

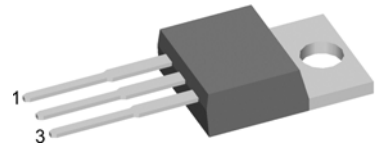
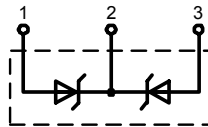
# Schottky

High Performance Schottky Diode  
 Low Loss and Soft Recovery  
 Common Cathode

$V_{RRM} = 100\text{ V}$   
 $I_{FAV} = 2 \times 15\text{ A}$   
 $V_F = 0.73\text{ V}$

Part number (Marking on product)

**DSA 30 C 100PB**



### 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

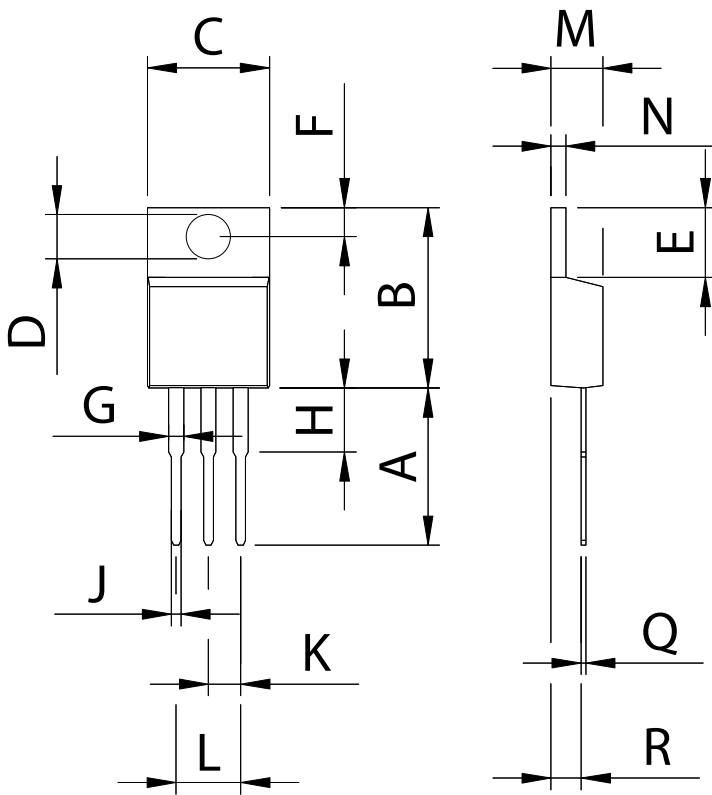
| Symbol     | Definition                          | Conditions                                      | Ratings                  |      |      | Unit |   |
|------------|-------------------------------------|---|--------------------------|------|------|------|---|
|            |                                     |   | min.                     | typ. | max. |      |   |
| $V_{RRM}$  | max. repetitive reverse voltage     | $T_{VJ} = 25\text{ °C}$                         |                          |      | 100  | V    |   |
| $I_R$      | reverse current                     | $V_R = 100\text{ V}$                            |                          |      | 0.3  | mA   |   |
|            |                                     | $V_R = 100\text{ V}$                            |                          |      | 2.5  | mA   |   |
| $V_F$      | forward voltage                     | $I_F = 15\text{ A}$                             |                          |      | 0.91 | V    |   |
|            |                                     | $I_F = 30\text{ A}$                             |                          |      | 1.08 | V    |   |
|            |                                     | $I_F = 15\text{ A}$                             | $T_{VJ} = 125\text{ °C}$ |      |      | 0.73 | V |
|            |                                     | $I_F = 30\text{ A}$                             | $T_{VJ} = 125\text{ °C}$ |      |      | 0.91 | V |
| $I_{FAV}$  | average forward current             | rectangular, $d = 0.5$                          |                          |      | 15   | A    |   |
| $V_{F0}$   | threshold voltage                   | } for power loss calculation only               |                          |      | 0.46 | V    |   |
| $r_F$      | slope resistance                    |   |                          |      | 12.4 | mΩ   |   |
| $R_{thJC}$ | thermal resistance junction to case |   |                          |      | 1.75 | K/W  |   |
| $T_{VJ}$   | virtual junction temperature        |   | -55                      |      | 175  | °C   |   |
| $P_{tot}$  | total power dissipation             | $T_C = 25\text{ °C}$                            |                          |      | 85   | W    |   |
| $I_{FSM}$  | max. forward surge current          | $t_p = 10\text{ ms (50 Hz), sine}$              |                          |      | 120  | A    |   |
| $C_j$      | junction capacitance                | $V_R = \text{ V}; f = 1\text{ MHz}$             |                          |      |      | pF   |   |
| $E_{AS}$   | non-repetitive avalanche energy     | $I_{AS} = 5\text{ A}; L = 100\text{ μH}$        |                          |      | 1.3  | mJ   |   |
| $I_{AR}$   | repetitive avalanche current        | $V_A = 1.5 \cdot V_R$ typ.; $f = 10\text{ kHz}$ |                          |      | 0.5  | 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   |
| <b>Weight</b> |                                     |            |         | 2    |      | g    |

\* I<sub>rms</sub> 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 |