# 2N5195

## MEDIUM POWER PNP SILICON TRANSISTOR

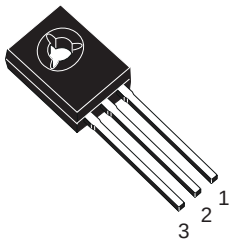
- STMicroelectronics PREFERRED SALESTYPE
- PNP TRANSISTOR

**APPLICATIONS**
- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

**DESCRIPTION**
The 2N5195 is a silicon epitaxial-base PNP transistor in Jedec SOT-32 plastic package.

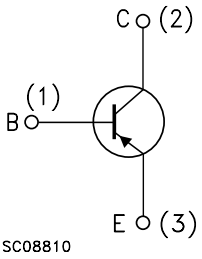
It is inteded for use in medium power linear and switching applications.

The complementary NPN type is 2N5192.




**SOT-32**

**INTERNAL SCHEMATIC DIAGRAM**




**ABSOLUTE MAXIMUM RATINGS**

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage ($I_E$ = 0) | -80 | V |
| $V_{CEO}$ | Collector-Emitter Voltage ($I_B$ = 0) | -80 | V |
| $V_{EBO}$ | Emitter-Base Voltage ($I_C$ = 0) | -5 | V |
| $I_C$ | Collector Current | -4 | A |
| $I_{CM}$ | Collector Peak Current | -7 | A |
| $I_B$ | Base Current | -1 | A |
| $P_{tot}$ | Total Dissipation at $T_c \leq 25\ ^oC$ | 40 | W |
| $T_{stg}$ | Storage Temperature | -65 to 150 | $^oC$ |
| $T_j$ | Max. Operating Junction Temperature | 150 | $^oC$ |

## THERMAL DATA

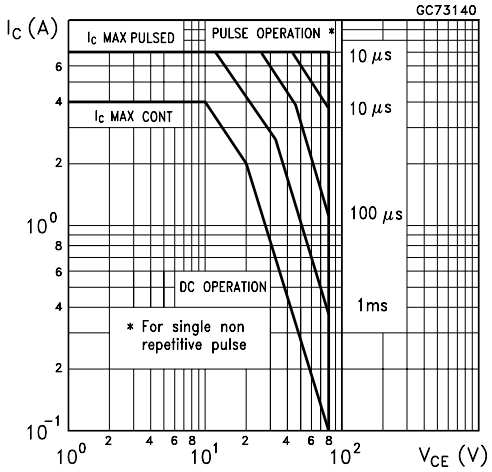
| | | | | |
|---|---|---|---|---|
| $R_{thj\text{-}case}$ | Thermal Resistance Junction-case | Max | 3.12 | $^oC/W$ |
| $R_{thj\text{-}amb}$ | Thermal Resistance Junction-ambient | Max | 100 | $^oC/W$ |

## ELECTRICAL CHARACTERISTICS ($T_{case}$ = 25 $^oC$ unless otherwise specified)

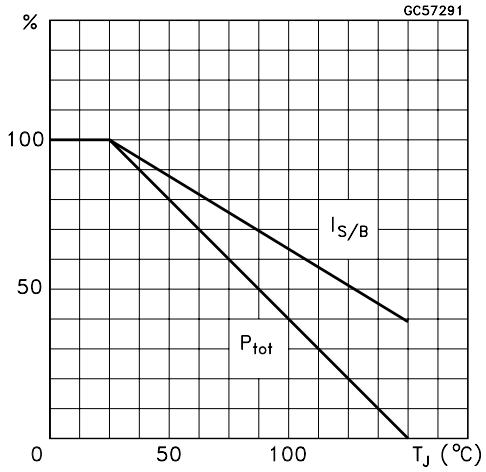
| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $I_{CBO}$ | Collector Cut-off Current ($I_E$ = 0) | $V_{CB}$ = rated $V_{CBO}$ | | | -0.1 | mA |
| $I_{CEX}$ | Collector Cut-off Current ($V_{BE}$ = -1.5V) | $V_{CE}$ = rated $V_{CEO}$<br>$V_{CE}$ = rated $V_{CEO}$ $T_c$ = 125 $^oC$ | | | -0.1<br>-2 | mA<br>mA |
| $I_{CEO}$ | Collector Cut-off Current ($I_B$ = 0) | $V_{CE}$ = rated $V_{CEO}$ | | | -1 | mA |
| $I_{EBO}$ | Emitter Cut-off Current ($I_C$ = 0) | $V_{EB}$ = -5 V | | | -1 | mA |
| $V_{CEO(sus)}$* | Collector-Emitter Sustaining Voltage | $I_C$ = -100 mA | -80 | | | V |
| $V_{CE(sat)}$* | Collector-Emitter Saturation Voltage | $I_C$ = -1.5 A $I_B$ = -0.15 A<br>$I_C$ = -4 A $I_B$ = -1 A | | | -0.6<br>-1.2 | V<br>V |
| $V_{BE}$* | Base-Emitter Voltage | $I_C$ = -1.5 A $V_{CE}$ = -2 V | | | -1.2 | V |
| $h_{FE}$* | DC Current Gain | $I_C$ = -1.5 A $V_{CE}$ = -2 V<br>$I_C$ = -4 A $V_{CE}$ = -2 V | 20<br>7 | | 80 | |
| $f_T$ | Transition frequency | $I_C$ = -1 A $V_{CE}$ = -10 V | 2 | | | MHz |

