

# Power Schottky Rectifier

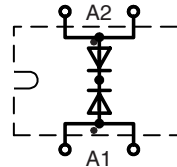
## Non isolated

$$I_{FAVM} = 2 \times 160 \text{ A}$$

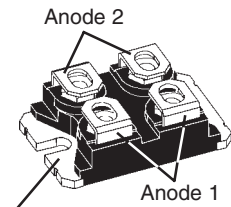
$$V_{RRM} = 100 \text{ V}$$

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

| $V_{RSM}$ | $V_{RRM}$ | Type          |
|-----------|-----------|---------------|
| V         | V         |               |
| 100       | 100       | DSS 2x160-01A |



miniBLOC, SOT-227 B



Common cathode

| 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                |
| $I_{FSM}$      | $T_{VJ} = 45^\circ\text{C}$ ; $t_p = 10 \text{ ms}$ (50 Hz), sine                              | 1400            | A                |
| $E_{AS}$       | $I_{AS} = 15 \text{ A}$ ; $L = 100 \mu\text{H}$ ; $T_{VJ} = 25^\circ\text{C}$ ; 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/ $\mu\text{s}$ |
| $T_{VJ}$       |                                                                                                | -40...+150      | $^\circ\text{C}$ |
| $T_{VJM}$      |                                                                                                | 150             | $^\circ\text{C}$ |
| $T_{stg}$      |                                                                                                | -40...+150      | $^\circ\text{C}$ |
| $P_{tot}$      | $T_C = 25^\circ\text{C}$                                                                       | 410             | W                |
| $M_d$          | mounting torque (M4)                                                                           | 1.1-1.5/9-13    | Nm/lb.in.        |
|                | terminal connection torque (M4)                                                                | 1.1-1.5/9-13    | Nm/lb.in.        |
| Weight         | typical                                                                                        | 30              | g                |

### Features

- International standard package miniBLOC
- Epoxy meets UL 94V-0
- Very low  $V_F$
- Extremely low switching losses
- Low  $I_{RM}$ -values

### Applications

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

### Advantages

- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see Outlines.pdf

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

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %  
Data according to IEC 60747 and per diode unless otherwise specified.

