

To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

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>.

Notice

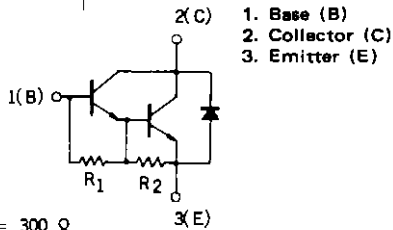
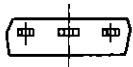
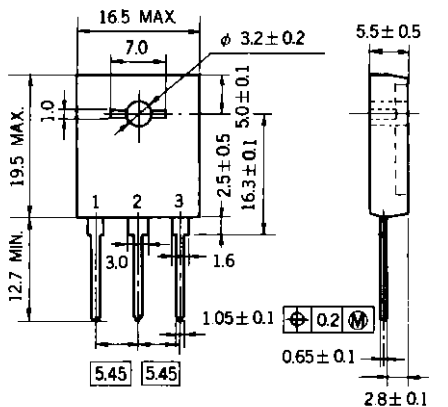
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(Note 2) “Renesas Electronics product(s)” means any product developed or manufactured by or for Renesas Electronics.

LOW FREQUENCY AMPLIFIER AND HIGH CURRENT SWITCHING NPN SILICON EPITAXIAL DARLINGTON TRANSISTOR INDUSTRIAL USE

PACKAGE DIMENSIONS in millimeters



$R_1 \cong 300 \Omega$
 $R_2 \cong 40 \Omega$

1. Base (B)
2. Collector (C)
3. Emitter (E)

DESCRIPTION

Suitable for igniter and motor controller.

FEATURES

- Low collector saturation voltage.
- High DC current gain.

ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Currents ($T_a = 25^\circ\text{C}$)

Collector to Base Voltage	V_{CB0}	500	V
Collector to Emitter Voltage	V_{CE0}	400	V
Emitter to Base Voltage	V_{EB0}	8.0	V
Continuous Collector Current	$I_C(\text{DC})$	± 10	A
Peak Collector Current	$I_C(\text{pulse})^*$	± 30	A
Continuous Base Current	$I_B(\text{DC})$	1.0	A

Maximum Power Dissipation

Total Power Dissipation ($T_a = 25^\circ\text{C}$)	P_T	3.0	W
($T_c = 25^\circ\text{C}$)	P_T	100	W

