

To all our customers

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Renesas Technology Home Page: <http://www.renesas.com>

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

Cautions

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)

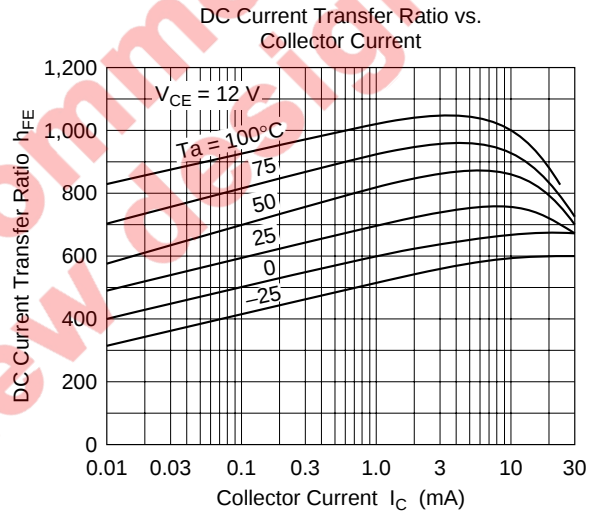
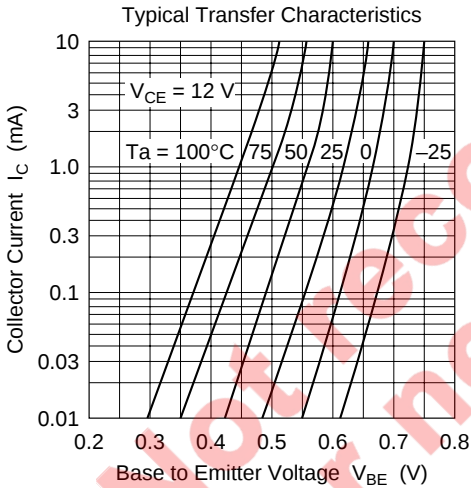
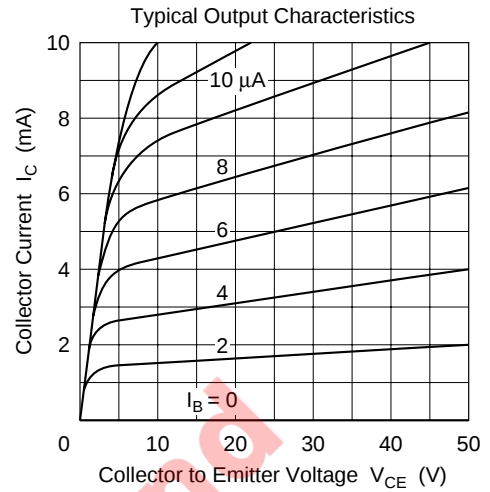
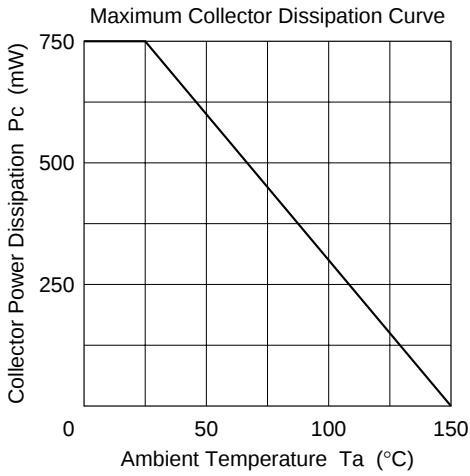
Item	Symbol	2SD755	2SD756	2SD756A	Unit
Collector to base voltage	V_{CBO}	100	120	140	V
Collector to emitter voltage	V_{CEO}	100	120	140	V
Emitter to base voltage	V_{EBO}	5	5	5	V
Collector current	I_C	50	50	50	mA
Collector power dissipation	P_C	750	750	750	mW
Junction temperature	Tj	150	150	150	°C
Storage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

Electrical Characteristics (Ta = 25°C)

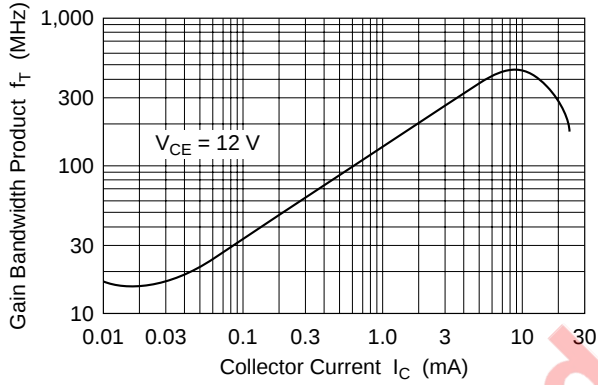
Item	Symbol	2SD755			2SD756			2SD756A			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max		
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	100	—	—	120	—	—	140	—	—	V	$I_C = 1 \text{ mA}$, $R_{BE} = \infty$
Collector to base breakdown voltage	$V_{(BR)CBO}$	100	—	—	120	—	—	140	—	—	V	$I_C = 10 \text{ }\mu\text{A}$, $I_E = 0$
Collector cutoff current	I_{CBO}	—	—	0.5	—	—	0.5	—	—	0.5	μA	$V_{CB} = 100 \text{ V}$, $I_E = 0$
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	Cob	—	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.

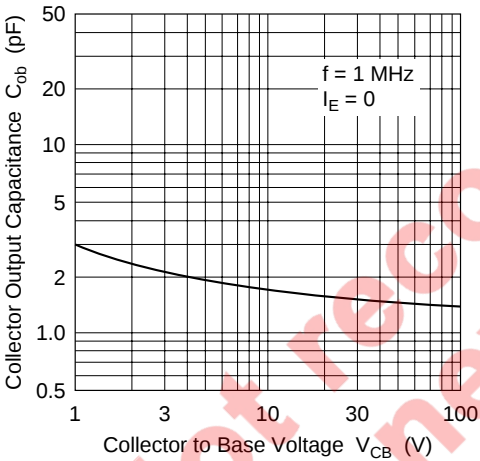
	D	E	F
2SD755	250 to 500	400 to 800	600 to 1200
2SD756	250 to 500	400 to 800	—
2SD756A	250 to 500	—	—



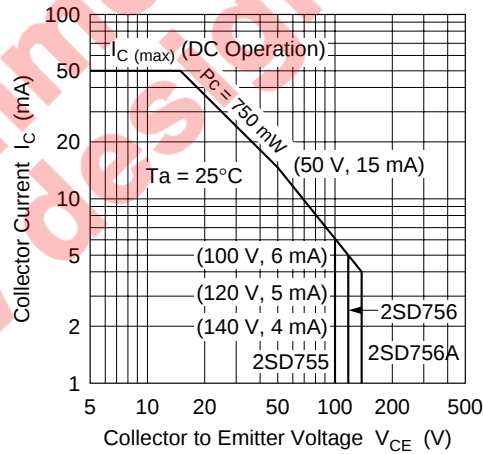
Gain Bandwidth Product vs.
Collector Current



Collector Output Capacitance vs.
Collector to Base Voltage



Area of Safe Operation



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