

# Power Schottky Rectifier

## Non isolated

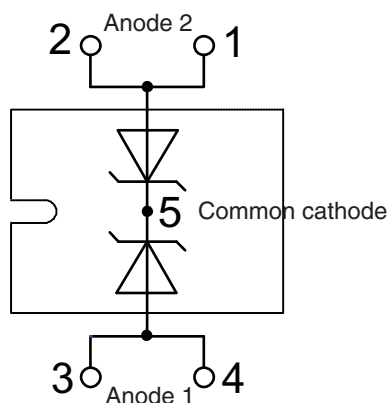
$$I_{FAVM} = 2x160 \text{ A}$$

$$V_{RRM} = 100 \text{ V}$$

$$V_F = 0.81 \text{ V}$$

Part number

**DSS 2x160-01A**



### Features / Advantages:

- Very low  $V_F$
- Extremely low switching losses
- Low  $I_{RM}$ -values
- 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: SOT-227UI (minibloc)

- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Base plate: Copper (non isolated)
- Advanced power cycling

### Disclaimer Notice

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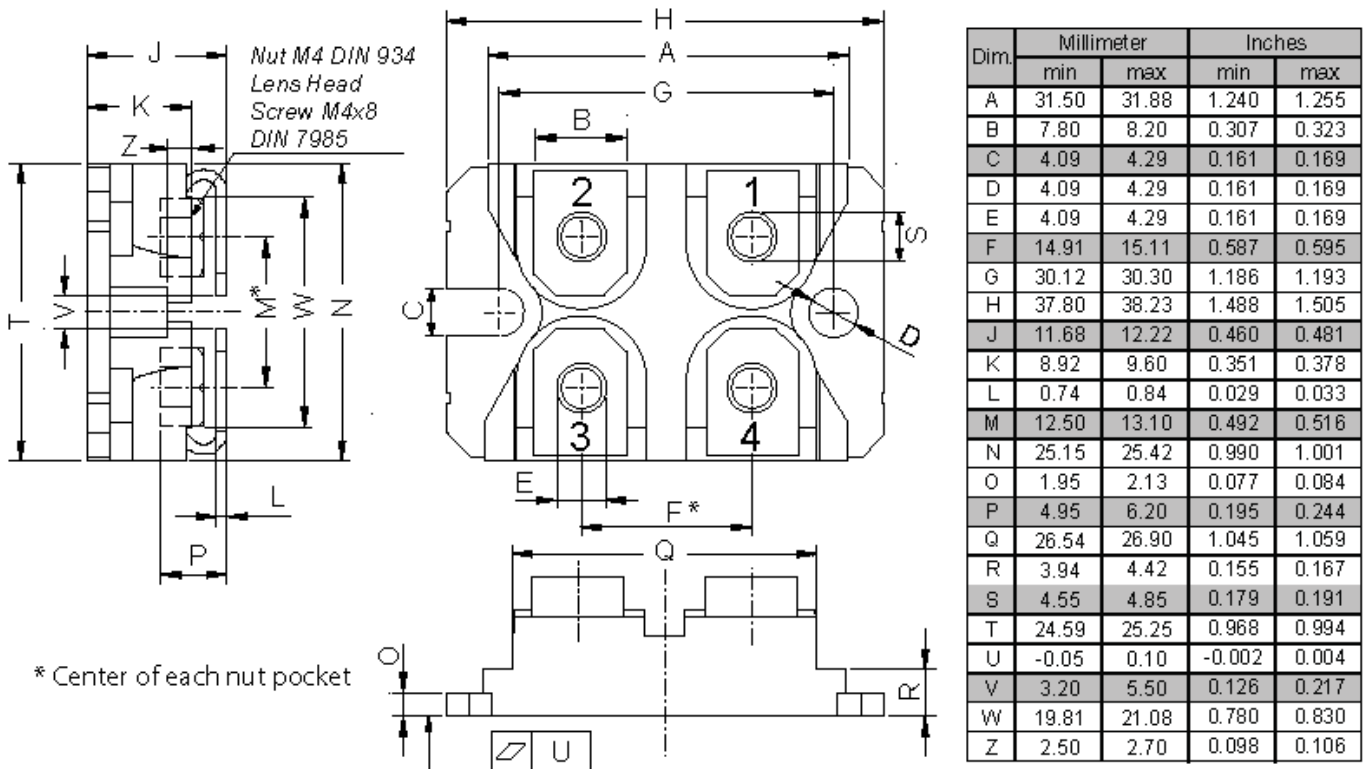
| Symbol         | Conditions                                                                                           | Maximum Ratings |                  |
|----------------|------------------------------------------------------------------------------------------------------|-----------------|------------------|
| $I_{FRMS}$     |                                                                                                      | 200             | A                |
| $I_{FAVM}$     | $T_C = 95^\circ\text{C}$ ; rectangular, $d = 0.5$                                                    | 160             | A                |
| $I_{FAVM}$     | $T_C = 95^\circ\text{C}$ ; rectangular, $d = 0.5$ ; per device                                       | 320             | A                |
| $I_{FSM}$      | $T_{VJ} = 45^\circ\text{C}$ ; $t = 10\text{ ms}$ (50 Hz), sine                                       | 1400            | A                |
| $E_{AS}$       | $I_{AS} = 15\text{ A}$ ; $L = 100\text{ }\mu\text{H}$ ; $T_{VJ} = 25^\circ\text{C}$ ; non repetitive | 11.3            | mJ               |
| $I_{AR}$       | $V_A = 1.5 \cdot V_{RRM}$ typ.; $f = 10\text{ kHz}$ ; repetitive                                     | 1.5             | A                |
| $(dv/dt)_{cr}$ |                                                                                                      | 5000            | V/ $\mu\text{s}$ |
| $P_{tot}$      | $T_C = 25^\circ\text{C}$                                                                             | 410             | W                |