* Pulsed: Pulse duration = 300 µs, duty cycle 1.5 %

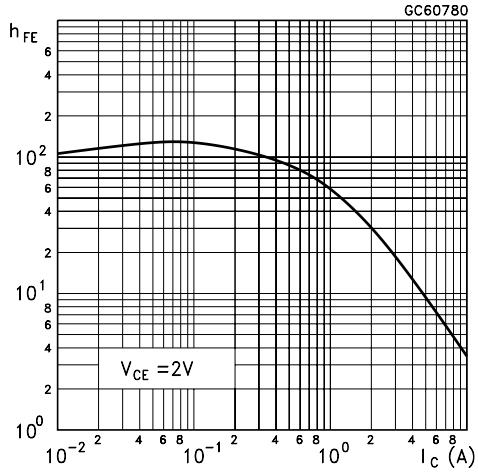
Safe Operating Area



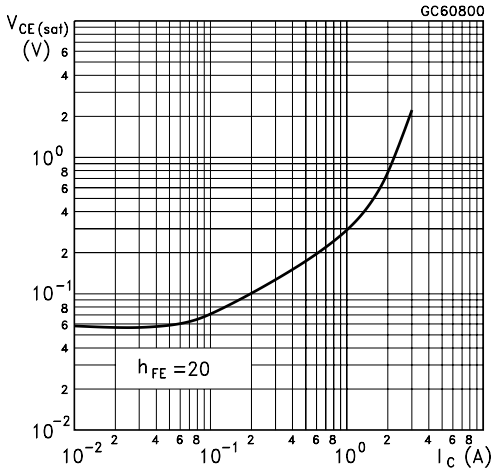

Derating Curves



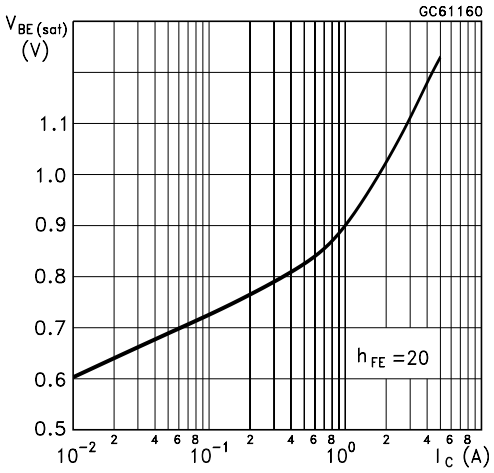
DC Current Gain




Collector-Emitter Saturation Voltage




Base-Emitter Saturation Voltage



## SOT-32 (TO-126) MECHANICAL DATA

| DIM. | mm | | | inch | | |
|---|---|---|---|---|---|---|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 7.4 | | 7.8 | 0.291 | | 0.307 |
| B | 10.5 | | 10.8 | 0.413 | | 0.445 |
| b | 0.7 | | 0.9 | 0.028 | | 0.035 |
| b1 | 0.49 | | 0.75 | 0.019 | | 0.030 |
| C | 2.4 | | 2.7 | 0.040 | | 0.106 |
| c1 | 1.0 | | 1.3 | 0.039 | | 0.050 |
| D | 15.4 | | 16.0 | 0.606 | | 0.629 |
| e | | 2.2 | | | 0.087 | |
| e3 | 4.15 | | 4.65 | 0.163 | | 0.183 |
| F | | 3.8 | | | 0.150 | |
| G | 3 | | 3.2 | 0.118 | | 0.126 |
| H | | | 2.54 | | | 0.100 |