

To our customers,

Old Company Name in Catalogs and Other Documents

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

April 1st, 2010
Renesas Electronics Corporation

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

Send any inquiries to <http://www.renesas.com/inquiry>.

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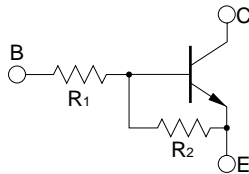
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MEDIUM SPEED SWITCHING
RESISTOR BUILT-IN TYPE NPN TRANSISTOR
MINI MOLD

FEATURES

- Resistors Built-in TYPE



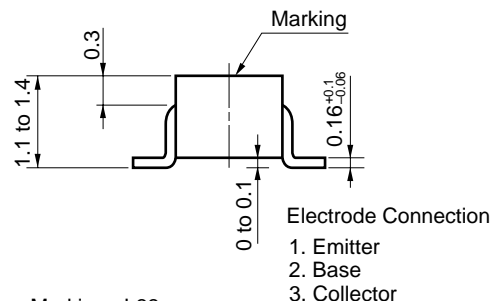
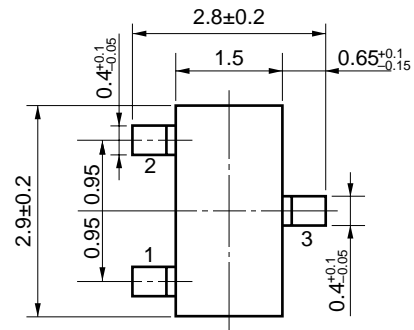
- Complementary to FN1A4M

ABSOLUTE MAXIMUM RATINGS (TA = 25 °C)

Collector to Base Voltage	V _{CB0}	60	V
Collector to Emitter Voltage	V _{CEO}	50	V
Emitter to Base Voltage	V _{EBO}	10	V
Collector Current (DC)	I _c	100	mA
Collector Current (Pulse)	I _c	200	mA
Total Power Dissipation	P _T	200	mW
(TA = 25 °C)			
Junction temperature	T _J	150	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

