{ V}$ , $I_C = 10 \text{ mA}$
Base to emitter voltage	$V_{BE}$	—	—	0.75	—	—	0.75	—	—	0.75	V	$V_{CE} = 12 \text{ V}$ , $I_C = 2 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.2	—	—	0.2	—	—	0.2	V	$I_C = 10 \text{ mA}$ , $I_B = 1 \text{ mA}$
Gain bandwidth product	$f_T$	—	350	—	—	350	—	—	350	—	MHz	$V_{CE} = 12 \text{ V}$ , $I_C = 5 \text{ mA}$
Collector output capacitance	$C_{ob}$	—	1.6	—	—	1.6	—	—	1.6	—	pF	$V_{CB} = 25 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$

Note: 1. The 2SD755, 2SD756 and 2SD756A are grouped by  $h_{FE1}$  as follows.

	D	E	F
2SD755	250 to 500	400 to 800	600 to 1200
2SD756	250 to 500	400 to 800	—
2SD756A	250 to 500	—	—





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# HITACHI

## Hitachi, Ltd.

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

### For further information write to:

Hitachi America, Ltd.  
Semiconductor & IC Div.  
2000 Sierra Point Parkway  
Brisbane, CA. 94005-1835  
U S A  
Tel: 415-589-8300  
Fax: 415-583-4207

Hitachi Europe GmbH  
Electronic Components Group  
Continental Europe  
Dornacher Straße 3  
D-85622 Feldkirchen  
München  
Tel: 089-9 91 80-0  
Fax: 089-9 29 30 00

Hitachi Europe Ltd.  
Electronic Components Div.  
Northern Europe Headquarters  
Whitebrook Park  
Lower Cookham Road  
Maidenhead  
Berkshire SL6 8YA  
United Kingdom  
Tel: 0628-585000  
Fax: 0628-778322

Hitachi Asia Pte. Ltd.  
16 Collyer Quay #20-00  
Hitachi Tower  
Singapore 0104  
Tel: 535-2100  
Fax: 535-1533

Hitachi Asia (Hong Kong) Ltd.  
Unit 706, North Tower,  
World Finance Centre,  
Harbour City, Canton Road  
Tsim Sha Tsui, Kowloon  
Hong Kong  
Tel: 27359218  
Fax: 27306071