Maximum Temperatures

Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

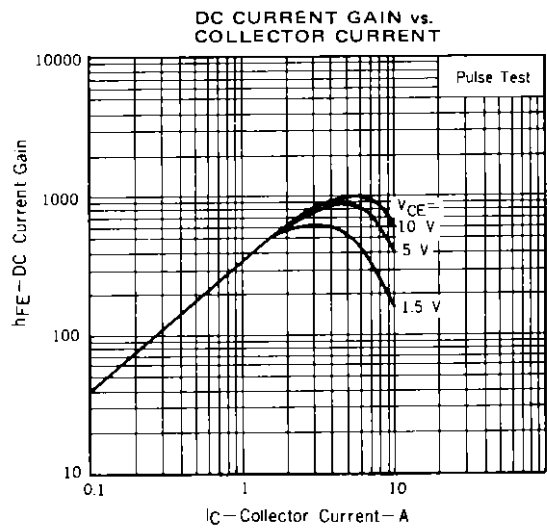
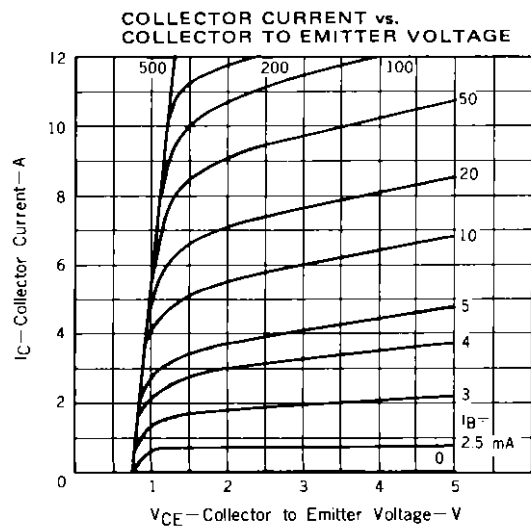
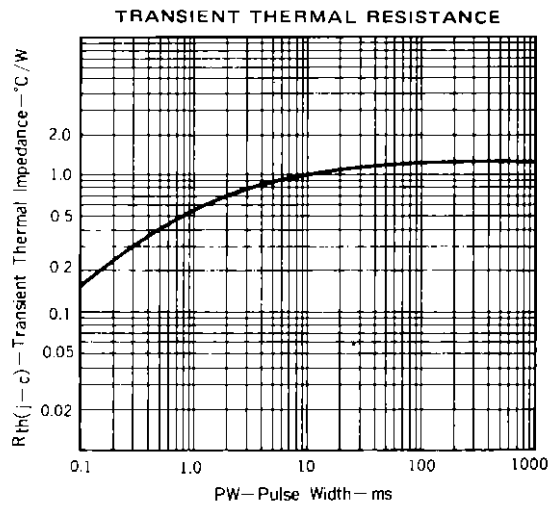
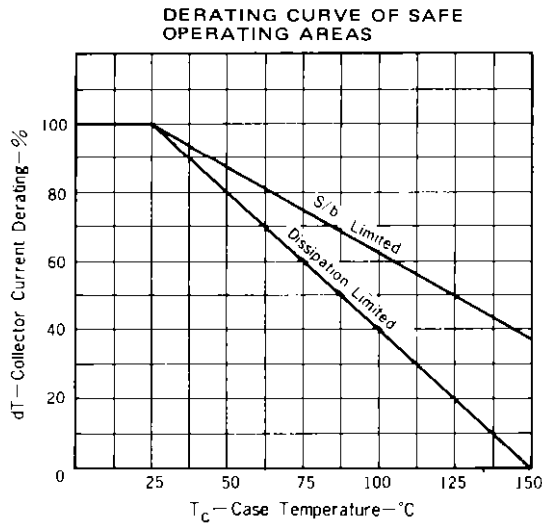
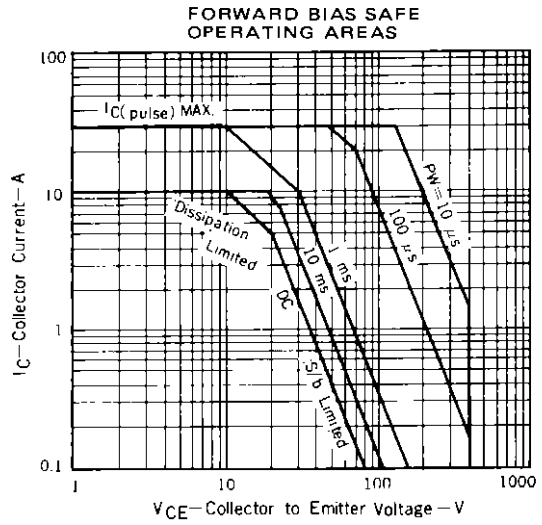
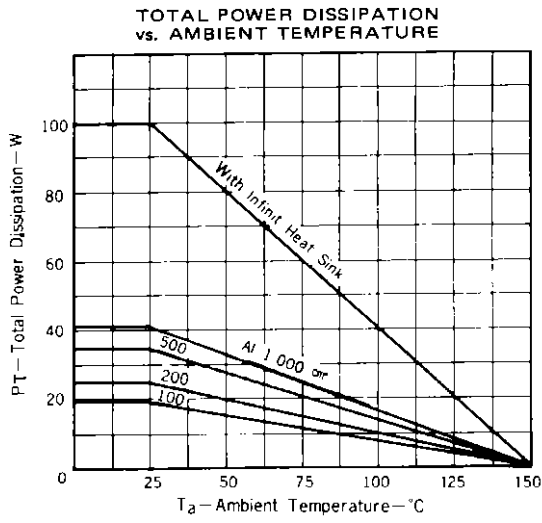
* Pulse Test; $PW \leq 1 \text{ ms}$, duty cycle $\leq 20 \%$

