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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: [info@chipsmall.com](mailto:info@chipsmall.com) Web: [www.chipsmall.com](http://www.chipsmall.com)

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



preliminary

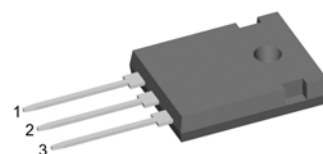
# Schottky Diode Gen <sup>2</sup>

$$\begin{aligned} V_{RRM} &= 60\text{ V} \\ I_{FAV} &= 2 \times 30\text{ A} \\ V_F &= 0.67\text{ V} \end{aligned}$$

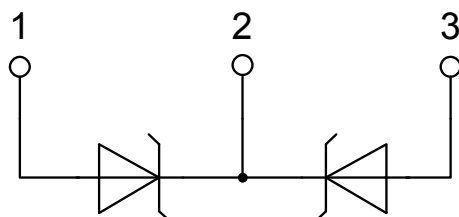
High Performance Schottky Diode  
Low Loss and Soft Recovery  
Common Cathode

Part number

**DSB60C60HB**



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: TO-247

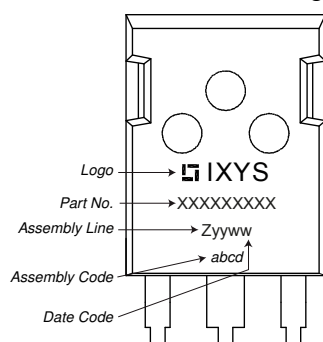
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

| Schottky   |                                              |                                                                    |                                | Ratings                        |      |      |      |
|------------|----------------------------------------------|--------------------------------------------------------------------|--------------------------------|--------------------------------|------|------|------|
| Symbol     | Definition                                   | Conditions                                                         |                                | min.                           | typ. | max. | Unit |
| $V_{RSM}$  | max. non-repetitive reverse blocking voltage | $T_{VJ} = 25^{\circ}\text{C}$                                      |                                |                                |      | 60   | V    |
| $V_{RRM}$  | max. repetitive reverse blocking voltage     | $T_{VJ} = 25^{\circ}\text{C}$                                      |                                |                                |      | 60   | V    |
| $I_R$      | reverse current, drain current               | $V_R = 60\text{ V}$                                                | $T_{VJ} = 25^{\circ}\text{C}$  |                                |      | 10   | mA   |
|            |                                              | $V_R = 60\text{ V}$                                                | $T_{VJ} = 100^{\circ}\text{C}$ |                                |      | 50   | mA   |
| $V_F$      | forward voltage drop                         | $I_F = 30\text{ A}$                                                | $T_{VJ} = 25^{\circ}\text{C}$  |                                |      | 0.77 | V    |
|            |                                              | $I_F = 60\text{ A}$                                                |                                |                                |      | 1.18 | V    |
|            |                                              | $I_F = 30\text{ A}$                                                | $T_{VJ} = 125^{\circ}\text{C}$ |                                |      | 0.67 | V    |
|            |                                              | $I_F = 60\text{ A}$                                                |                                |                                |      | 0.92 | V    |
| $I_{FAV}$  | average forward current                      | $T_C = 125^{\circ}\text{C}$<br>rectangular $d = 0.5$               | $T_{VJ} = 150^{\circ}\text{C}$ |                                |      | 30   | A    |
| $V_{F0}$   | threshold voltage                            | } for power loss calculation only                                  |                                | $T_{VJ} = 150^{\circ}\text{C}$ |      | 0.46 | V    |
| $r_F$      | slope resistance                             |                                                                    |                                |                                |      | 6.2  | mΩ   |
| $R_{thJC}$ | thermal resistance junction to case          |                                                                    |                                |                                |      | 0.95 | K/W  |
| $R_{thCH}$ | thermal resistance case to heatsink          |                                                                    |                                |                                | 0.25 |      | K/W  |
| $P_{tot}$  | total power dissipation                      | $T_C = 25^{\circ}\text{C}$                                         |                                |                                |      | 130  | W    |
| $I_{FSM}$  | max. forward surge current                   | $t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$ | $T_{VJ} = 45^{\circ}\text{C}$  |                                |      | 570  | A    |
| $C_J$      | junction capacitance                         | $V_R = 12\text{ V}$ $f = 1\text{ MHz}$                             | $T_{VJ} = 25^{\circ}\text{C}$  |                                | 449  |      | pF   |

preliminary

| Package TO-247 |                              |                            | Ratings |      |      |      |
|----------------|------------------------------|----------------------------|---------|------|------|------|
| Symbol         | Definition                   | Conditions                 | min.    | typ. | max. | Unit |
| $I_{RMS}$      | RMS current                  | per terminal <sup>1)</sup> |         |      | 50   | A    |
| $T_{VJ}$       | virtual junction temperature |                            | -55     |      | 150  | °C   |
| $T_{op}$       | operation temperature        |                            | -55     |      | 125  | °C   |
| $T_{stg}$      | 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    |

