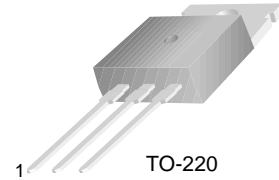


BUT12/12A

High Voltage Power Switching Applications



1.Base 2.Collector 3.Emitter

NPN Silicon Transistor

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

| Symbol | Parameter | Value | Units |
|-----------|--|------------|------------------|
| V_{CBO} | Collector-Base Voltage : BUT12 : BUT12A | 850 | V |
| | | 1000 | V |
| V_{CEO} | Collector-Emitter Voltage : BUT12 : BUT12A | 400 | V |
| | | 450 | V |
| I_C | Collector Current (DC) | 8 | A |
| I_{CP} | *Collector Current (Pulse) | 20 | A |
| I_B | Base Current | 4 | A |
| P_C | Collector Dissipation ($T_C=25^\circ\text{C}$) | 100 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | - 65 ~ 175 | $^\circ\text{C}$ |

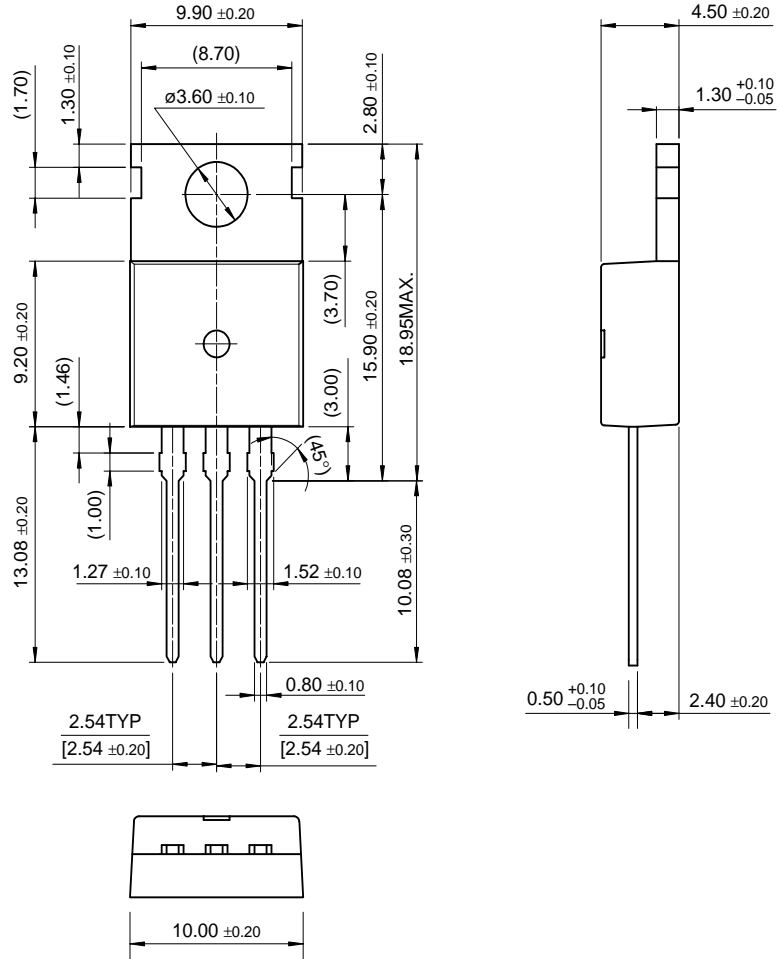
Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|----------------|--|---|------|------|------|---------------|
| $V_{CEO(sus)}$ | * Collector-Emitter Sustaining Voltage | $I_C = 100\text{mA}$, $L = 25\text{mH}$ | 400 | | | V |
| I_{CES} | Collector Cut-off Current | $V_{CE} = V_{CES}$, $V_{BE} = 0$ | | | 1 | mA |
| I_{EBO} | Emitter Cut-off Current | $V_{BE} = 9\text{V}$, $I_C = 0$ | | | 10 | mA |
| $V_{CE(sat)}$ | * Collector-Emitter Saturation Voltage | $I_C = 6\text{A}$, $I_B = 1.2\text{A}$ | | | 1.5 | V |
| $V_{BE(sat)}$ | * Base-Emitter Saturation Voltage | $I_C = 6\text{A}$, $I_B = 1.2\text{A}$ | | | 1.5 | V |
| t_{ON} | Turn On Time | $V_{CC} = 250\text{V}$, $I_C = 6\text{A}$ $I_{B1} = - I_{B2} = 1.2\text{A}$ $R_L = 41.6\Omega$ | | | 1 | μs |
| t_{STG} | Storage Time | | | | 4 | μs |
| t_F | Fall Time | | | | 0.8 | μs |

* Pulsed Test: $PW = 300\mu\text{s}$, duty cycle = 1.5%

Package Dimensions

TO-220



Dimensions in Millimeters

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| Datasheet Identification | Product Status | Definition |
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| 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, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design. |
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