New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

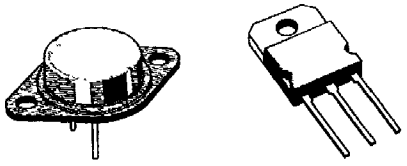
TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

# BUW32/32P/32PFI
# BUW32A/32AP/32APFI

## HIGH VOLTAGE POWER SWITCH

### DESCRIPTION

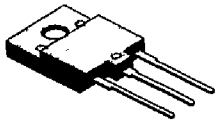
The BUW32/A, BUW32P/AP and BUW32PFI/APFI are silicon multiepitaxial mesa PNP transistors mounted respectively in TO-3 metal case, TO-218 plastic package and ISOWATT218 fully isolated package. They are intended for high voltage, fast switching and industrial applications.



TO-3

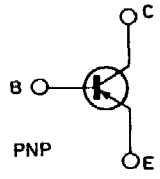


TO-218



ISOWATT218

**INTERNAL SHEMATIC DIAGRAM**




**ABSOLUTE MAXIMUM RATINGS**

| Symbol | Parameter | BUW | | | Unit |
|---|---|---|---|---|---|
| | | 32/P/PFI | | 32A/AP/APFI | |
| $V_{CES}$ | Collector-emitter Voltage ($V_{BE}$ = 0) | – 400 | | – 450 | V |
| $V_{CEO}$ | Collector-emitter Voltage ($I_B$ = 0) | – 350 | | – 400 | V |
| $V_{EBO}$ | Emitter-base Voltage ($I_C$ = 0) | – 5 | | – 7 | V |
| $I_C$ | Collector Current | – 10 | | | A |
| $I_B$ | Base Current | – 5 | | | A |
| | | TO-3 | TO-218 | ISOWATT218 | |
| $P_{tot}$ | Total Power Dissipation at $T_c$ < 25 °C | 125 | 105 | 55 | W |
| $T_{stg}$ | Storage Temperature | – 65 to 175 | – 65 to 150 | – 65 to 150 | °C |
| $T_j$ | Max. Operating Junction Temperature | 175 | 150 | 150 | °C |

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

## THERMAL DATA

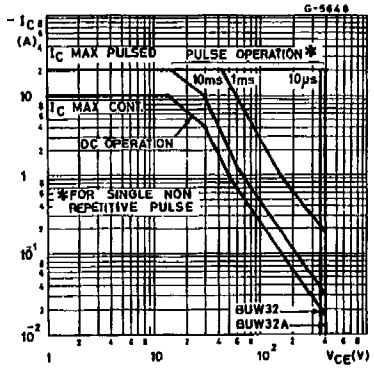
| | | | TO-3 | TO-218 | ISOWATT218 | |
|---|---|---|---|---|---|---|
| $R_{th\ j\text{-}case}$ | Thermal Resistance Junction-case | max | 1.19 | 1.19 | 2.27 | °C/W |

## ELECTRICAL CHARACTERISTICS ($T_{case}$ = 25 °C unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $I_{CES}$ | Collector Cutoff Current ($V_{BE}$ = 0) | $V_{CE}$ = Rated $V_{CES}$<br>$V_{CE}$ = Rated $V_{CES}$ $T_{case}$ = 125 °C | | | − 1<br>− 5 | mA<br>mA |
| $I_{EBO}$ | Emitter Cutoff Current ($I_C$ = 0) | $V_{EB}$ = Rated $V_{EBO}$ | | | − 1 | mA |
| $V_{CEO(sus)}$* | Collector-emitter Sustaining Voltage ($I_B$ = 0) | $I_C$ = − 100 mA<br>for **BUW32/P/PFI**<br>for **BUW32A/AP/APFI** | <br>− 350<br>− 400 | | | <br>V<br>V |
| $V_{CE(sat)}$* | Collector-emitter Saturation Voltage | $I_C$ = − 5 A $I_B$ = − 1.5 A | | | − 1.5 | V |
| $V_{BE(sat)}$* | Base-emitter Saturation Voltage | $I_C$ = − 5 A $I_B$ = − 1.5 A | | | − 1.6 | V |
| $h_{FE}$* | DC Current Gain | $I_C$ = − 1 A $V_{CE}$ = − 5 V | 12 | | | |
| $I_{s/b}$ | Second Breakdown Collector Current | $V_{CE}$ = − 30 V<br>for **BUW32/A**<br>for **BUW32P/AP**<br>for **BUW32PFI/APFI** | <br>− 4.2<br>− 3.5<br>− 1.7 | | | <br>A<br>A<br>A |
| $t_{on}$ | Turn-on Time | Resistive Load<br>$V_{CC}$ = − 250 V<br>$I_C$ = − 5 A<br>$I_{B1}$ = − $I_{B2}$ = − 1 A | | 0.3 | 0.6 | µs |
| $t_s$ | Storage Time | | | 0.7 | 1.5 | µs |
| $t_f$ | Fall Time | | | 0.25 | 0.6 | µs |

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

Safe Operating Areas.




Safe Operating Areas.