PACKAGE DIMENSIONS

in millimeters

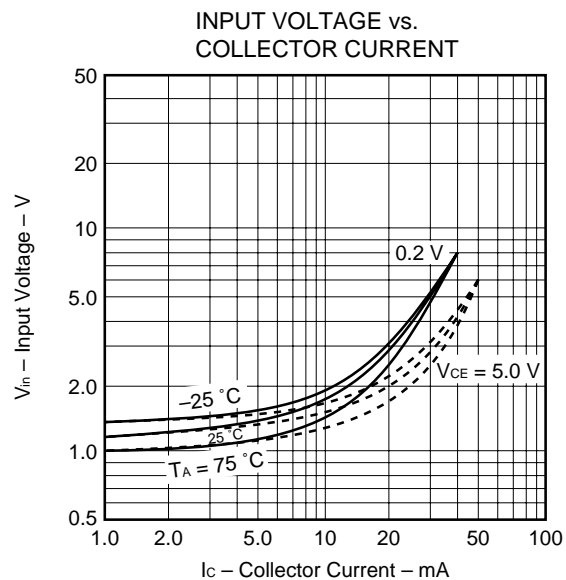
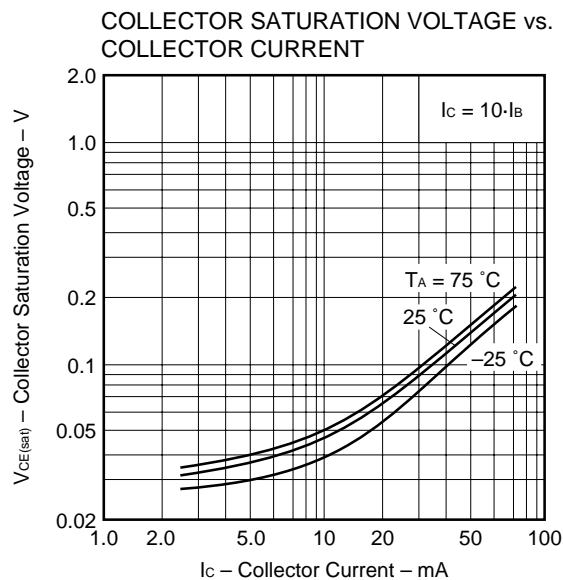
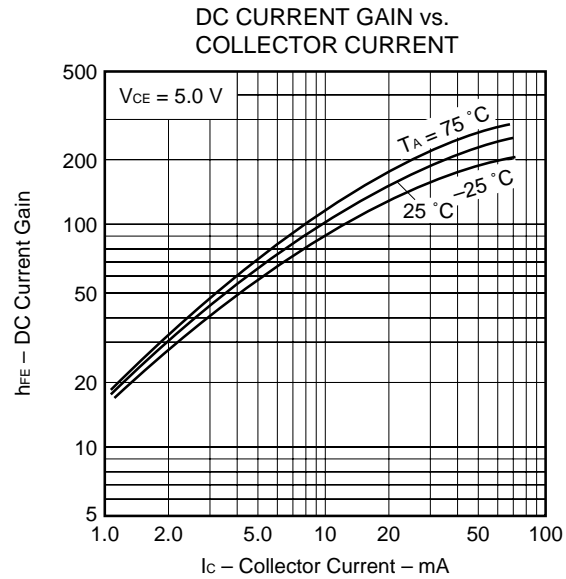
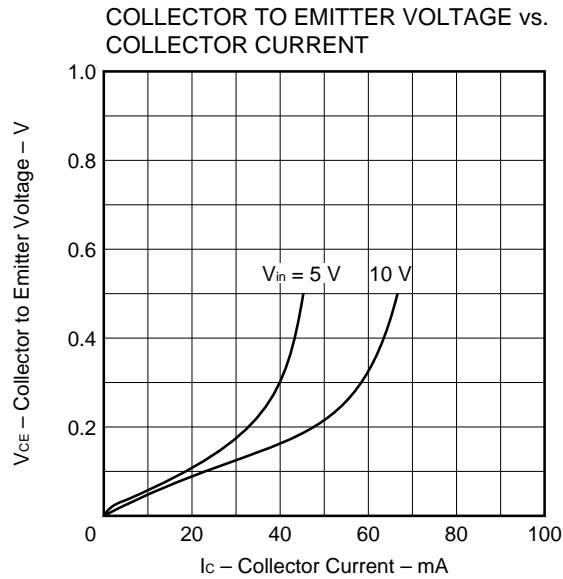
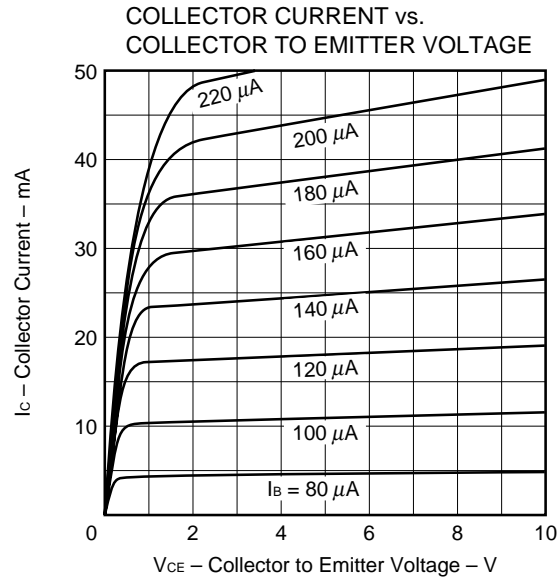
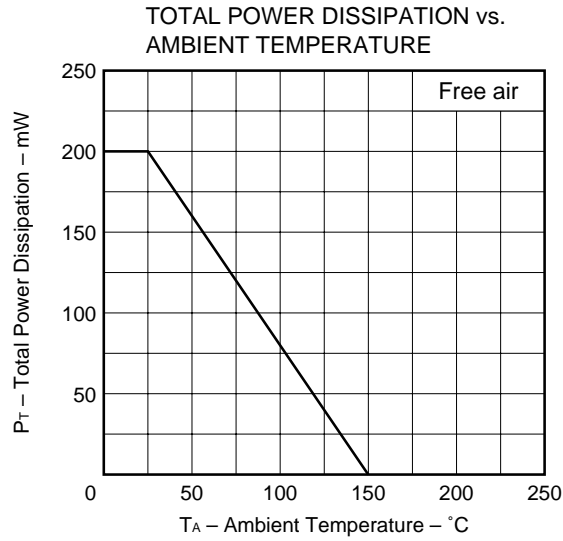


