advanced

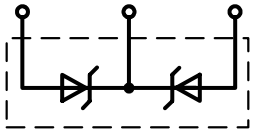
# Schottky

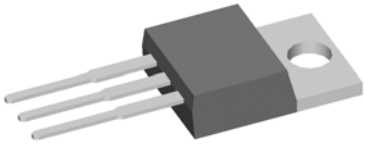
$V_{RRM}$ = 60 V
$I_{FAV}$ = 2x 15 A
$V_F$ = 0.69 V

High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

**Part number** *(Marking on product)*

DSB 30 C **60PB**





**Features / Advantages:**

- Very low Vf
- Extremely low switching losses
- Low Irm-values
- Improved thermal behaviour
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

**Applications:**

- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

**Package:**

TO-220AB

- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

| Symbol | Definition | Conditions | | Ratings min. | typ. | max. | Unit |
|---|---|---|---|---|---|---|---|
| $V_{RRM}$ | *max. repetitive reverse voltage* | | $T_{VJ}$ = 25 °C | | | 60 | V |
| $I_R$ | *reverse current* | $V_R$ = 60 V | $T_{VJ}$ = 25 °C | | | 10 | mA |
| | | $V_R$ = 60 V | $T_{VJ}$ = 100 °C | | | 30 | mA |
| $V_F$ | *forward voltage* | $I_F$ =A 15 | $T_{VJ}$ = 25 °C | | | 0.78 | V |
| | | $I_F$ =A 30 | | | | 1.21 | V |
| | | $I_F$ =A 15 | $T_{VJ}$ = 125 °C | | | 0.69 | V |
| | | $I_F$ =A 30 | | | | 0.95 | V |
| $I_{FAV}$ | *average forward current* | rectangular, d = 0.5 | $T_C$ =1 25 °C | | | 15 | A |
| $V_{F0}$ | *threshold voltage* } *for power loss calculation only* | | $T_{VJ}$ = 150 °C | | | 0.45 | V |
| $r_F$ | *slope resistance* } | | | | | 10.7 | mΩ |
| $R_{thJC}$ | *thermal resistance junction to case* | | | | | 1.75 | K/W |
| $T_{VJ}$ | *virtual junction temperature* | | | -55 | | 150 | °C |
| $P_{tot}$ | *total power dissipation* | | $T_C$ = 25 °C | | | 70 | W |
| $I_{FSM}$ | *max. forward surge current* | $t_p$ =1 0 ms (50 Hz), sine | $T_{VJ}$ =4 5 °C | | | 150 | A |
| $C_J$ | *junction capacitance* | $V_R$ = V; f = 1 MHz | $T_{VJ}$ = 25 °C | | | | pF |
| $E_{AS}$ | *non-repetitive avalanche energy* | $I_{AS}$ =A ; L = 100 µH | $T_{VJ}$ = 25 °C | | | tbd | mJ |
| $I_{AR}$ | *repetitive avalanche current* | $V_A$ = 1.5·$V_R$ typ.; f = 10 kHz | | | | tbd | A |

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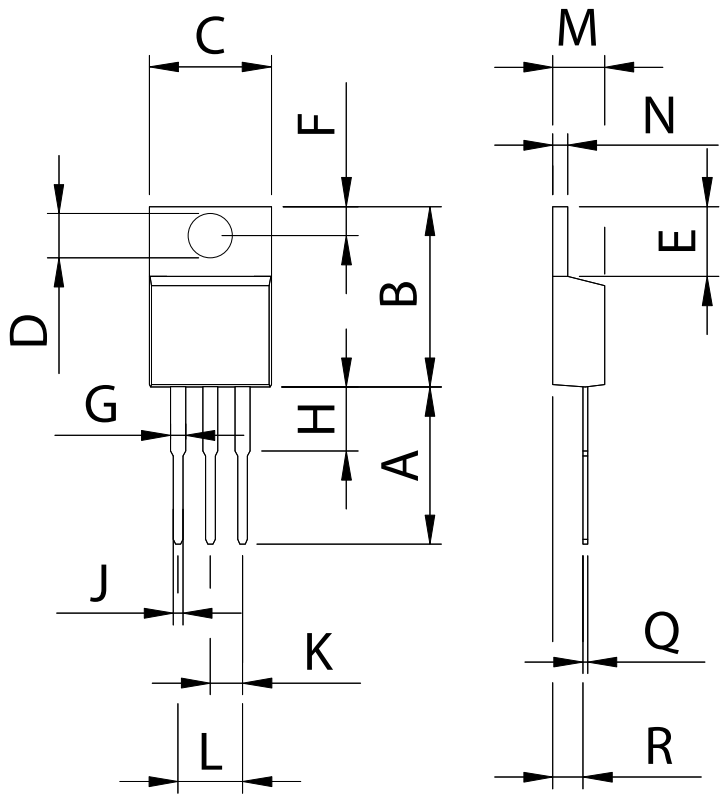
| Symbol | Definition | Conditions | Ratings min. | typ. | max. | Unit |
|---|---|---|---|---|---|---|
| $I_{RMS}$ | *RMS current* | per pin* | | | 35 | A |
| $R_{thCH}$ | *thermal resistance case to heatsink* | | | 0.50 | | K/W |
| $M_D$ | *mounting torque* | | 0.4 | | 0.6 | Nm |
| $F_C$ | *mounting force with clip* | | 20 | | 60 | N |
| $T_{stg}$ | *storage temperature* | | -55 | | 150 | °C |
| **Weight** | | | | 2 | | g |

* Irms is typically limited by: 1. pin-to-chip resistance; or by 2. current capability of the chip.
In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.

**Outlines TO-220AB**




| Dim. | Millimeter Min. | Max. | Inches Min. | Max. |
|---|---|---|---|---|
| A | 12.70 | 13.97 | 0.500 | 0.550 |
| B | 14.73 | 16.00 | 0.580 | 0.630 |
| C | 9.91 | 10.66 | 0.390 | 0.420 |
| D | 3.54 | 4.08 | 0.139 | 0.161 |
| E | 5.85 | 6.85 | 0.230 | 0.270 |
| F | 2.54 | 3.18 | 0.100 | 0.125 |
| G | 1.15 | 1.65 | 0.045 | 0.065 |
| H | 2.79 | 5.84 | 0.110 | 0.230 |
| J | 0.64 | 1.01 | 0.025 | 0.040 |
| K | 2.54 | BSC | 0.100 | BSC |
| M | 4.32 | 4.82 | 0.170 | 0.190 |
| N | 1.14 | 1.39 | 0.045 | 0.055 |
| Q | 0.35 | 0.56 | 0.014 | 0.022 |
| R | 2.29 | 2.79 | 0.090 | 0.110 |