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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RENESAS

SILICON POWER TRANSISTOR

Phase-out/Discontinued

2SA1400-Z

PNP SILICON TRIPLE DIFFUSED TRANSISTOR

DESCRIPTION

The 2SA1400-Z is designed for High Voltage Switching, especially in Hybrid Integrated Circuits.

FEATURES

- High Voltage: V_{CEO} = −400 V
- High Speed: $t_f \leq 1.0\ \mu s$
- Complement to 2SC3588-Z

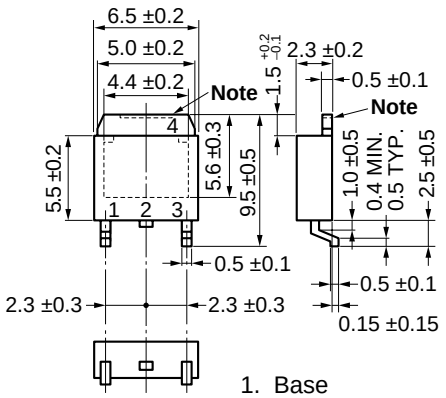
ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Collector to base voltage	V_{CBO}	−400	V
Collector to emitter voltage	V_{CEO}	−400	V
Base to emitter voltage	V_{EBO}	−7	V
Collector current (DC)	$I_{C(DC)}$	−0.5	A
Collector current (pulse) Note 1	$I_{C(pulse)}$	−1.0	A
Total power dissipation (T_A = 25°C) Note 2	P_T	2.0	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

Notes 1. PW ≤ 300 μs, Duty Cycle ≤ 10%

2. When mounted on ceramic substrate of 7.5 cm^2 × 0.7 mm

<R> **PACKAGE DRAWING (Unit: mm)**



TO-252 (MP-3Z)

1. Base
2. Collector
3. Emitter
4. Collector Fin

Note The depth of notch at the top of the fin is from 0 to 0.2 mm.

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Date Published June 2006 NS CP(K)
Printed in Japan

The mark <R> shows major revised points.

The revised points can be easily searched by copying an "<R>" in the PDF file and specifying it in the "Find what:" field.

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			–100	μA	V_{CB} = –400 V, I_E = 0
Emitter Cutoff Current	I_{EBO}			–10	μA	V_{EB} = –5.0 V, I_C = 0
DC Current Gain	h_{FE}*	30		200		V_{CE} = –5.0 V, I_C = –50 mA
Collector Saturation Voltage	$V_{CE(sat)}$*			–1.0	V	I_C = –100 mA, I_B = –10 mA
Base Saturation Voltage	$V_{BE(sat)}$*			–1.2	V	I_C = –100 mA, I_B = –10 mA
Turn-on Time	t_{on}			1.0	μs	I_C = –100 mA, R_L = 1.5 kΩ
Storage Time	t_{stg}			5.0	μs	I_{B1} = –I_{B2} = –10 mA,
Fall time	t_f			1.0	μs	V_{CC} ≒ –150 V PW ≦ 50 μs, Duty Cycle ≦ 2 %

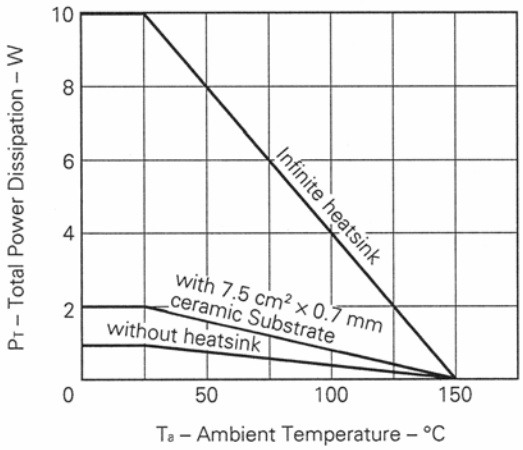
* Pulsed: PW ≦ 350 μs, Duty Cycle ≦ 2 %

h_{FE} Classification

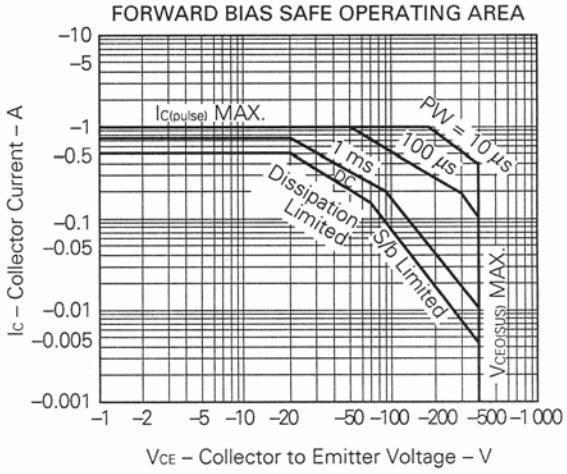
MARKING	N	M	L	K
h_{FE}	30 to 60	40 to 80	60 to 120	100 to 200

TYPICAL CHARACTERISTICS (T_a = 25 °C)

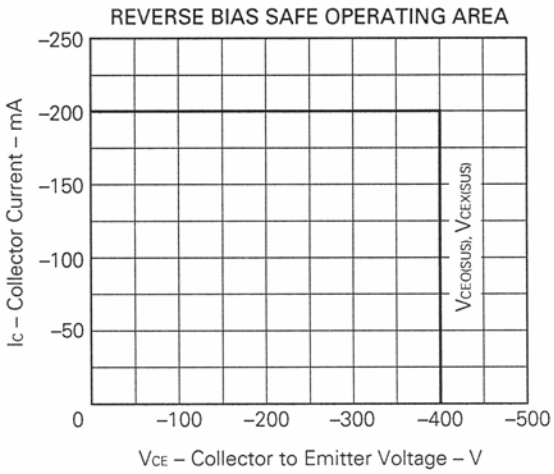
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



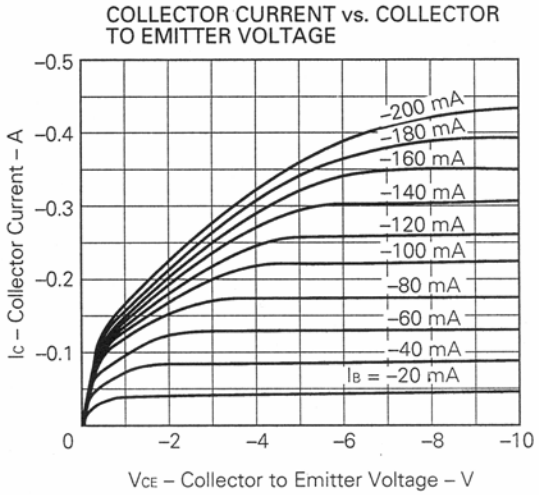
FORWARD BIAS SAFE OPERATING AREA



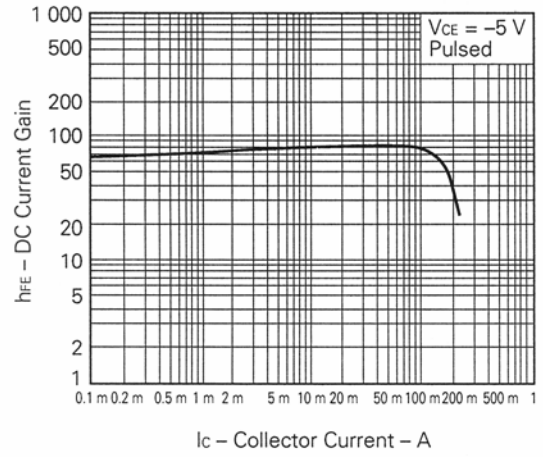
REVERSE BIAS SAFE OPERATING AREA



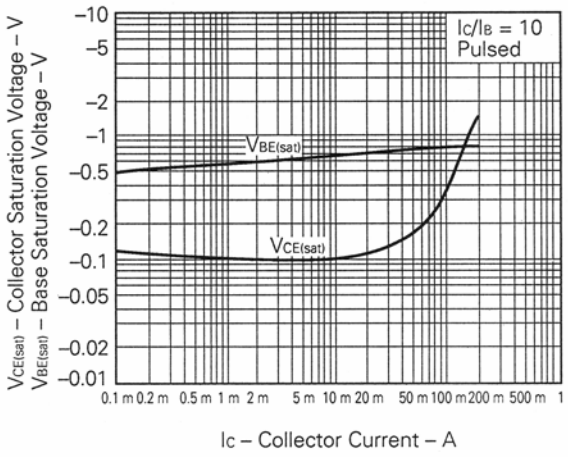
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



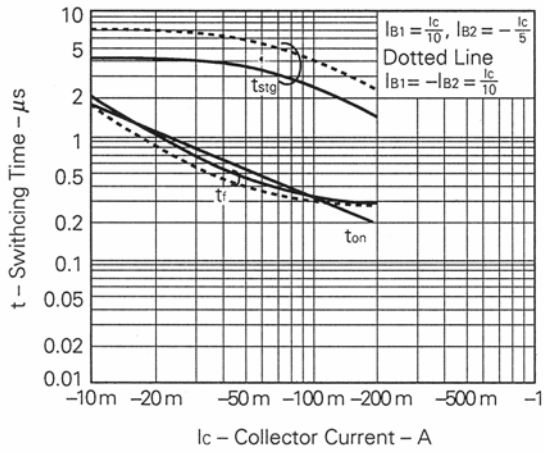
DC CURRENT GAIN vs.
COLLECTOR CURRENT



BASE COLLECTOR SATURATION
VOLTAGE vs. COLLECTOR CURRENT



TURN ON TIME, STORAGE TIME AND
FALL TIME vs. COLLECTOR CURRENT



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