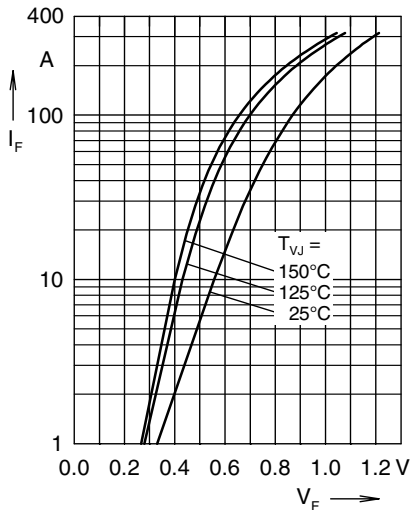


Fig. 1 Max. forward voltage drop characteristics

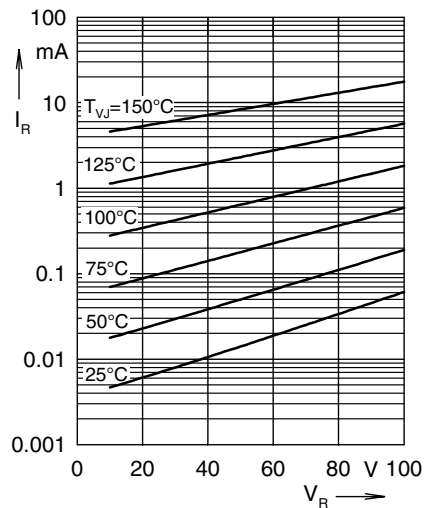


Fig. 2 Typ. reverse current  $I_R$  vs. reverse voltage  $V_R$

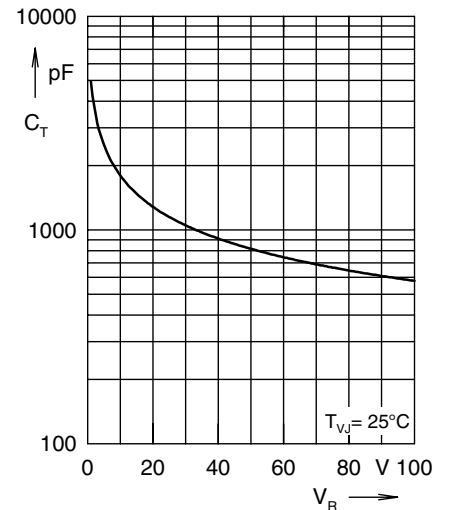


Fig. 3 Typ. junction capacitance  $C_T$  versus reverse voltage  $V_R$

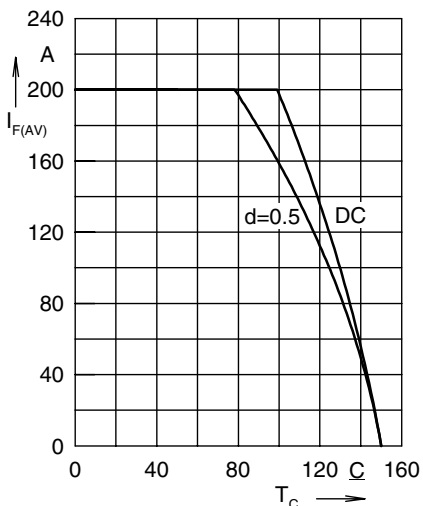


Fig. 4 Avg. forward current  $I_{F(AV)}$  vs. case temperature  $T_C$

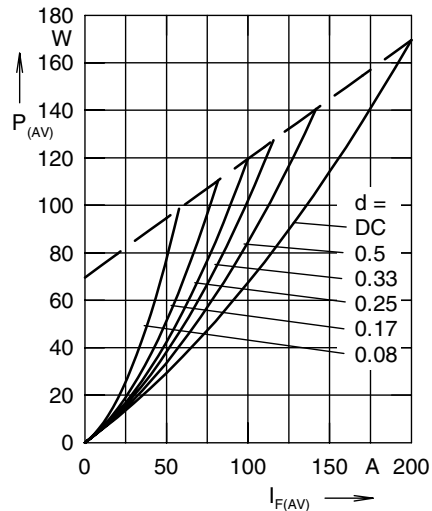


Fig. 5 Forward power loss characteristics

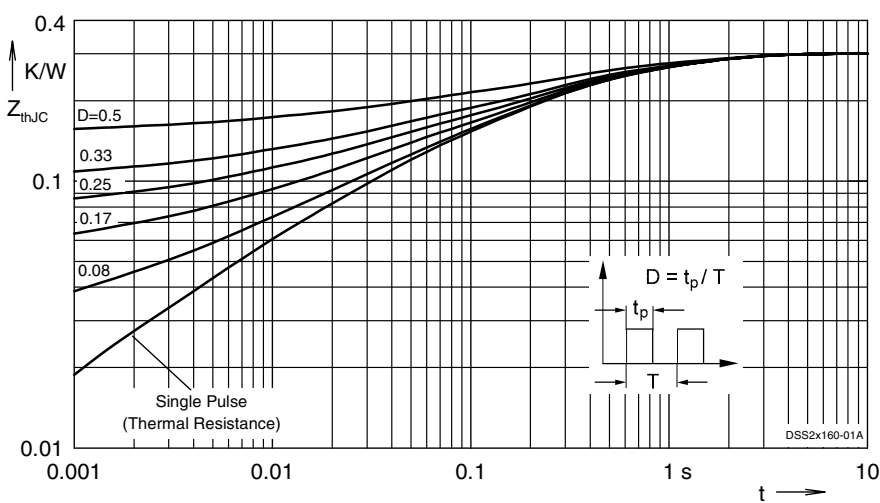


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode