

NPN SILICON EPITAXIAL TRANSISTOR
MP-3

DESCRIPTION

2SD1033 is designed for Color TV Vertical Deflection Output, especially in Hybrid Integrated Circuits.

FEATURES

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

QUALITY GRADE

Standard

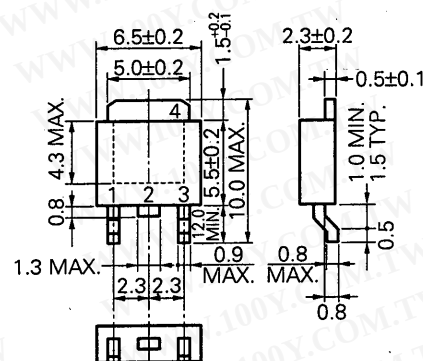
Please refer to "Quality grade on NEC Semiconductor Devices" (Document number IEI-1209) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

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

Collector to Base Voltage	V_{CBO}	200	V
Collector to Emitter Voltage	V_{CE0}	150	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	2	A
Collector Current (Pulse)*	I_C	3	A
Total Power Dissipation ($T_a = 25\text{ }^{\circ}\text{C}$)**	P_T	2.0	W
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^{\circ}\text{C}$

*PW $\leq 10\text{ ms}$, Duty Cycle $\leq 50\%$

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

PACKAGE DIMENSIONS
in millimeters

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

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_r		10		MHz	$V_{CE} = 10\text{ V}, I_E = 0.4\text{ A}$

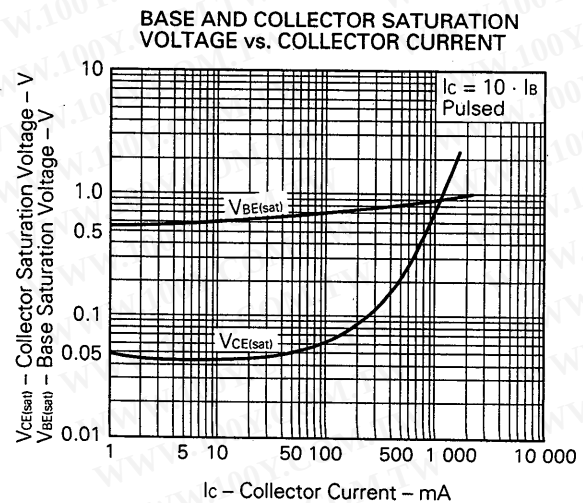
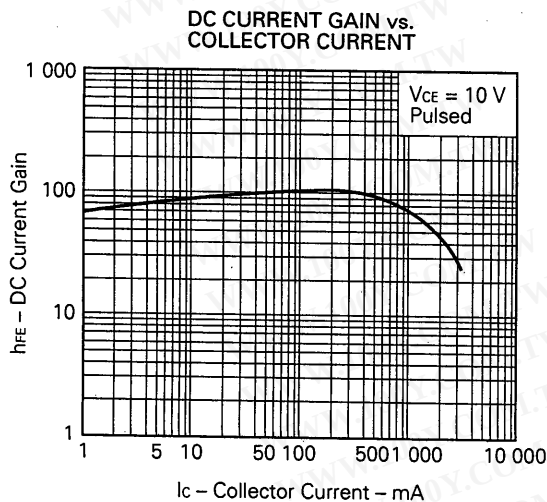
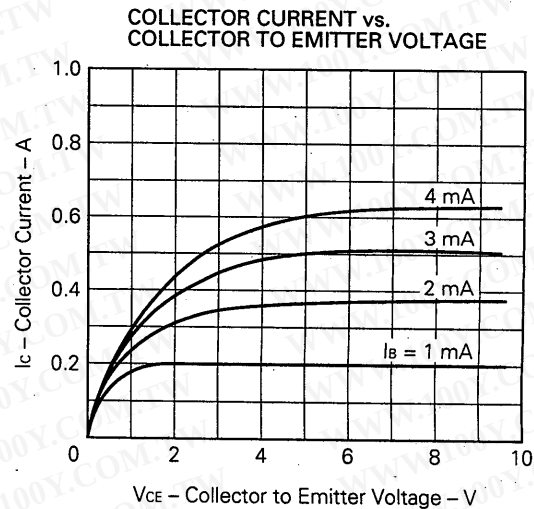
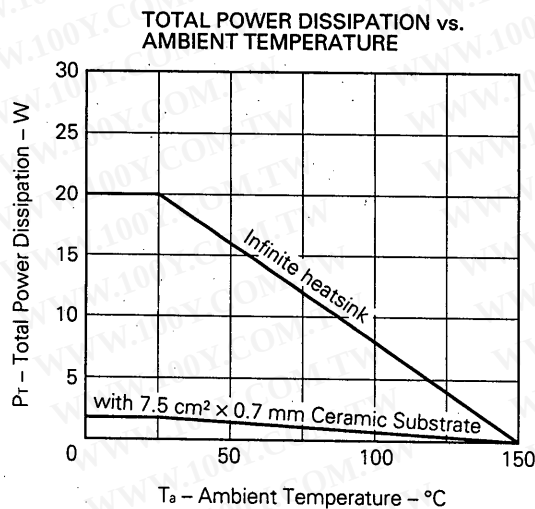
***Pulsed: $PW \leq 350\text{ }\mu\text{s}$, Duty Cycle $\leq 2\%$

