

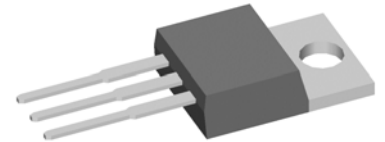
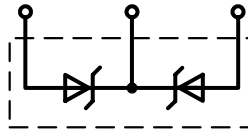
Schottky

High Performance Schottky Diode
 Low Loss and Soft Recovery
 Common Cathode

$V_{RRM} = 30\text{ V}$
 $I_{FAV} = 2 \times 15\text{ A}$
 $V_F = 0.44\text{ V}$

Part number (Marking on product)

DSB 30 C 30PB



Features / Advantages:

- Very low V_f
- Extremely low switching losses
- Low I_{rm} -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

Ratings

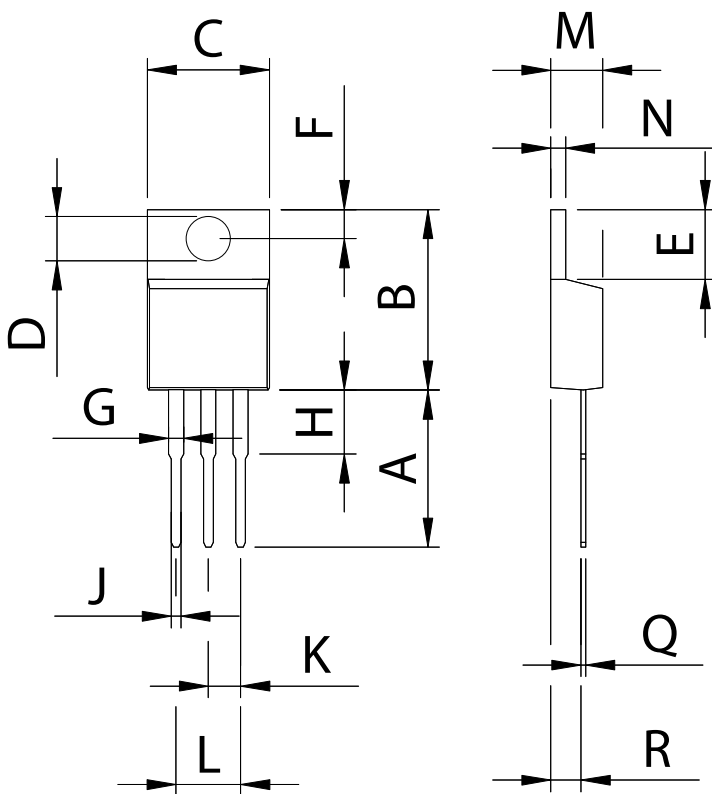
| Symbol | Definition | Conditions | Ratings | | | Unit |
|------------|-------------------------------------|--|---------|------|------|------------|
| | | | min. | typ. | max. | |
| V_{RRM} | max. repetitive reverse voltage | $T_{VJ} = 25\text{ °C}$ | | | 30 | V |
| I_R | reverse current | $V_R = 30\text{ V}$ $T_{VJ} = 25\text{ °C}$ | | | 10 | mA |
| | | $V_R = 30\text{ V}$ $T_{VJ} = 100\text{ °C}$ | | | 40 | mA |
| V_F | forward voltage | $I_F = 15\text{ A}$ $T_{VJ} = 25\text{ °C}$ | | | 0.51 | V |
| | | $I_F = 30\text{ A}$ $T_{VJ} = 25\text{ °C}$ | | | 0.66 | V |
| | | $I_F = 15\text{ A}$ $T_{VJ} = 125\text{ °C}$ | | | 0.44 | V |
| | | $I_F = 30\text{ A}$ $T_{VJ} = 125\text{ °C}$ | | | 0.64 | V |
| I_{FAV} | average forward current | rectangular, $d = 0.5$ $T_C = 130\text{ °C}$ | | | 15 | A |
| V_{F0} | threshold voltage | } for power loss calculation only $T_{VJ} = 150\text{ °C}$ | | | 0.21 | V |
| r_F | slope resistance | | | | 13.9 | m Ω |
| R_{thJC} | thermal resistance junction to case | | | | 1.75 | K/W |
| T_{VJ} | virtual junction temperature | | -55 | | 150 | °C |
| P_{tot} | total power dissipation | $T_C = 25\text{ °C}$ | | | 70 | W |
| I_{FSM} | max. forward surge current | $t_p = 10\text{ ms (50 Hz), sine}$ $T_{VJ} = 45\text{ °C}$ | | | 140 | A |
| C_j | junction capacitance | $V_R = \text{ V; } f = 1\text{ MHz}$ $T_{VJ} = 25\text{ °C}$ | | | | pF |
| E_{AS} | non-repetitive avalanche energy | $I_{AS} = \text{ A; } L = 100\text{ }\mu\text{H}$ $T_{VJ} = 25\text{ °C}$ | | | tbd | mJ |
| I_{AR} | repetitive avalanche current | $V_A = 1.5 \cdot V_R$ typ.; $f = 10\text{ kHz}$ | | | tbd | A |

| Symbol | Definition | Conditions | Ratings | | | Unit |
|---------------|-------------------------------------|------------|---------|------|------|------|
| | | | min. | typ. | max. | |
| 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 |

* I_{rms} 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 | | Inches | |
|------|------------|-------|--------|-------|
| | Min. | Max. | 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 |