### Product Marking



### Part number

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

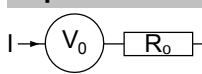
| Ordering | Part Number | Marking on Product | Delivery Mode | Quantity | Code No. |
|----------|-------------|--------------------|---------------|----------|----------|
| Standard | DSB60C60HB  | DSB60C60HB         | Tube          | 30       | 502935   |

| Similar Part | Package      | Voltage class |
|--------------|--------------|---------------|
| DSB60C60PB   | TO-220AB (3) | 60            |

### Equivalent Circuits for Simulation

\* on die level

$T_{VJ} = 150\text{ °C}$



Schottky

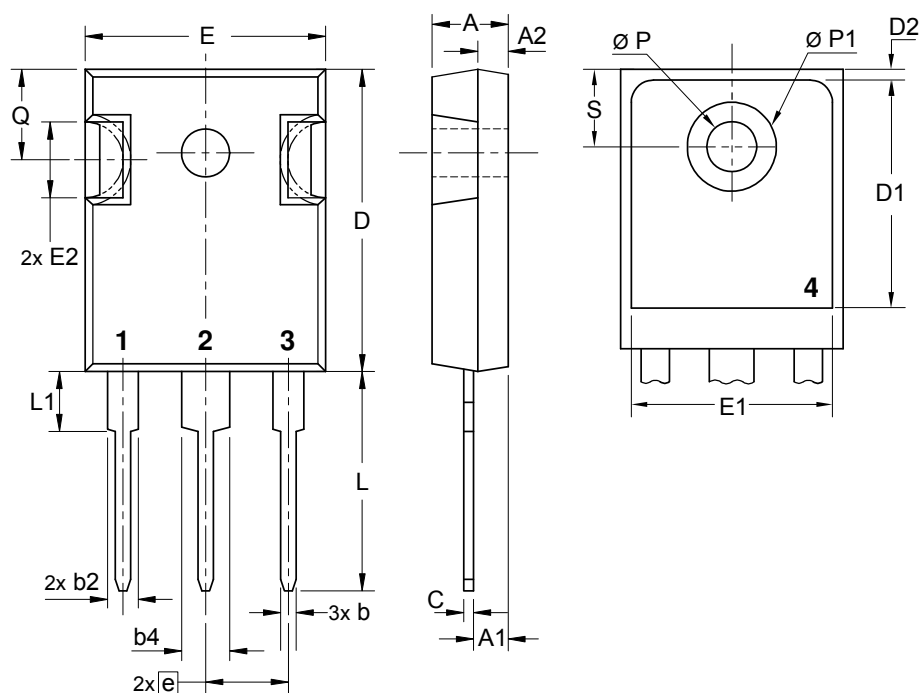
$V_{0\text{ max}}$  threshold voltage 0.46

$R_{0\text{ max}}$  slope resistance \* 3.7

V

mΩ

## Outlines TO-247



| Sym. | Inches |       | Millimeter |       |
|------|--------|-------|------------|-------|
|      | min.   | max.  | min.       | max.  |
| A    | 0.185  | 0.209 | 4.70       | 5.30  |
| A1   | 0.087  | 0.102 | 2.21       | 2.59  |
| A2   | 0.059  | 0.098 | 1.50       | 2.49  |
| D    | 0.819  | 0.845 | 20.79      | 21.45 |
| E    | 0.610  | 0.640 | 15.48      | 16.24 |
| E2   | 0.170  | 0.216 | 4.31       | 5.48  |
| e    | 0.215  | BSC   | 5.46       | BSC   |
| L    | 0.780  | 0.800 | 19.80      | 20.30 |
| L1   | -      | 0.177 | -          | 4.49  |
| Ø P  | 0.140  | 0.144 | 3.55       | 3.65  |
| Q    | 0.212  | 0.244 | 5.38       | 6.19  |
| S    | 0.242  | BSC   | 6.14       | BSC   |
| b    | 0.039  | 0.055 | 0.99       | 1.40  |
| b2   | 0.065  | 0.094 | 1.65       | 2.39  |
| b4   | 0.102  | 0.135 | 2.59       | 3.43  |
| c    | 0.015  | 0.035 | 0.38       | 0.89  |
| D1   | 0.515  | -     | 13.07      | -     |
| D2   | 0.020  | 0.053 | 0.51       | 1.35  |
| E1   | 0.530  | -     | 13.45      | -     |
| Ø P1 | -      | 0.29  | -          | 7.39  |