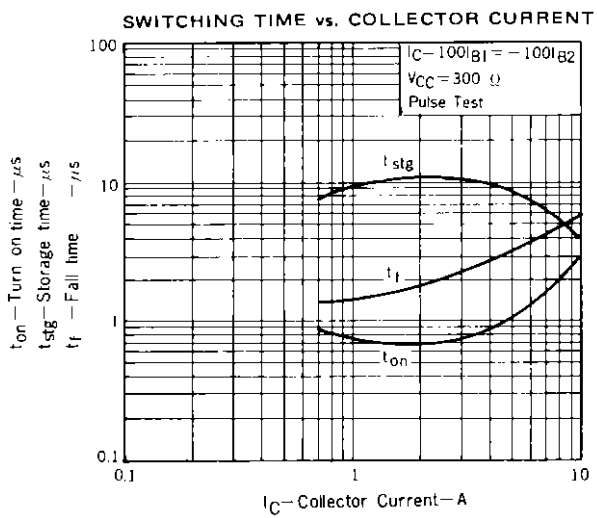
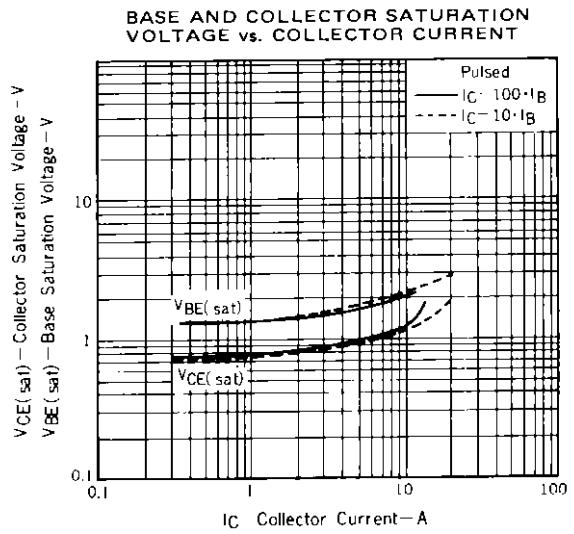
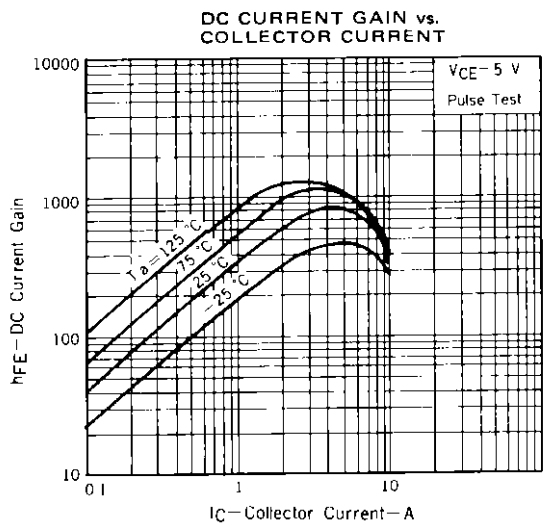
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CB0}			100	μA	$V_{CB} = 400 \text{ V}$, $I_E = 0$
DC Current Gain	h_{FE1}	200	600	2000		$V_{CE} = 2.0 \text{ V}$, $I_C = 2.0 \text{ A}^*$
DC Current Gain	h_{FE2}	200	500	5000		$V_{CE} = 2.0 \text{ V}$, $I_C = 6 \text{ A}^*$
Collector Saturation Voltage	$V_{CE(\text{sat})}$		1.1	1.5	V	$I_C = 6 \text{ A}$, $I_B = 60 \text{ mA}^*$
Base Saturation Voltage	$V_{BE(\text{sat})}$		1.8	2.2	V	
Turn on Time	t_{on}		1.5		μs	$I_C = 6 \text{ A}$, $I_{B1} = -I_{B2} = 30 \text{ mA}$ $R_L = 50 \Omega$, $V_{CC} \cong 300 \text{ V}$
Storage Time	t_{stg}		7		μs	
Fall Time	t_f		4		μs	

* Pulse Test; $PW \leq 350 \mu\text{s}$, duty cycle $\leq 2 \%$

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)





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APR.-10-83M
Printed in Japan