| Symbol     | Conditions                                        | Characteristic Values |      |     |
|------------|---------------------------------------------------|-----------------------|------|-----|
|            |                                                   | typ.                  | max. |     |
| $I_R$ ①    | $V_R = V_{RRM}$ $T_{VJ} = 25^\circ\text{C}$       |                       | 4    | mA  |
|            | $V_R = V_{RRM}$ $T_{VJ} = 125^\circ\text{C}$      |                       | 40   | mA  |
| $V_F$      | $I_F = 160\text{ A}$ $T_{VJ} = 125^\circ\text{C}$ |                       | 0.81 | V   |
|            | $T_{VJ} = 25^\circ\text{C}$                       |                       | 0.98 | V   |
|            | $I_F = 320\text{ A}$ $T_{VJ} = 125^\circ\text{C}$ |                       | 1.08 | V   |
| $R_{thJC}$ |                                                   |                       | 0.30 | K/W |
| $R_{thCH}$ |                                                   | 0.15                  |      | K/W |

① Pulse Width = 5 ms, Duty Cycle < 2.0 %

Data according to IEC 60747 and per diode unless otherwise specified

### Outlines SOT-227B (minibloc)

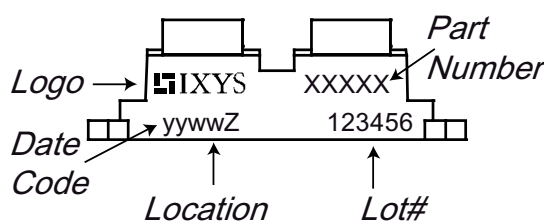


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| Package SOT-227UI (minibloc) |                                                              |                      |      | Ratings |      |      |    |
|------------------------------|--------------------------------------------------------------|----------------------|------|---------|------|------|----|
| Symbol                       | Definitions                                                  | Conditions           |      | min.    | typ. | max. |    |
| $I_{RMS}$                    | RMS current                                                  | per terminal         |      |         |      | 150  | A  |
| $T_{VJ}$                     | virtual junction temperature                                 |                      |      | -40     |      | 150  | °C |
| $T_{op}$                     | operation temperature                                        |                      |      | -40     |      | 125  | °C |
| $T_{stg}$                    | storage temperature                                          |                      |      | -40     |      | 150  | °C |
| Weight                       |                                                              |                      |      |         | 30   |      | g  |
| $M_D$                        | mounting torque                                              |                      |      | 1.1     |      | 1.5  | Nm |
| $M_T$                        | terminal torque                                              |                      |      | 1.1     |      | 1.5  | Nm |
| $d_{Spp/App}$                | creepage distance on surface   striking distance through air | terminal to terminal | 10.5 | 0.8     |      |      | Nm |
| $d_{Spb/Apb}$                |                                                              | terminal to backside | 8.6  | 20      |      |      | N  |

### Product Marking



| Ordering | Part Number  | Marking on Product | Delivering Mode | Base Qty | Ordering Code |
|----------|--------------|--------------------|-----------------|----------|---------------|
| Standard | DSS2x160-01A | DSS2x160-01A       | Tube            | 10       | DSS2x160-01A  |

**Curves**

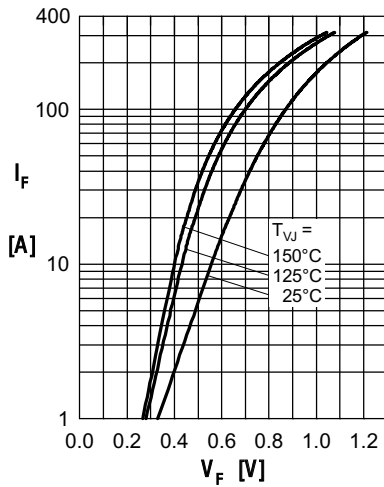


Fig. 1 Max. forward voltage drop characteristics

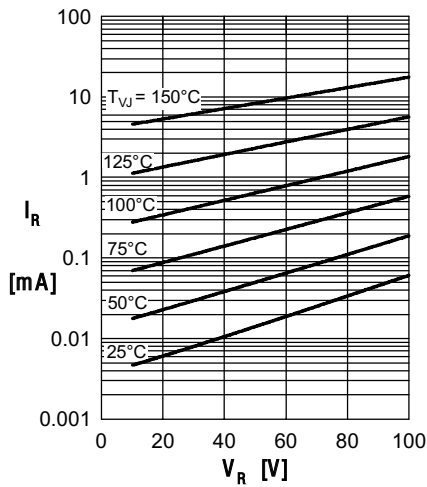


Fig. 2 Typ. reverse current  $I_R$  vs. reverse voltage  $V_R$

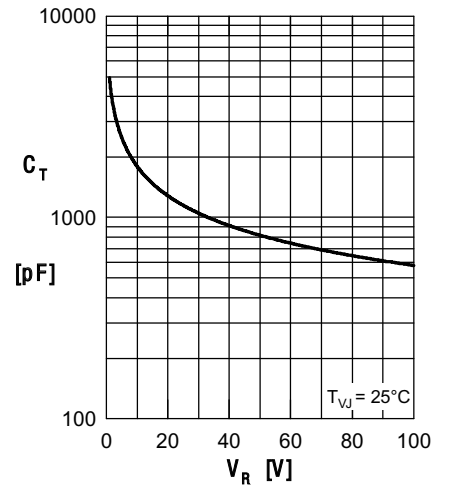


Fig. 3 Typ. junction capacitance  $C_T$  vs. reverse voltage  $V_R$

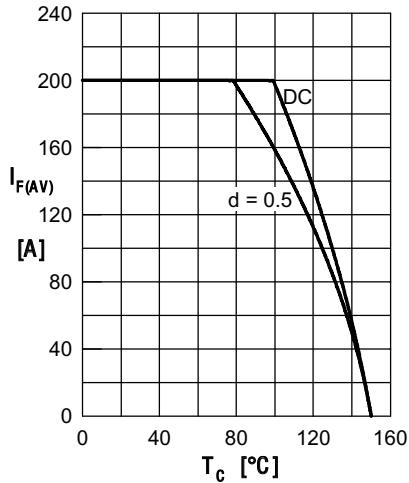


Fig. 4 Average forward current  $I_{F(AV)}$  vs. case temp.  $T_C$

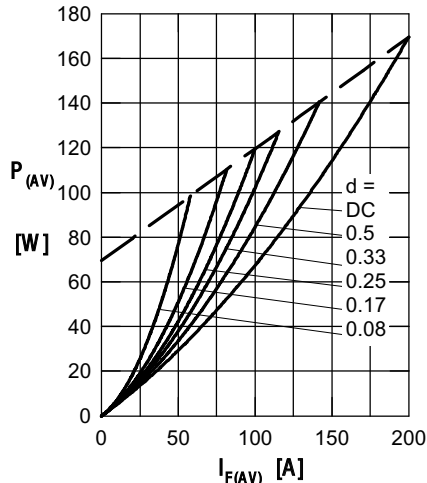


Fig. 5 Forward power loss characteristics

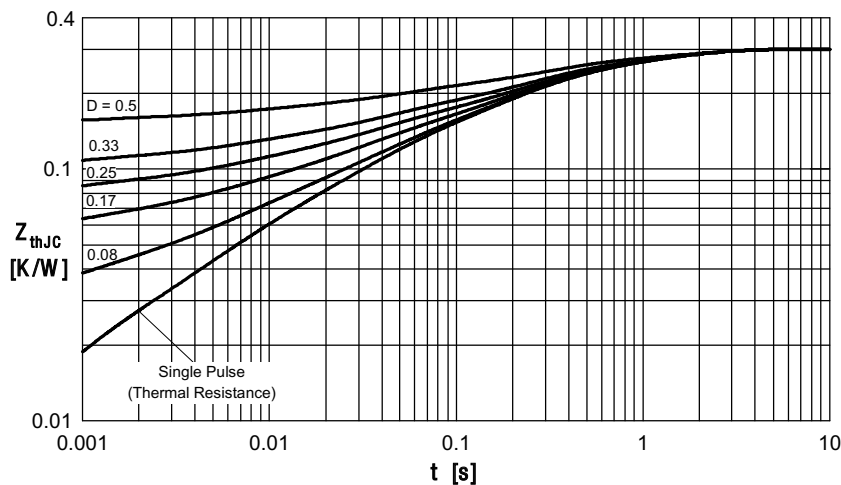


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode