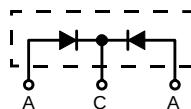


# Power Schottky Rectifier with common cathode

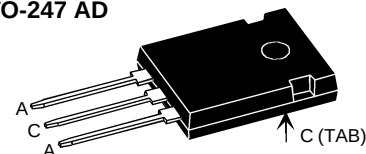
$$\begin{aligned} I_{FAV} &= 2 \times 15 \text{ A} \\ V_{RRM} &= 180 \text{ V} \\ V_F &= 0.72 \text{ V} \end{aligned}$$

## Preliminary Data

| $V_{RSM}$ | $V_{RRM}$ | Type         |
|-----------|-----------|--------------|
| V         | V         |              |
| 180       | 180       | DSSK 30-018A |



TO-247 AD



A = Anode, C = Cathode, TAB = Cathode

| Symbol         | Conditions                                                                                     | Maximum Ratings |                  |
|----------------|------------------------------------------------------------------------------------------------|-----------------|------------------|
| $I_{FRMS}$     |                                                                                                | 50              | A                |
| $I_{FAV}$      | $T_C = 150^\circ\text{C}$ ; rectangular, $d = 0.5$                                             | 15              | A                |
| $I_{FAV}$      | $T_C = 150^\circ\text{C}$ ; rectangular, $d = 0.5$ ; per device                                | 30              | A                |
| $I_{FSM}$      | $T_{VJ} = 45^\circ\text{C}$ ; $t_p = 10 \text{ ms}$ (50 Hz), sine                              | 120             | A                |
| $E_{AS}$       | $I_{AS} = \text{tbd A}$ ; $L = 180 \mu\text{H}$ ; $T_{VJ} = 25^\circ\text{C}$ ; non repetitive | tbd             | mJ               |
| $I_{AR}$       | $V_A = 1.5 \cdot V_{RRM}$ typ.; $f = 10 \text{ kHz}$ ; repetitive                              | tbd             | A                |
| $(dv/dt)_{cr}$ |                                                                                                | tbd             | V/ $\mu\text{s}$ |
| $T_{VJ}$       |                                                                                                | -55...+175      | $^\circ\text{C}$ |
| $T_{VJM}$      |                                                                                                | 175             | $^\circ\text{C}$ |
| $T_{stg}$      |                                                                                                | -55...+150      | $^\circ\text{C}$ |
| $P_{tot}$      | $T_C = 25^\circ\text{C}$                                                                       | 90              | W                |
| $M_d$          | mounting torque                                                                                | 0.8...1.2       | Nm               |
| Weight         | typical                                                                                        | 6               | g                |

## Features

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

## 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<sup>1 2 3</sup>
- Low noise switching
- Low losses

Dimensions see outlines.pdf

| Symbol                   | Conditions                                                                                                                                                       | Characteristic Values |                            |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|
|                          |                                                                                                                                                                  | typ.                  | max.                       |
| $I_R$ ①                  | $T_{VJ} = 25^\circ\text{C}$ $V_R = V_{RRM}$<br>$T_{VJ} = 100^\circ\text{C}$ $V_R = V_{RRM}$                                                                      |                       | 0.3 mA<br>2.5 mA           |
| $V_F$                    | $I_F = 15 \text{ A}$ ; $T_{VJ} = 125^\circ\text{C}$<br>$I_F = 15 \text{ A}$ ; $T_{VJ} = 25^\circ\text{C}$<br>$I_F = 30 \text{ A}$ ; $T_{VJ} = 125^\circ\text{C}$ |                       | 0.72 V<br>0.86 V<br>0.87 V |
| $R_{thJC}$<br>$R_{thCH}$ | 0.25                                                                                                                                                             |                       | 1.7 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

IXYS reserves the right to change limits, Conditions and dimensions.

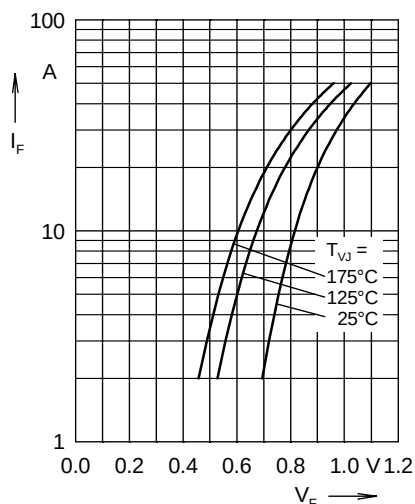


Fig. 1 Maximum forward voltage drop characteristics

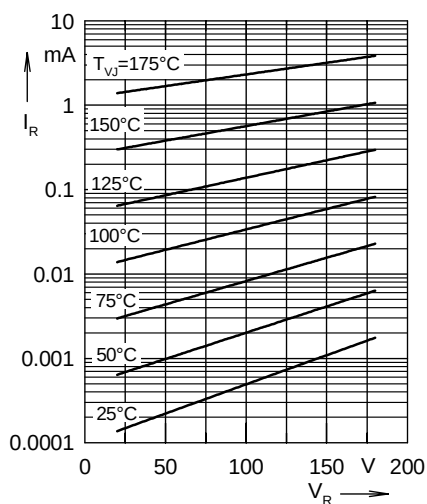


Fig. 2 Typ. value of reverse current  $I_R$  versus reverse voltage  $V_R$

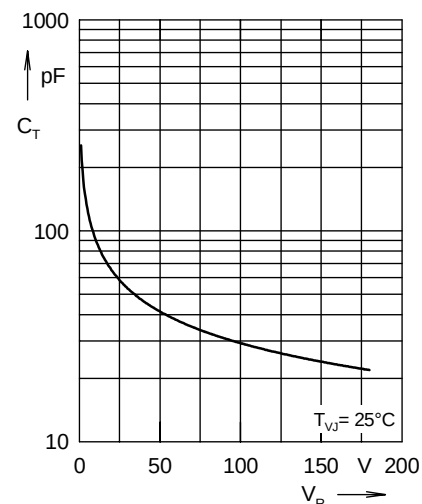


Fig. 3 Typ. junction capacitance  $C_T$  versus reverse voltage  $V_R$

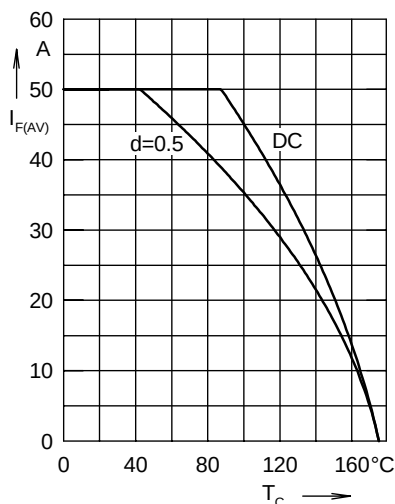


Fig. 4 Average forward current  $I_{F(AV)}$  versus case temperature  $T_C$

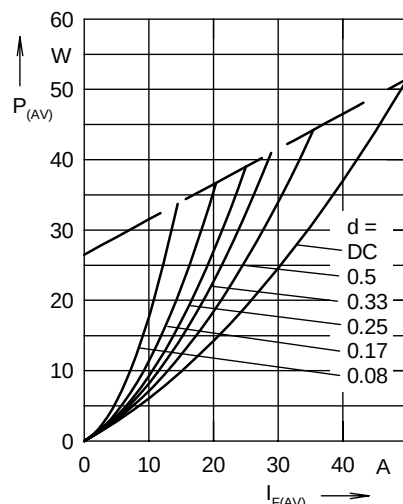


Fig. 5 Forward power loss characteristics

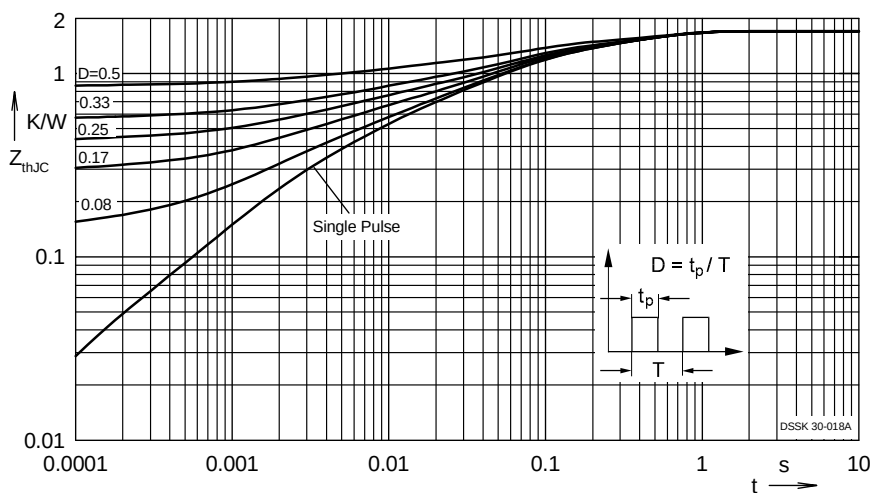


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode