

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>)

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Not recommended
for new design

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SILICON TRANSISTOR 2SC3840

NPN SILICON TRIPLE DIFFUSED TRANSISTOR HIGH SPEED HIGH VOLTAGE SWITCHING

DESCRIPTION

The 2SC3840 is designed for use in high speed and high voltage switching.
It is suitable for switching regulators, DC-DC converters and ultrasonic appliance applications.

FEATURES

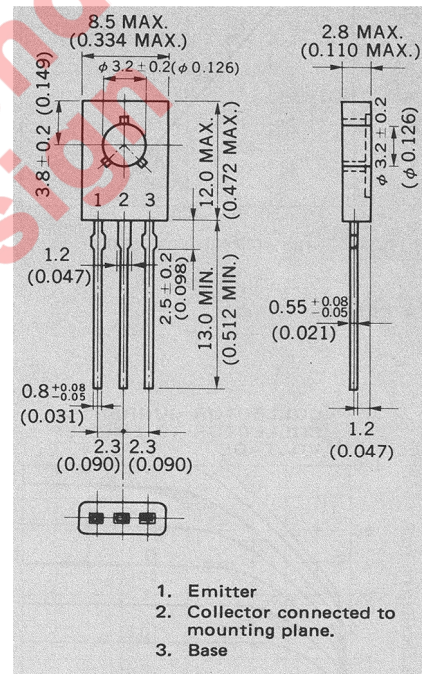
- High speed switching
- High voltage

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Collector to Base Voltage	V _{CBO}	600	V
Collector to Emitter Voltage	V _{CEO}	600	V
Emitter to Base Voltage	V _{EBO}	7.0	V
Collector Current (DC)	I _{C(DC)}	1.0	A
Collector Current (pulse) ^{Note}	I _{C(pulse)}	2.0	A
Total Power Dissipation (T _c = 25°C)	P _T	15	W
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

Note PW ≤ 300 μs, Duty Cycle ≤ 10%

PACKAGE DRAWING (Unit: mm)



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ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
t _{on}	Turn-On Time		0.1	0.5	μs	I _C = 0.5 A, I _{B1} = -I _{B2} = 0.1 A R _L = 500 Ω, V _{CC} ≐ 250 V
t _{stg}	Storage Time		4.0	5.0	μs	
t _f	Fall Time		0.2	0.5	μs	
h _{FE1} **	DC Current Gain	30		120	—	V _{CE} = 5.0 V, I _C = 0.1 A
h _{FE2} **	DC Current Gain	5			—	V _{CE} = 5.0 V, I _C = 0.5 A
V _{CE(sat)} **	Collector Saturation Voltage			1.0	V	I _C = 0.4 A, I _B = 0.08 A
V _{BE(sat)} **	Base Saturation Voltage			1.2	V	I _C = 0.4 A, I _B = 0.08 A
I _{CBO}	Collector Cutoff Current			10	μA	V _{CB} = 600 V, I _E = 0
I _{EBO}	Emitter Cutoff Current			10	μA	V _{EB} = 7.0 V, I _C = 0

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

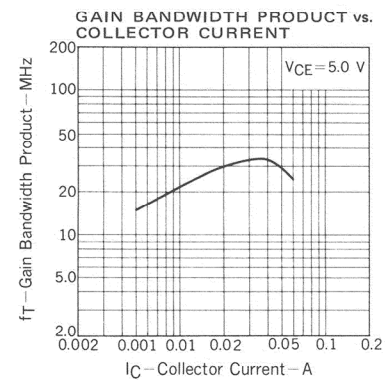
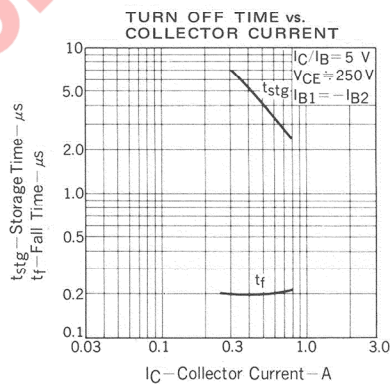
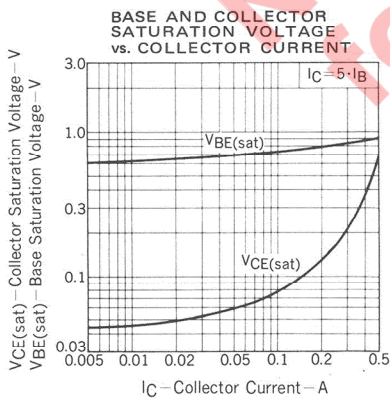
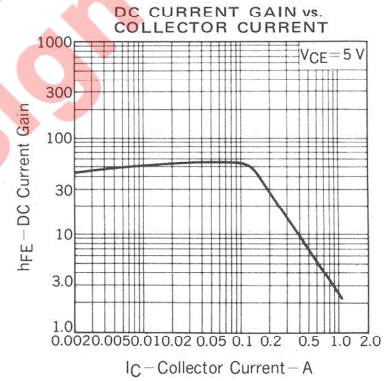
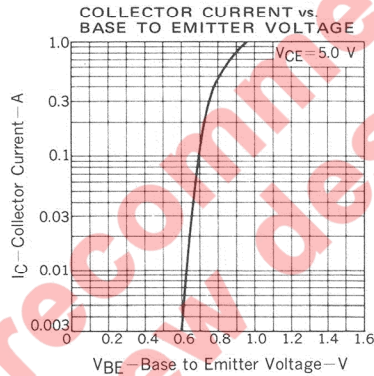
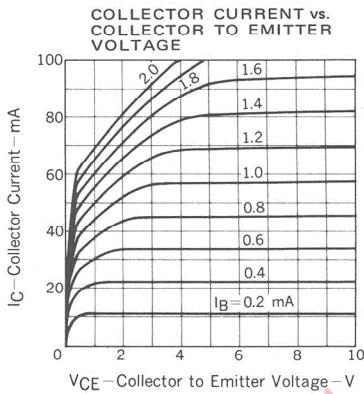
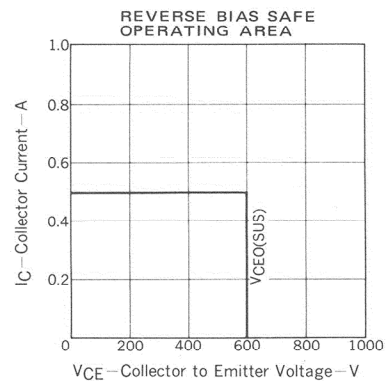
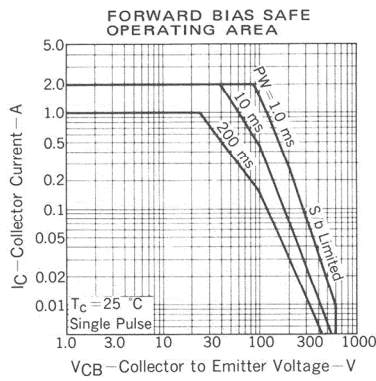
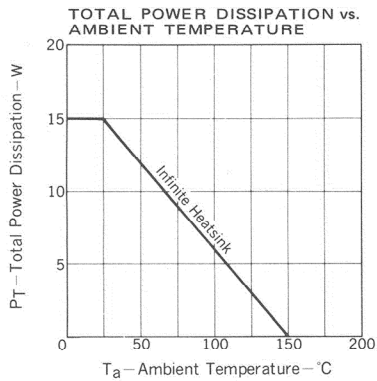
Classification of h_{FE1}

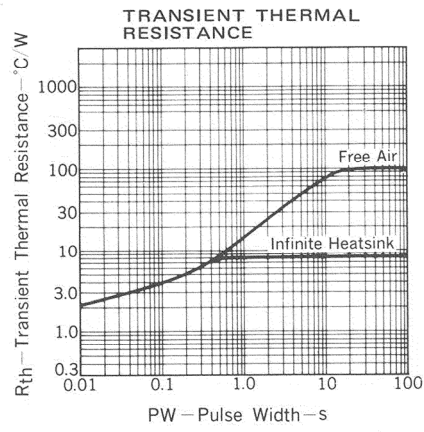
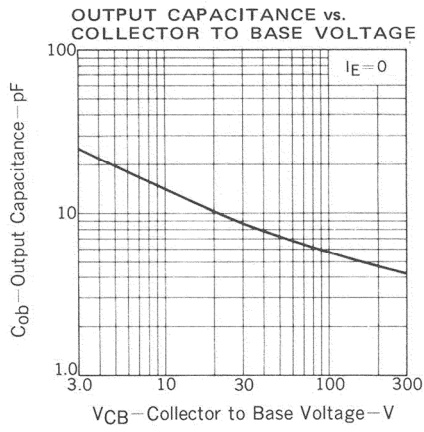
Rank	M	L	K
Range	30 to 60	40 to 80	60 to 120

Test Conditions: V_{CE} = 5.0 V, I_C = 0.1 A

Not recommend
for new design

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





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for new design

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