

PNP SILICON TRIPLE DIFFUSED TRANSISTOR
MP-3

DESCRIPTION

2SB768 is designed for Color TV Vertical Deflection Output, especially in Hybrid Integrated Circuits.

FEATURES

- High Voltage : $V_{CE0} = -150$ V
- Complement to 2SD1033

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.

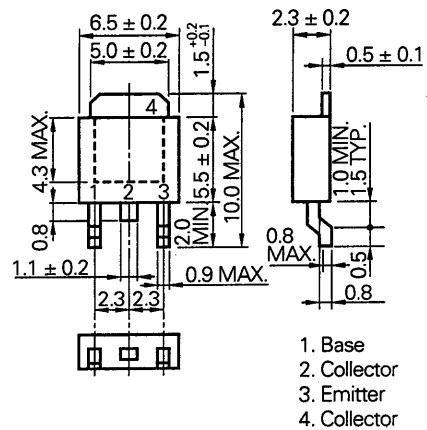
ABSOLUTE MAXIMUM RATINGS ($T_a = 25$ °C)

| | | | |
|--|-----------|-------------|----|
| Collector to Base Voltage | V_{CBO} | -200 | V |
| Collector to Emitter Voltage | V_{CEO} | -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 ($T_a = 25$ °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 ≤ 50 %

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

PACKAGE DIMENSIONS
(in millimeters)



ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

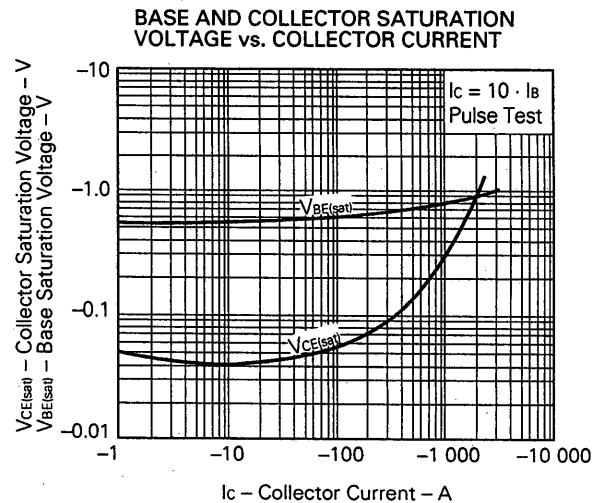
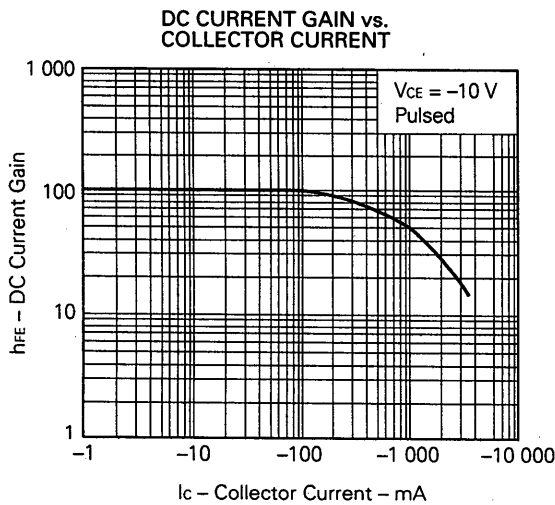
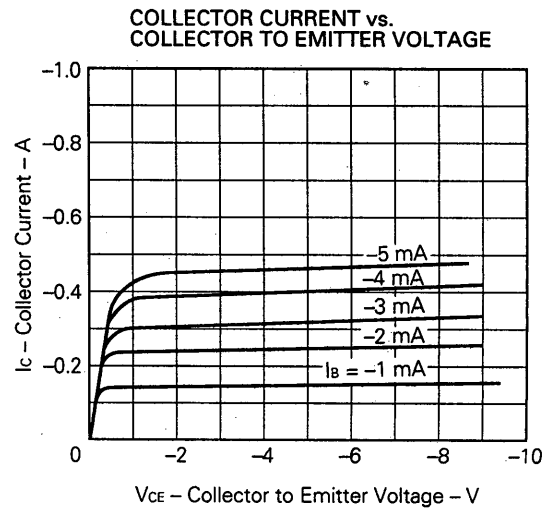
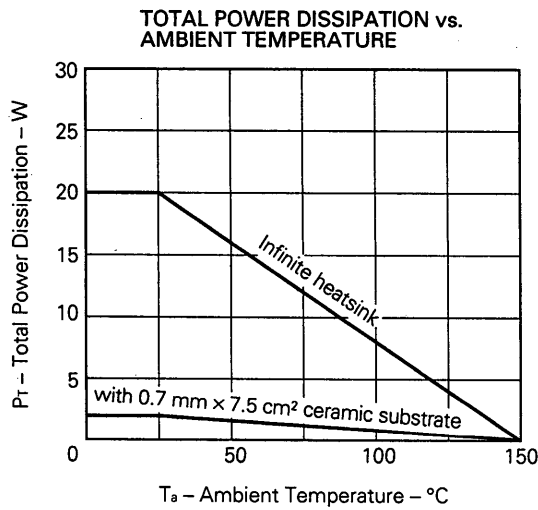
| CHARACTERISTIC | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS |
|------------------------------|--------------------------|------|-------|------|------|---|
| Collector Cutoff Current | I _{cBO} | | | -50 | μA | V _{CB} = -150 V, I _E = 0 |
| Emitter Cutoff Current | I _{EBO} | | | -50 | μA | V _{EB} = -4.0 V, I _C = 0 |
| DC Current Gain | h _{FE1} *** | 40 | 80 | 200 | | V _{CE} = -10 V, I _C = -0.4 A |
| Collector Saturation Voltage | V _{CE(sat)} *** | | -0.15 | -1.0 | V | I _C = -500 mA, I _B = -50 mA |
| Gain Bandwidth Product | f _T | | 10 | | MHz | V _{CE} = -10 V, I _E = -0.4 mA |

