

# Schottky Diode

High Performance Schottky Diode  
Low Loss and Soft Recovery

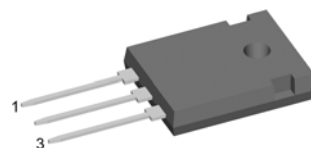
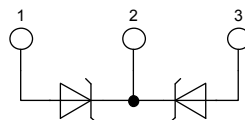
$$V_{RRM} = 150 \text{ V}$$

$$I_{FAV} = 2 \times 15 \text{ A}$$

$$V_F = 0.74 \text{ V}$$

Part number

DSA 30 C 150 HB



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-247
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

## Ratings

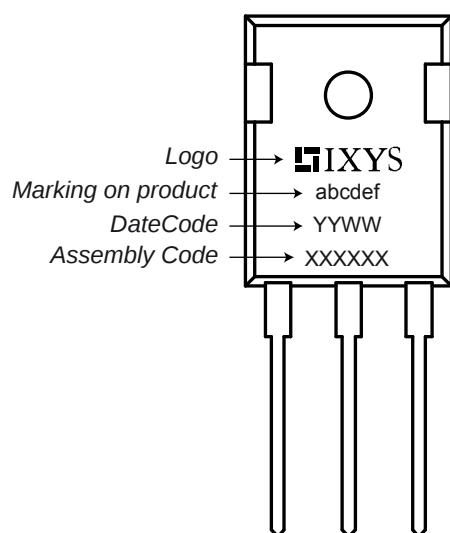
| Symbol     | Definition                          | Conditions                                 |                              | min. | typ. | max. | Unit             |
|------------|-------------------------------------|--------------------------------------------|------------------------------|------|------|------|------------------|
| $V_{RRM}$  | max. repetitive reverse voltage     |                                            | $T_{VJ} = 25^\circ\text{C}$  |      |      | 150  | V                |
| $I_R$      | reverse current                     | $V_R = 150 \text{ V}$                      | $T_{VJ} = 25^\circ\text{C}$  |      |      | 0.3  | $\mu\text{A}$    |
|            |                                     | $V_R = 150 \text{ V}$                      | $T_{VJ} = 125^\circ\text{C}$ |      |      | 2.5  | mA               |
| $V_F$      | forward voltage                     | $I_F = 15 \text{ A}$                       | $T_{VJ} = 25^\circ\text{C}$  |      |      | 0.88 | V                |
|            |                                     | $I_F = 30 \text{ A}$                       |                              |      |      | 1.00 | V                |
|            |                                     | $I_F = 15 \text{ A}$                       | $T_{VJ} = 125^\circ\text{C}$ |      |      | 0.74 | V                |
|            |                                     | $I_F = 30 \text{ A}$                       |                              |      |      | 0.87 | V                |
| $I_{FAV}$  | average forward current             | rectangular, $d = 0.5$                     | $T_C = 150^\circ\text{C}$    |      |      | 15   | A                |
| $V_{F0}$   | threshold voltage                   | } for power loss calculation only          | $T_{VJ} = 175^\circ\text{C}$ |      |      | 0.55 | V                |
| $r_F$      | slope resistance                    |                                            |                              |      |      | 8.2  | $\text{m}\Omega$ |
| $R_{thJC}$ | thermal resistance junction to case |                                            |                              |      |      | 1.75 | K/W              |
| $T_{VJ}$   | virtual junction temperature        |                                            |                              | -55  |      | 175  | $^\circ\text{C}$ |
| $P_{tot}$  | total power dissipation             |                                            | $T_C = 25^\circ\text{C}$     |      |      | 85   | W                |
| $I_{FSM}$  | max. forward surge current          | $t = 10 \text{ ms}$ (50 Hz), sine          | $T_{VJ} = 45^\circ\text{C}$  |      |      | 120  | 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> |         |      | 50   | A    |
| $R_{thCH}$ | thermal resistance case to heatsink |                       |         | 0.25 |      | K/W  |
| $T_{stg}$  | storage temperature                 |                       | -55     |      | 150  | °C   |
| Weight     |                                     |                       |         | 6    |      | g    |
| $M_D$      | mounting torque                     |                       | 0.8     |      | 1.2  | Nm   |
| $F_c$      | mounting force with clip            |                       | 20      |      | 120  | 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.

### Product Marking



### Part number

D = Diode  
 S = Schottky Diode  
 A = low VF  
 30 = Current Rating [A]  
 C = Common Cathode  
 150 = Reverse Voltage [V]  
 HB = TO-247AD (3)

| Ordering | Part Name       | Marking on Product | Delivering Mode | Base Qty | Code Key |
|----------|-----------------|--------------------|-----------------|----------|----------|
| Standard | DSA 30 C 150 HB | DSA30C150HB        | Tube            | 30       | 503353   |

| Similar Part | Package  | Voltage class |
|--------------|----------|---------------|
| DSA30C150PB  | TO-220   | 150           |
| DSSK30-01A   | TO-247   | 100           |
| DSA30C100PB  | TO-220   | 100           |
| DSA30C100PN  | TO-220FP | 100           |

**Outlines TO-247**