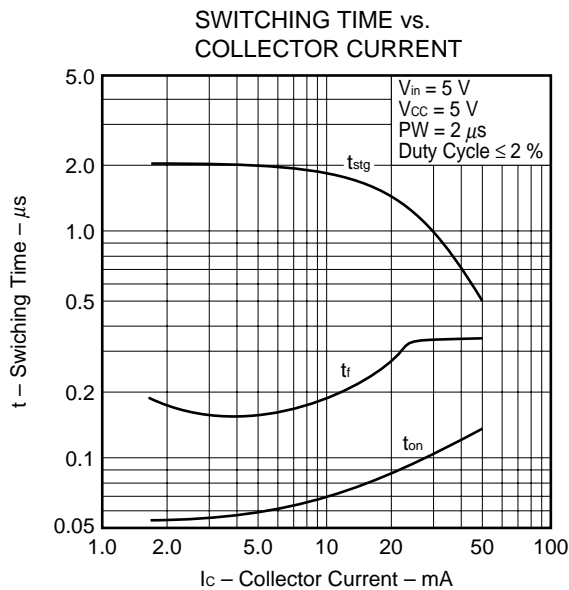
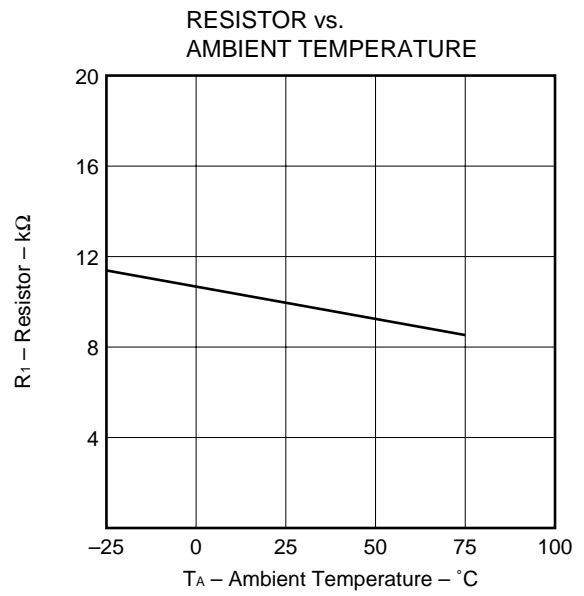
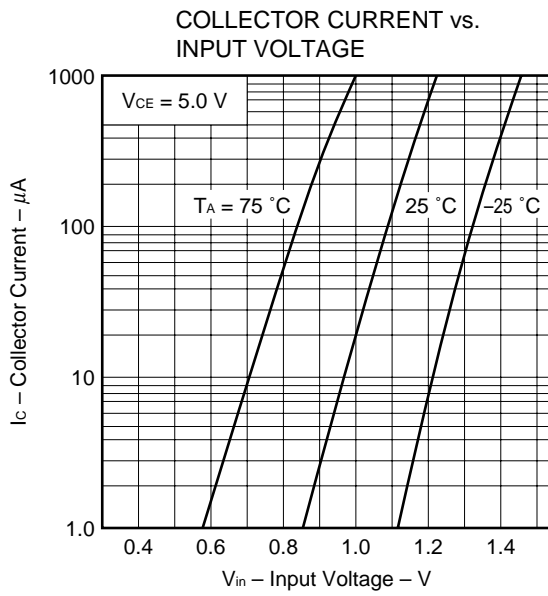
ELECTRICAL CHARACTERISTICS (TA = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I _{cBO}			100	nA	V _{CB} = 50 V, I _E = 0
DC Current Gain	h _{FE1} *	35	62	100		V _{CE} = 5.0 V, I _c = 5.0 mA
DC Current Gain	h _{FE2} *	80	230			V _{CE} = 5.0 V, I _c = 50 mA
Collector Saturation Voltage	V _{CE(sat)} *		0.05	0.2	V	I _c = 5.0 mA, I _B = 0.25 mA
Low-Level Input Voltage	V _{IL} *		1.08	0.8	V	V _{CE} = 5.0, I _c = 100 μA
High-Level Input Voltage	V _{IH} *	3.0	1.4		V	V _{CE} = 0.2 V, I _c = 5.0 mA
Input Resistor	R ₁	7.0	10	13	kΩ	
Resistor Ratio	R ₁ /R ₂	0.9	1.0	1.1		
Turn-on Time	t _{on}		0.06	0.2	μs	V _{CC} = 5 V, V _{in} = 5 V R _L = 1 kΩ PW = 2 μs, Duty Cycle ≤ 2 %
Storage Time	t _{stg}		2.0	5.0	μs	
Turn-off Time	t _{off}		2.15	6.0	μs	

* Pulsed: PW = 350 μs, Duty Cycle = 2 %

TYPICAL CHARACTERISTICS (T_A = 25 °C)





REFERENCE

Document Name	Document No.
NEC semiconductor device reliability/quality control system	TEI-1202
Quality grade on NEC semiconductor devices	IEI-1209
Semiconductor device mounting technology manual	IEI-1207
Guide to quality assurance for semiconductor devices	MEI-1202
Semiconductor selection guide	MF-1134

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Standard: Computers, office equipment, communications equipment, test and measurement equipment, audio and visual equipment, home electronic appliances, machine tools, personal electronic equipment and industrial robots

Special: Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)

Specific: Aircrafts, aerospace equipment, submersible repeaters, nuclear reactor control systems, life support systems or medical equipment for life support, etc.

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Anti-radioactive design is not implemented in this product.