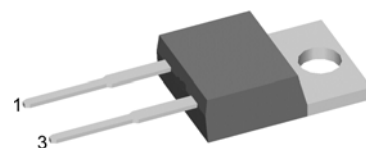
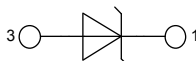


# Schottky Diode

High Performance Schottky Diode  
Low Loss and Soft Recovery  
Common Cathode

Part number

DSB 20 I 15 PA



Backside: cathode

## 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

## Applications:

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

## Package:

- Housing: TO-220
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

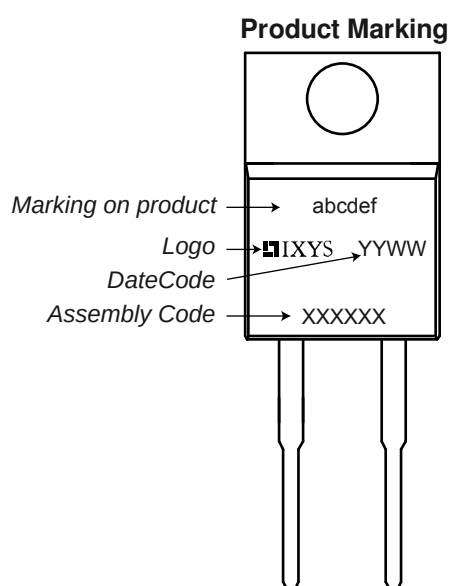
## Ratings

| Symbol     | Definition                          | Conditions                                |                              | min. | typ. | max. | Unit             |
|------------|-------------------------------------|-------------------------------------------|------------------------------|------|------|------|------------------|
| $V_{RRM}$  | max. repetitive reverse voltage     |                                           | $T_{VJ} = 25^\circ\text{C}$  |      |      | 15   | V                |
| $I_R$      | reverse current                     | $V_R = 15\text{V}$                        | $T_{VJ} = 25^\circ\text{C}$  |      |      | 10   | $\mu\text{A}$    |
|            |                                     | $V_R = 15\text{V}$                        | $T_{VJ} = 100^\circ\text{C}$ |      |      | 40   | mA               |
| $V_F$      | forward voltage                     | $I_F = 20\text{A}$                        | $T_{VJ} = 25^\circ\text{C}$  |      |      | 0.48 | V                |
|            |                                     | $I_F = 40\text{A}$                        |                              |      |      | 0.60 | V                |
|            |                                     | $I_F = 20\text{A}$                        | $T_{VJ} = 125^\circ\text{C}$ |      |      | 0.39 | V                |
|            |                                     | $I_F = 40\text{A}$                        |                              |      |      | 0.54 | V                |
| $I_{FAV}$  | average forward current             | rectangular, $d = 0.5$                    | $T_C = 130^\circ\text{C}$    |      |      | 20   | A                |
| $V_{F0}$   | threshold voltage                   | } for power loss calculation only         | $T_{VJ} = 150^\circ\text{C}$ |      |      | 0.23 | V                |
| $r_F$      | slope resistance                    |                                           |                              |      |      | 7.2  | $\text{m}\Omega$ |
| $R_{thJC}$ | thermal resistance junction to case |                                           |                              |      |      | 1.75 | K/W              |
| $T_{VJ}$   | virtual junction temperature        |                                           |                              | -55  |      | 150  | $^\circ\text{C}$ |
| $P_{tot}$  | total power dissipation             |                                           | $T_C = 25^\circ\text{C}$     |      |      | 70   | W                |
| $I_{FSM}$  | max. forward surge current          | $t = 10\text{ ms}$ (50 Hz), sine          | $T_{VJ} = 45^\circ\text{C}$  |      |      | 160  | A                |
| $C_J$      | junction capacitance                | $V_R = \text{tbd V}$ ; $f = 1\text{ MHz}$ | $T_{VJ} = 25^\circ\text{C}$  |      | tbd  |      | pF               |

