To all our customers

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

Cautions

Keep safety first in your circuit designs!

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   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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2SC2396, 2SC2543, 2SC2544

Silicon NPN Epitaxial

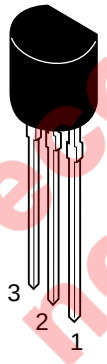
ADE-208-1062A (Z)
2nd. Edition
Mar. 2001

Application

- Low frequency amplifier

Outline

TO-92 (1)



1. Emitter
2. Collector
3. Base

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	2SC2396	2SC2543	2SC2544	Unit
Collector to base voltage	V_{CBO}	60	90	120	V
Collector to emitter voltage	V_{CEO}	60	90	120	V
Emitter to base voltage	V_{EBO}	5	5	5	V
Collector current	I_C	100	100	100	mA
Emitter current	I_E	–100	–100	–100	mA
Collector power dissipation	P_C	400	400	400	mW
Junction temperature	Tj	150	150	150	°C
Storage temperature	Tstg	–55 to +150	–55 to +150	–55 to +150	°C

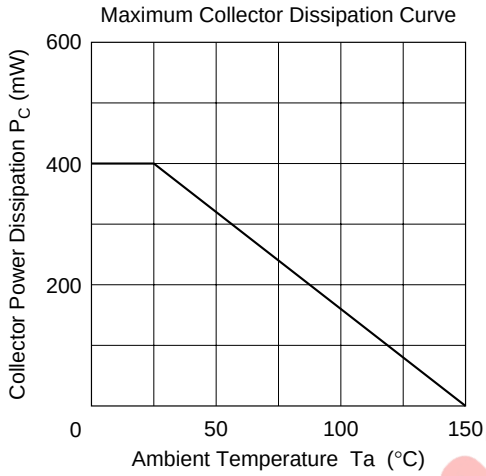
Electrical Characteristics (Ta = 25°C)

		2SC2396			2SC2543			2SC2544				
Item	Symbol	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	60	—	—	90	—	—	120	—	—	V	I_C = 10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	60	—	—	90	—	—	120	—	—	V	I_C = 1 mA, R_{BE} =
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	5	—	—	5	—	—	V	I_E = 10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	0.1	—	—	0.1	—	—	0.1	µA	V_{CB} = 50 V, I_E = 0
Emitter cutoff current	I_{EBO}	—	—	0.1	—	—	0.1	—	—	0.1	µA	V_{EB} = 2 V, I_C = 0
DC current transfer ratio	h_{FE}*1	250	—	1200	250	—	1200	250	—	800		V_{CE} = 12 V, I_C = 2 mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.2	—	—	0.2	—	—	0.2	V	I_C = 10 mA, I_B = 1 mA
Base to emitter voltage	V_{BE}	—	0.6	—	—	0.6	—	—	0.6	—	V	V_{CE} = 12 V, I_C = 2 mA
Gain bandwidth product	f_T	—	90	—	—	90	—	—	90	—	MHz	V_{CE} = 12 V, I_C = 2 mA
Collector output capacitance	Cob	—	3.0	—	—	3.0	—	—	3.0	—	pF	V_{CB} = 10 V, I_E = 0, f = 1 MHz

Note: 1. The 2SC2396, 2SC2543 and 2SC2544 are grouped by h_{FE1} as follows.

	D	E	F
2SC2396, 2SC2543	250 to 500	400 to 800	600 to 1200
2SC2544	250 to 500	400 to 800	—

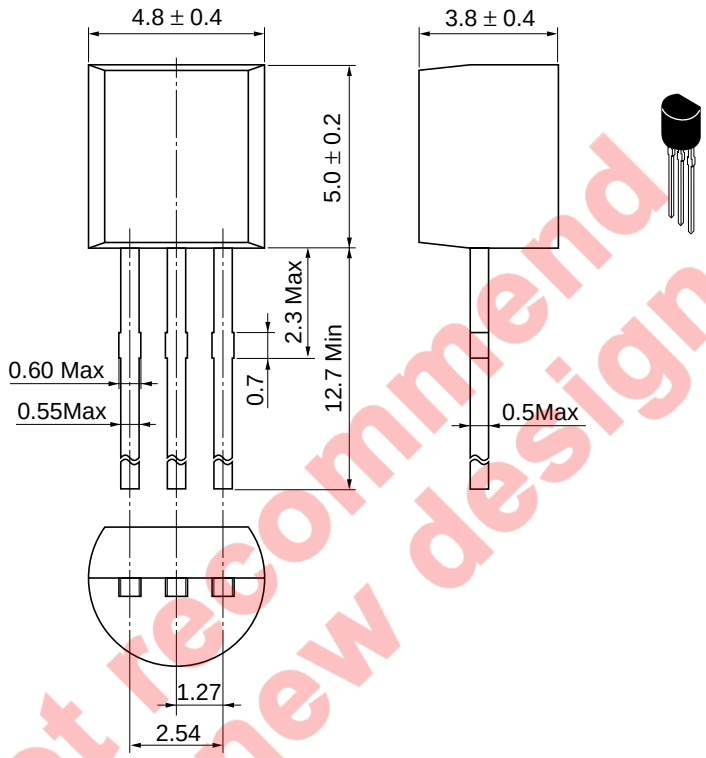
See characteristic curves of 2SC2545, 2SC2546 and 2SC2547.



Package Dimensions

As of January, 2001

Unit: mm



Hitachi Code	TO-92 (1)
JEDEC	Conforms
EIAJ	Conforms
Mass (reference value)	0.25 g

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