

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>)

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NPN SILICON EPITAXIAL TRANSISTOR

DESCRIPTION

The 2SD1033 is designed for Color TV vertical deflection output, especially in Hybrid Integrated Circuits.

FEATURES

- High Voltage $V_{CE0} = 150$ V
- Complement to 2SB768

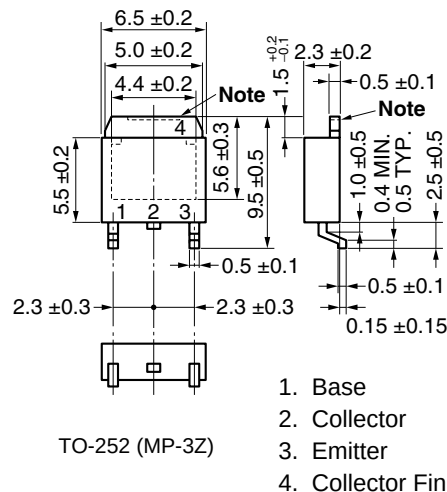
ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Collector to Base Voltage	V_{CBO}	200	V
Collector to Emitter Voltage	V_{CEO}	150	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current (DC)	$I_{C(DC)}$	2	A
Collector Current (pulse) ^{Note 1}	$I_{C(pulse)}$	3	A
Total Power Dissipation ($T_A = 25^\circ\text{C}$) ^{Note 2}	P_T	2.0	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Notes 1. $PW \leq 10$ ms, Duty Cycle $\leq 50\%$

2. When mounted on ceramic substrate of $7.5\text{ cm}^2 \times 0.7$ mm

<R> PACKAGE DRAWING (Unit: mm)



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

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

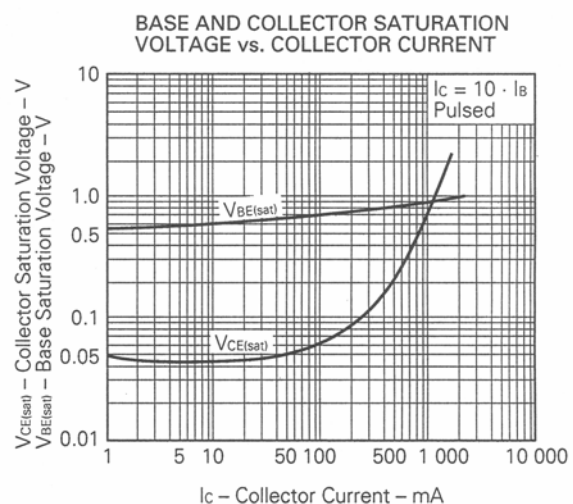
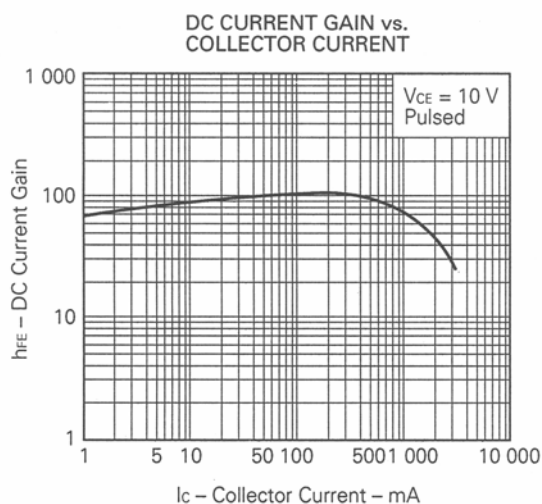
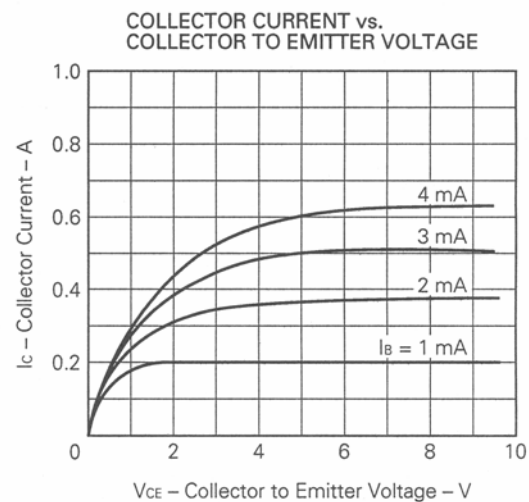
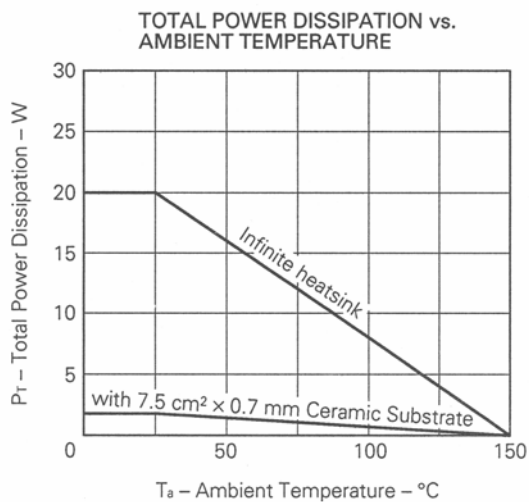
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			50	μA	$V_{CB} = 150\text{ V}, I_E = 0$
Emitter Cutoff Current	I_{EBO}			50	μA	$V_{EB} = 4\text{ V}, I_C = 0$
DC Current Gain	h_{FE} ***	40	100	200		$V_{CE} = 10\text{ V}, I_C = 0.4\text{ A}$
Collector Saturation Voltage	$V_{CE(sat)}$ ***		0.2	1.0	V	$I_C = 500\text{ mA}, I_B = 50\text{ mA}$
Gain Bandwidth Product	f_T		10		MHz	$V_{CE} = 10\text{ V}, I_E = 0.4\text{ A}$