| Symbol     | Definition                          | Conditions            | Ratings |      |      |      |
|------------|-------------------------------------|-----------------------|---------|------|------|------|
|            |                                     |                       | min.    | typ. | max. | Unit |
| $I_{RMS}$  | RMS current                         | per pin <sup>1)</sup> |         |      | 35   | A    |
| $R_{thCH}$ | thermal resistance case to heatsink |                       |         | 0.50 |      | K/W  |
| $T_{stg}$  | storage temperature                 |                       | -55     |      | 150  | °C   |
| Weight     |                                     |                       |         | 2    |      | g    |
| $M_D$      | mounting torque                     |                       | 0.4     |      | 0.8  | Nm   |
| $F_c$      | mounting force with clip            |                       | 20      |      | 60   | N    |

<sup>1)</sup>  $I_{RMS}$  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.

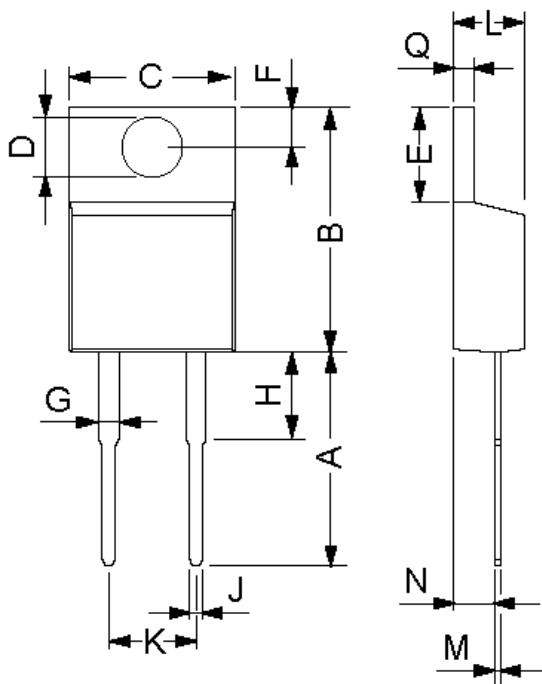


#### Part number

D = Diode  
 S = Schottky Diode  
 B = ultra low VF  
 20 = Current Rating [A]  
 I = Common Cathode  
 15 = Reverse Voltage [V]  
 PA = TO-220AC (2)

| Ordering | Part Name      | Marking on Product | Delivering Mode | Base Qty | Code Key |
|----------|----------------|--------------------|-----------------|----------|----------|
| Standard | DSB 20 I 15 PA | DSB20I15PA         | Tube            |          |          |

| Package |
|---------|
|         |
|         |

**Outlines TO-220**


| Dim. | Millimeter |       | Inches |       |
|------|------------|-------|--------|-------|
|      | Min.       | Max.  | Min.   | Max.  |
| A    | 12.7       | 14.73 | 0.5    | 0.58  |
| B    | 14.23      | 16.51 | 0.56   | 0.65  |
| C    | 9.66       | 10.66 | 0.38   | 0.42  |
| D    | 3.54       | 4.08  | 0.139  | 0.161 |
| E    | 5.85       | 6.85  | 2.3    | 0.42  |
| F    | 2.54       | 3.42  | 0.1    | 0.135 |
| G    | 1.15       | 1.77  | 0.045  | 0.07  |
| H    | -          | 6.35  | -      | 0.25  |
| J    | 0.64       | 0.89  | 0.025  | 0.035 |
| K    | 4.83       | 5.33  | 0.19   | 0.21  |
| L    | 3.56       | 4.82  | 0.14   | 0.19  |
| M    | 0.51       | 0.76  | 0.02   | 0.03  |
| N    | 2.04       | 2.49  | 0.08   | 0.115 |
| Q    | 0.64       | 1.39  | 0.025  | 0.055 |