

To our customers,

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## Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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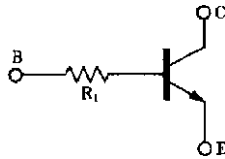
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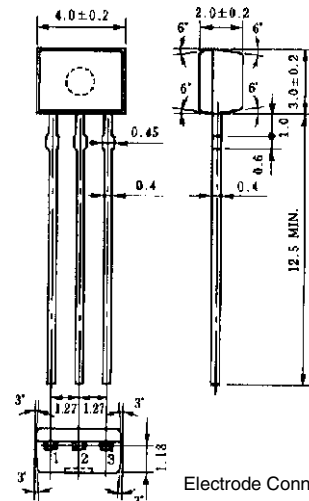
on-chip resistor PNP silicon epitaxial transistor  
For mid-speed switching

FEATURES

- On-chip bias resistor (R<sub>1</sub> = 10 kΩ)
- Complementary transistor with BA1A4Z



PACKAGE DRAWING (UNIT: mm)



Electrode Connection  
1. Emitte  
2. Collector  
3. Base

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V <sub>CB0</sub>	60	V
Collector to emitter voltage	V <sub>CEO</sub>	50	V
Emitter to base voltage	V <sub>EBO</sub>	5	V
Collector current (DC)	I <sub>C(DC)</sub>	100	mA
Collector current (Pulse)	I <sub>C(pulse)</sub> *	200	mA
Total power dissipation	P <sub>T</sub>	250	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

\* PW ≤ 10 ms, duty cycle ≤ 50 %

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	I <sub>CBO</sub>	V <sub>CB</sub> = 50 V, I <sub>E</sub> = 0			100	nA
DC current gain	h <sub>FE1</sub> **	V <sub>CE</sub> = 5.0 V, I <sub>C</sub> = 5.0 mA	135	340	600	-
DC current gain	h <sub>FE2</sub> **	V <sub>CE</sub> = 5.0 V, I <sub>C</sub> = 50 mA	100	300		-
Collector saturation voltage	V <sub>CE(sat)</sub> **	I <sub>C</sub> = 5.0 mA, I <sub>B</sub> = 0.25 mA		0.04	0.2	V
High level input voltage	V <sub>IL</sub> **	V <sub>CE</sub> = 0.2 V, I <sub>C</sub> = 5.0 mA	2.0	0.8		V
Low level input voltage	V <sub>IH</sub> **	V <sub>CE</sub> = 5.0 V, I <sub>C</sub> = 100 μA		0.55	0.5	V
Input resistance	R <sub>1</sub>		0.7	10	13.0	kΩ
Turn-on time	t <sub>on</sub>	V <sub>CC</sub> = 5.0 V, R <sub>L</sub> = 1.0 kΩ			0.2	μs
Storage time	t <sub>stg</sub>	V <sub>I</sub> = 5.0 V, PW = 2.0 μs			5.0	μs
Turn-off time	t <sub>off</sub>	duty cycle ≤ 2 %			6.0	μs

