# Excellent Integrated System Limited

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IXYS Corporation
DSB1I60SA

For any questions, you can email us directly:
sales@integrated-circuit.com

# IXYS DSB 1 I 60 SA

advanced

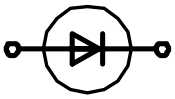
## Schottky

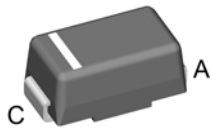
High Performance Schottky Diode
Low Loss and Soft Recovery
Single Diode

$V_{RRM}$ = 60 V
$I_{FAV}$ = 1 A
$V_F$ = 0.50 V

**Part number** *(Marking on product)*

DSB 1 I 60 SA *(S1HB)*






**Features / Advantages:**

- Very low Vf
- Extremely low switching losses
- Low Irm-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
- Decoupling diode

**Package:**

SMA (DO-214AC)

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

| Symbol | Definition | Conditions | | Ratings min. | typ. | max. | Unit |
|---|---|---|---|---|---|---|---|
| $V_{RRM}$ | *max. repetitive reverse voltage* | | $T_{VJ}$ = 25 °C | | | 60 | V |
| $I_R$ | *reverse current* | $V_R$ = 60 V | $T_{VJ}$ = 25 °C | | | 0.1 | mA |
| | | $V_R$ = 60 V | $T_{VJ}$ = 125 °C | | | 15 | mA |
| $V_F$ | *forward voltage* | $I_F$ = 1 A | $T_{VJ}$ = 25 °C | | | 0.58 | V |
| | | $I_F$ = 2 A | | | | 0.72 | V |
| | | $I_F$ = 1 A | $T_{VJ}$ = 125 °C | | | 0.50 | V |
| | | $I_F$ = 2 A | | | | 0.64 | V |
| $I_{FAV}$ | *average forward current* | rectangular, d = 0.5 | $T_L$ = 125 °C | | | 1 | A |
| $V_{F0}$ | *threshold voltage* } *for power loss calculation only* | | $T_L$ = 150 °C | | | | V |
| $r_F$ | *slope resistance* } | | | | | | mΩ |
| $R_{thJL}$ | *thermal resistance junction to lead** | | | | | 40 | K/W |
| $T_{VJ}$ | *virtual junction temperature* | | | -55 | | 150 | °C |
| $P_{tot}$ | *total power dissipation* | | $T_L$ = 25 °C | | | 3 | W |
| $I_{FSM}$ | *max. forward surge current* | $t_p$ = 10 ms (50 Hz), sine | $T_{VJ}$ = 45 °C | | | 45 | A |
| $C_J$ | *junction capacitance* | $V_R$ = 5 V; f = 1 MHz | $T_{VJ}$ = 25 °C | | | 65 | pF |
| $E_{AS}$ | *non-repetitive avalanche energy* | $I_{AS}$ = A; L = 100 µH | $T_{VJ}$ = 25 °C | | | tbd | mJ |
| $I_{AR}$ | *repetitive avalanche current* | $V_A$ = 1.5·$V_R$ typ.; f = 10 kHz | | | | tbd | A |

** mounted on 1 inch square PCB*

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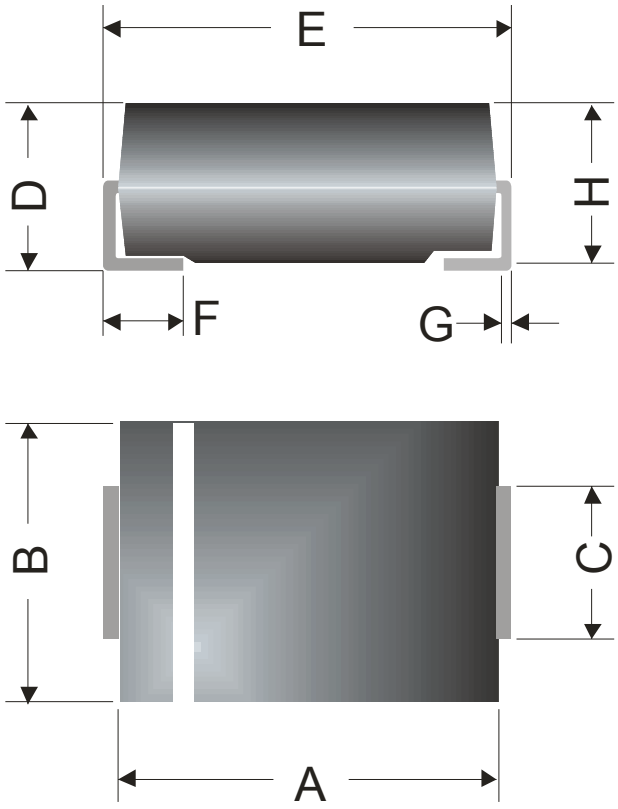
| Symbol | Definition | Conditions | Ratings min. | typ. | max. | Unit |
|---|---|---|---|---|---|---|
| $I_{RMS}$ | *RMS current* | per pin* | | | | A |
| $R_{thJA}$ | *thermal resistance junction to ambient* | | | 80 | | K/W |
| $M_D$ | *mounting torque* | | | | | Nm |
| $F_C$ | *mounting force with clip* | | | | | N |
| $T_{stg}$ | *storage temperature* | | -55 | | 150 | °C |
| **Weight** | | | | 0.07 | | g |

* Irms 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 SMA (DO-214AC)**




| Dim. | Millimeters | | Inches | |
|---|---|---|---|---|
| | min | max | min | max |
| A | 3.99 | 4.50 | 0.157 | 0.177 |
| B | 2.54 | 2.79 | 0.100 | 0.110 |
| C | 1.25 | 1.65 | 0.049 | 0.065 |
| D | 1.98 | 2.29 | 0.078 | 0.090 |
| E | 4.93 | 5.28 | 0.194 | 0.208 |
| F | 0.76 | 1.52 | 0.030 | 0.060 |
| G | 0.15 | 0.31 | 0.006 | 0.012 |
| H | 2.00 | 2.20 | 0.079 | 0.087 |

IXYS reserves the right to change limits, conditions and dimensions. Data according to IEC 60747 and per diode unless otherwise specified

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