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

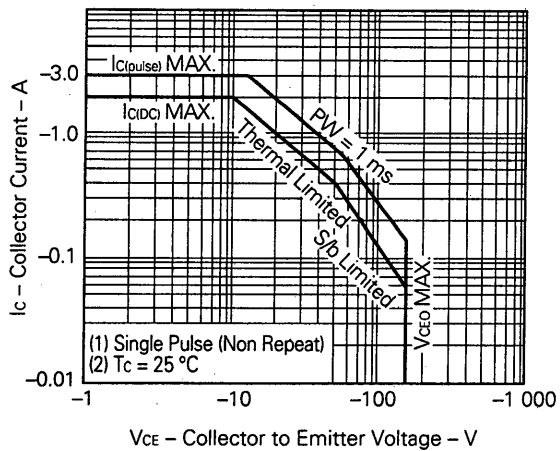
h_{FE} Classification

| MARKING | M | L | K |
|------------------|----------|-----------|------------|
| h _{FE1} | 40 to 80 | 60 to 120 | 100 to 200 |

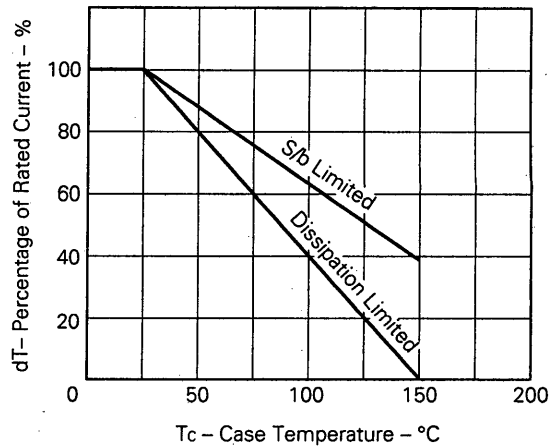
TYPICAL CHARACTERISTICS (T_a = 25 °C)



SAFE OPERATING AREA



DERATING OF SAFE OPERATING AREA



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.