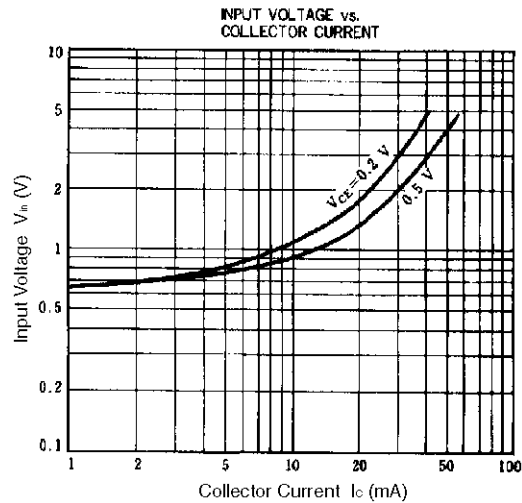
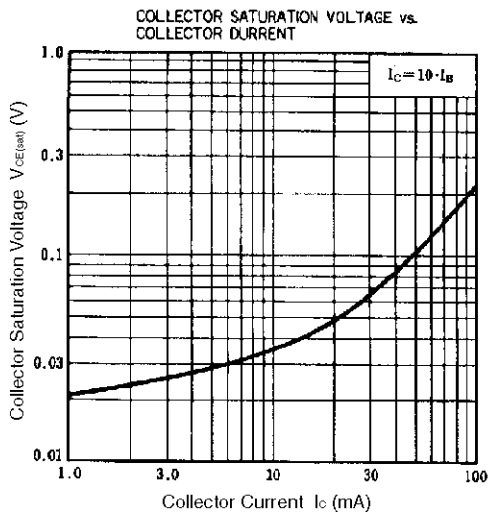
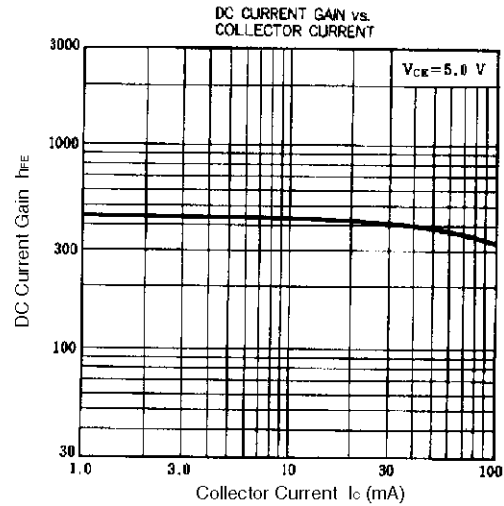
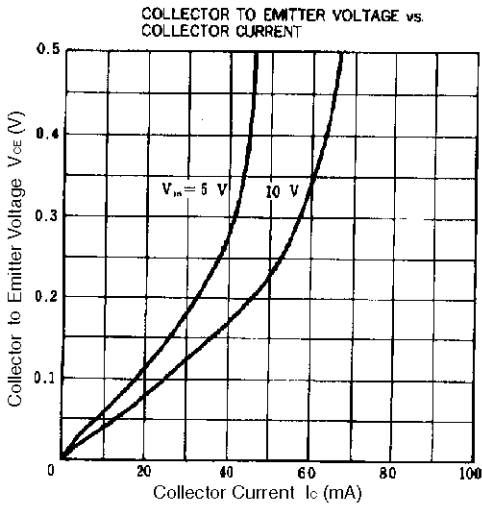
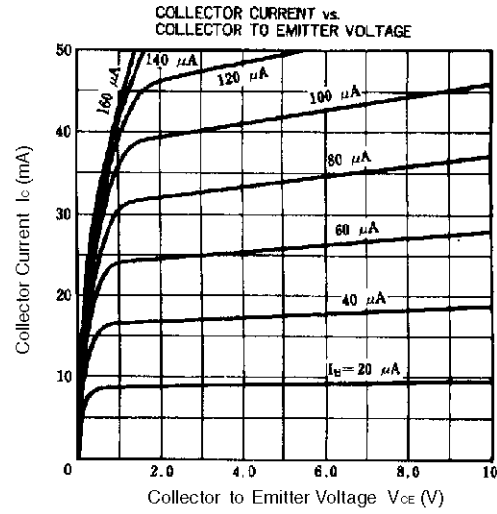
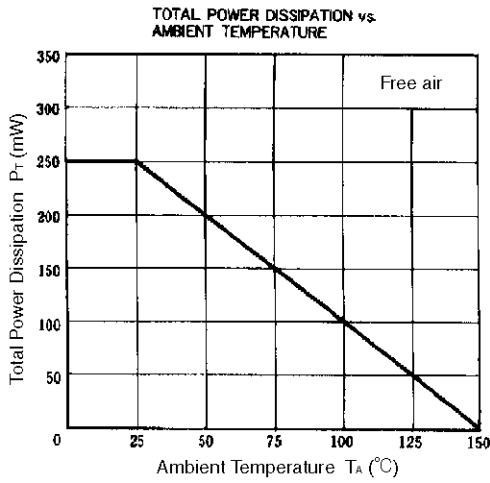
\*\* Pulse test PW ≤ 350 μs, duty cycle ≤ 2 %

h<sub>FE</sub> CLASSIFICATION

Marking	Q	P	K
h <sub>FE1</sub>	135 to 270	200 to 400	300 to 600

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[MEMO]

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