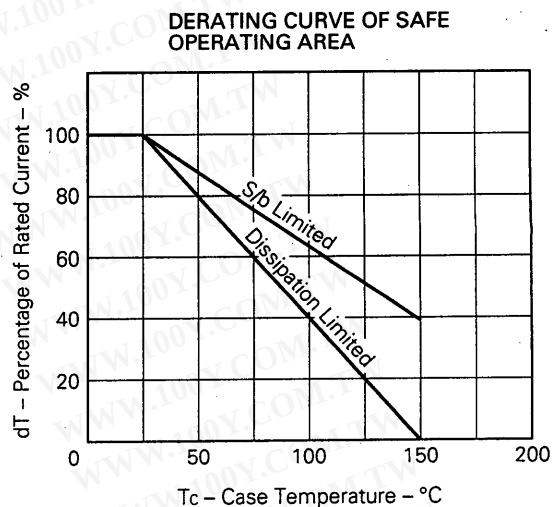
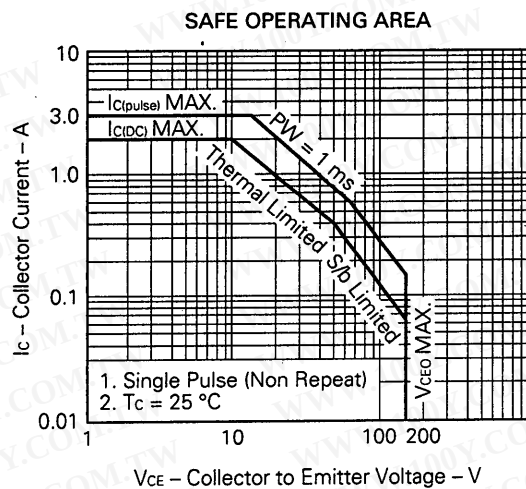
h_{FE} Classification

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

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





Reference

Application note name	No.
Quality control of NEC semiconductors devices.	TEI-1202
Quality control guide of semiconductors devices.	MEI-1202
Assembly manual of semiconductors devices.	IEI-1207
Design of Push-Pull Type Switching Regulators (Basic)	TEB-1002
Design of Push-Pull Type Switching Regulators (Applications)	TEB-1003
Optimum Base Drive Conditions of Switching Power Transistors	TEB-1014

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The devices listed in this document are not suitable for use in aerospace equipment, submarine cables, nuclear reactor control systems and life support systems. If customers intend to use NEC devices for above applications or they intend to use "Standard" quality grade NEC devices for applications not intended by NEC, please contact our sales people in advance.

Application examples recommended by NEC Corporation.

Standard: Computer, Office equipment, Communication equipment, Test and Measurement equipment, Machine tools, Industrial robots, Audio and Visual equipment, Other consumer products, etc.

Special: Automotive and Transportation equipment, Traffic control systems, Antidisaster systems, Anticrime systems, etc.