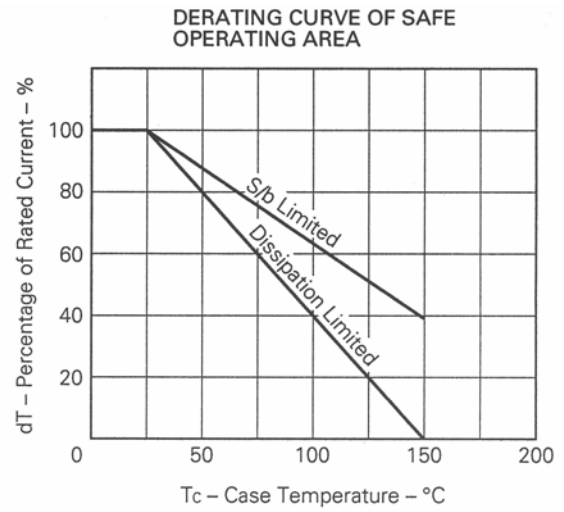
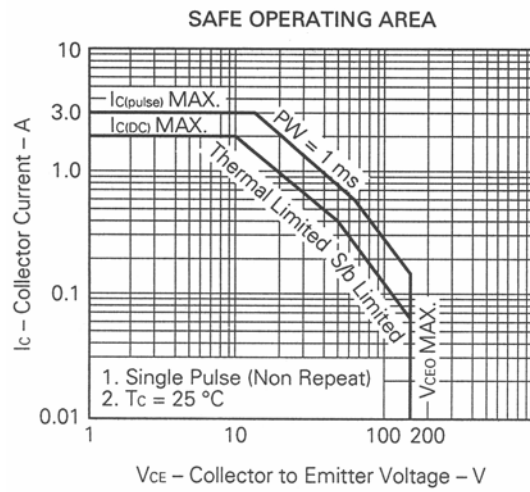
***Pulsed: $PW \leq 350\text{ }\mu\text{s}$, Duty Cycle $\leq 2\%$

h_{FE} Classification

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

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





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"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).

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