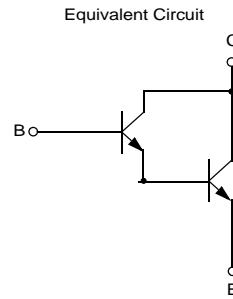
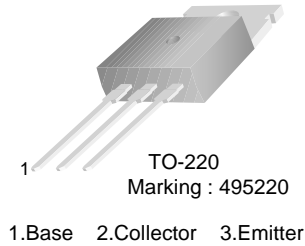


495220

NPN Epitaxial Silicon Darlington Transistor

High Voltage & Medium Power Linear Application



Absolute Maximum Ratings * $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|------------|---|------------|------------------|
| BV_{CBO} | Collector-Base Voltage | 550 | V |
| BV_{CEO} | Collector-Emitter Voltage | 325 | V |
| BV_{EBO} | Emitter-Base Voltage | 10 | V |
| I_C | Collector Current (DC) | 4 | A |
| I_{CP} | Collector Current (Pulse)** | 6 | A |
| I_B | Base Current (DC) | 0.5 | A |
| P_C | Collector Dissipation($T_C=25^\circ\text{C}$) | 40 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Junction Temperature Range | - 55 ~ 150 | $^\circ\text{C}$ |

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.
** Pulse Test : Pulse Width $\leq 5\text{ms}$, Duty Cycle $\leq 10\%$

Electrical Characteristics * $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|-----------------|--------------------------------------|---|--------------|------|------------|--------|
| $BV_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C=1.5\text{A}$, $I_B = 0.05\text{A}$, $L = 25\text{mH}$ | 250 | | | V |
| I_{CBO} | Collector Cut-off Current | $V_{CB} = 550\text{V}$, $I_E = 0$ | | | 5 | mA |
| I_{EBO} | Emitter Cut-off Current | $V_{EB}=10\text{V}$, $I_C=0$ | | | 1 | mA |
| h_{FE} | DC Current Gain | $V_{CE}=5\text{V}$, $I_C=0.5\text{A}$ $V_{CE}=5\text{V}$, $I_C=3.0\text{A}$ | 5000 1000 | | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 0.75\text{A}$, $I_B = 0.17\text{A}$ $I_C = 2\text{A}$, $I_B = 5\text{mA}$ | | | 1.7 1.5 | V V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C = 2\text{A}$, $I_B = 5\text{mA}$ | | | 2 | V |

* Pulse Test : Pulse Width $\leq 5\text{ms}$, Duty Cycle $\leq 10\%$



TRADEMARKS

The following are registered and unregistered trademarks and service marks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

| | | | |
|---|---|--|---|
| ACEx [®] | Green FPS [™] | Power247 [®] | SuperSOT [™] -8 |
| Build it Now [™] | Green FPS [™] e-Series [™] | POWEREDGE [®] | SyncFET [™] |
| CorePLUS [™] | GTO [™] | Power-SPM [™] | The Power Franchise [®] |
| CROSSVOLT [™] | <i>i-Lo</i> [™] | PowerTrench [®] |  |
| CTL [™] | IntelliMAX [™] | Programmable Active Droop [™] | TinyBoost [™] |
| Current Transfer Logic [™] | ISOPLANAR [™] | QFET [®] | TinyBuck [™] |
| EcoSPARK [®] | MegaBuck [™] | QS [™] | TinyLogic [®] |
|  | MICROCOUPLER [™] | QT Optoelectronics [™] | TINYOPTO [™] |
| Fairchild [®] | MicroFET [™] | Quiet Series [™] | TinyPower [™] |
| Fairchild Semiconductor [®] | MicroPak [™] | RapidConfigure [™] | TinyPWM [™] |
| FACT Quiet Series [™] | MillerDrive [™] | SMART START [™] | TinyWire [™] |
| FACT [®] | Motion-SPM [™] | SPM [®] | μSerDes [™] |
| FAST [®] | OPTOLOGIC [®] | STEALTH [™] | UHC [®] |
| FastvCore [™] | OPTOPLANAR [®] | SuperFET [™] | UniFET [™] |
| FPS [™] |  | SuperSOT [™] -3 | VCX [™] |
| FRFET [®] | PDP-SPM [™] | SuperSOT [™] -6 | |
| Global Power Resource SM | Power220 [®] | | |

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

- Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
- A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

| Datasheet Identification | Product Status | Definition |
|--------------------------|------------------------|--|
| Advance Information | Formative or In Design | This datasheet contains the design specifications for product development. Specifications may change in any manner without notice. |
| Preliminary | First Production | This datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design. |
| No Identification Needed | Full Production | This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design. |
| Obsolete | Not In Production | This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only. |