

NPN SILICON EPITAXIAL TRANSISTOR
MP-3

DESCRIPTION

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

FEATURES

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

QUALITY GRADE

Standard

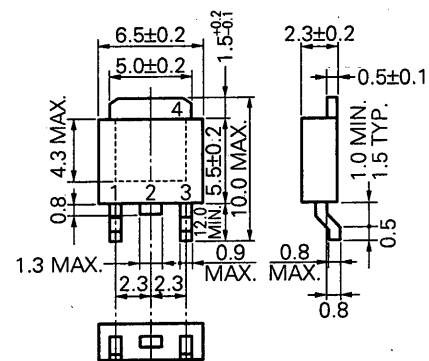
Please refer to "Quality grade on NEC Semiconductor Devices" (Document number IEI-1209) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

ABSOLUTE MAXIMUM RATINGS ($T_a = 25$ °C)

Collector to Base Voltage	V_{CB0}	200	V
Collector to Emitter Voltage	V_{CE0}	150	V
Emitter to Base Voltage	V_{EB0}	5	V
Collector Current (DC)	I_c	2	A
Collector Current (Pulse)*	I_c	3	A
Total Power Dissipation ($T_a = 25$ °C)**	P_T	2.0	W
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55 to +150	°C

*PW \leq 10 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

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

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

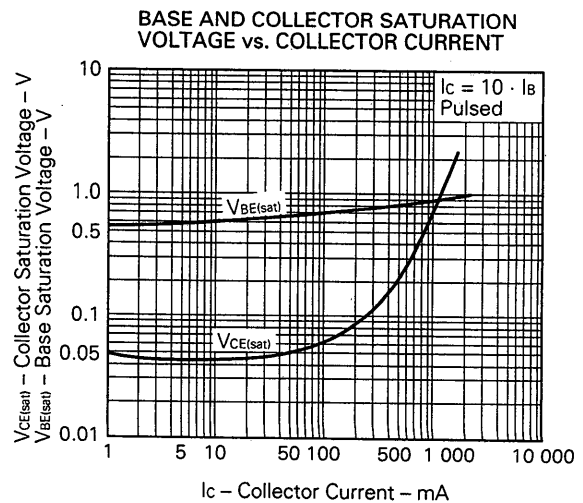
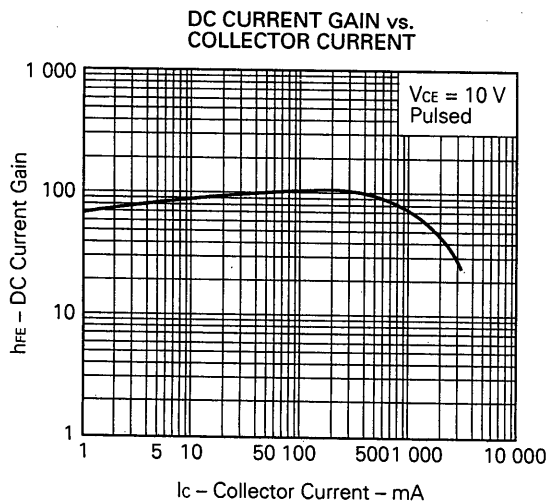
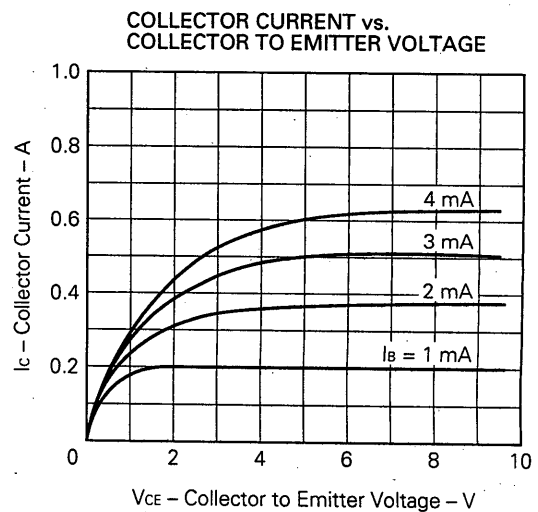
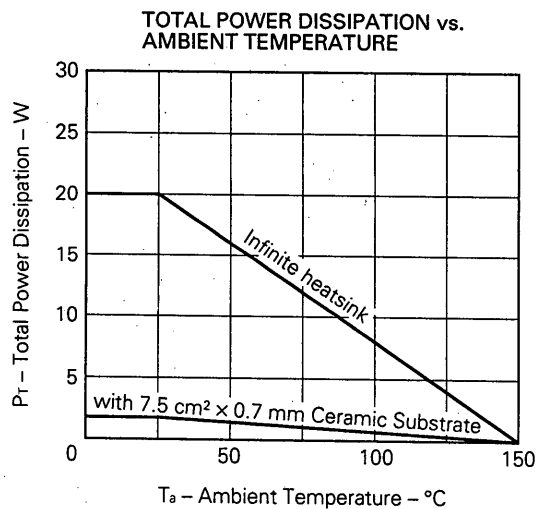
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I _{CB0}			50	μA	V _{CB} = 150 V, I _E = 0
Emitter Cutoff Current	I _{EB0}			50	μA	V _{EB} = 4 V, I _C = 0
DC Current Gain	h _{FE} ***	40	100	200		V _{CE} = 10 V, I _C = 0.4 A
Collector Saturation Voltage	V _{CE(sat)} ***		0.2	1.0	V	I _C = 500 mA, I _B = 50 mA
Gain Bandwidth Product	f _r		10		MHz	V _{CE} = 10 V, I _E = 0.4 A

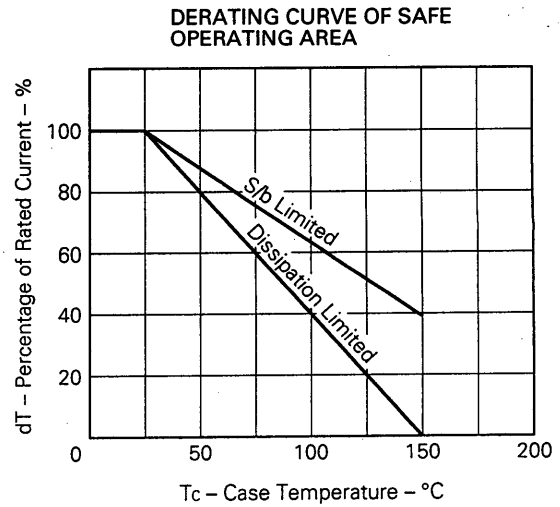
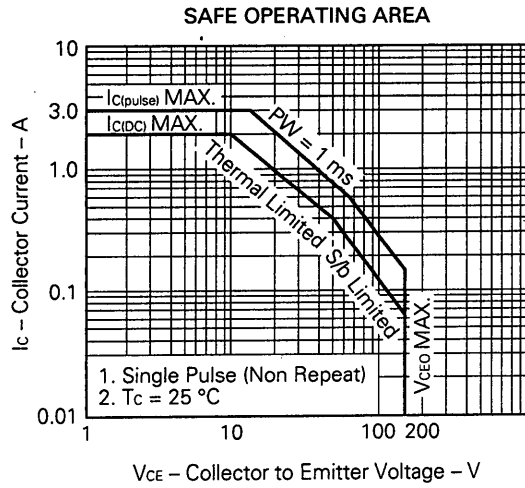
***Pulsed: PW ≤ 350 μs, Duty Cycle ≤ 2 %

h_{FE} Classification

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

TYPICAL CHARACTERISTICS (T_a = 25 °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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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.