

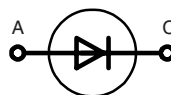
# Power Schottky Rectifier

$$I_{FAV} = 6 \text{ A}$$

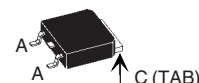
$$V_{RRM} = 45 \text{ V}$$

$$V_F = 0.5 \text{ V}$$

| $V_{RSM}$<br>V | $V_{RRM}$<br>V | Type         | marking<br>on product |
|----------------|----------------|--------------|-----------------------|
| 45             | 45             | DSS 6-0045AS | 6Y045AS               |



TO-252 AA



A = Anode, C = Cathode , TAB = Cathode

| Symbol         | Conditions                                                                                     | Maximum Ratings |                  |
|----------------|------------------------------------------------------------------------------------------------|-----------------|------------------|
| $I_{FRMS}$     | $T_C = 165^\circ\text{C}$ ; rectangular, $d = 0.5$                                             | 20              | A                |
| $I_{FAV}$      |                                                                                                | 6               | A                |
| $I_{FSM}$      | $T_{VJ} = 45^\circ\text{C}$ ; $t_p = 10 \text{ ms}$ (50 Hz), sine                              | 80              | A                |
| $E_{AS}$       | $I_{AS} = 13 \text{ A}$ ; $L = 180 \mu\text{H}$ ; $T_{VJ} = 25^\circ\text{C}$ ; non repetitive | 24              | mJ               |
| $I_{AR}$       | $V_A = 1.5 \cdot V_{RRM}$ typ.; $f = 10 \text{ kHz}$ ; repetitive                              | 1.3             | A                |
| $(dv/dt)_{cr}$ |                                                                                                | 1000            | V/ $\mu\text{s}$ |
| $T_{VJ}$       |                                                                                                | -55...+175      | $^\circ\text{C}$ |
| $T_{VJM}$      |                                                                                                | 175             | $^\circ\text{C}$ |
| $T_{stg}$      |                                                                                                | -55...+150      | $^\circ\text{C}$ |
| $P_{tot}$      | $T_C = 25^\circ\text{C}$                                                                       | 50              | W                |
| Weight         | typical                                                                                        | 0.3             | 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
- Low noise switching
- Low losses

Dimensions see Outlines.pdf

| Symbol     | Conditions                                          | Characteristic Values |      |
|------------|-----------------------------------------------------|-----------------------|------|
|            |                                                     | typ.                  | max. |
| $I_R$ ①    | $T_{VJ} = 25^\circ\text{C}$ $V_R = V_{RRM}$         | 0.3                   | mA   |
|            | $T_{VJ} = 125^\circ\text{C}$ $V_R = V_{RRM}$        | 2.5                   | mA   |
| $V_F$      | $I_F = 6 \text{ A}$ ; $T_{VJ} = 125^\circ\text{C}$  | 0.50                  | V    |
|            | $I_F = 6 \text{ A}$ ; $T_{VJ} = 25^\circ\text{C}$   | 0.63                  | V    |
|            | $I_F = 12 \text{ A}$ ; $T_{VJ} = 125^\circ\text{C}$ | 0.59                  | V    |
| $R_{thJC}$ |                                                     | 3.0                   | 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.

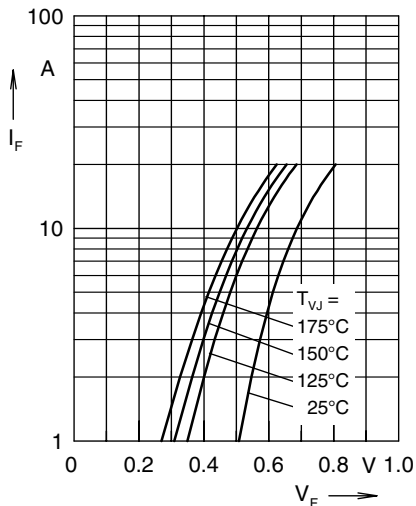


Fig. 1 Maximum forward voltage drop characteristics

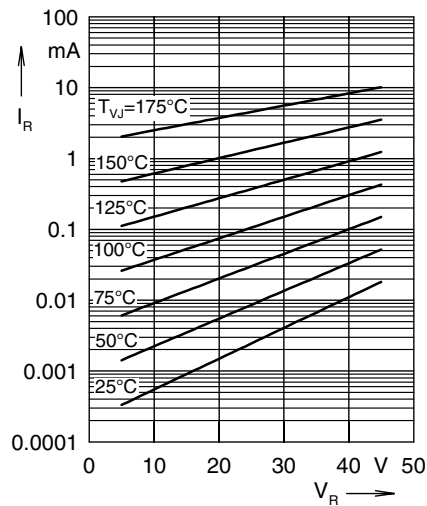


Fig. 2 Typ. value of reverse current  $I_R$  versus reverse voltage  $V_R$

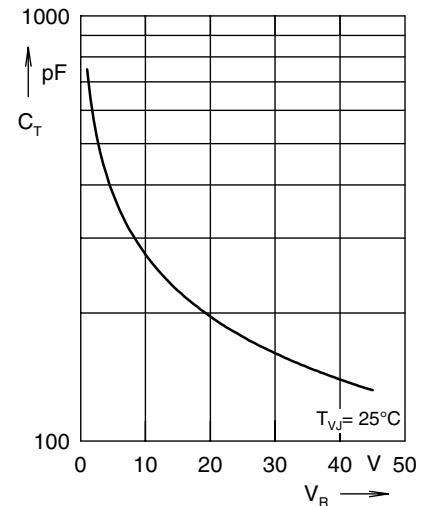


Fig. 3 Typ. junction capacitance  $C_T$  versus reverse voltage  $V_R$

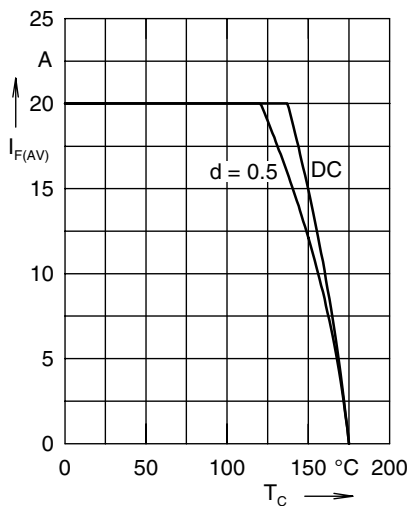


Fig. 4 Average forward current  $I_{F(AV)}$  versus case temperature  $T_C$

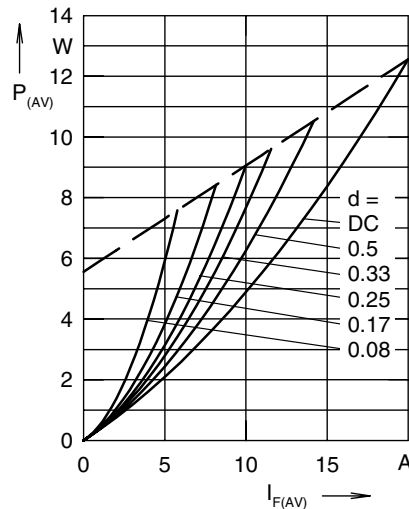


Fig. 5 Forward power loss characteristics

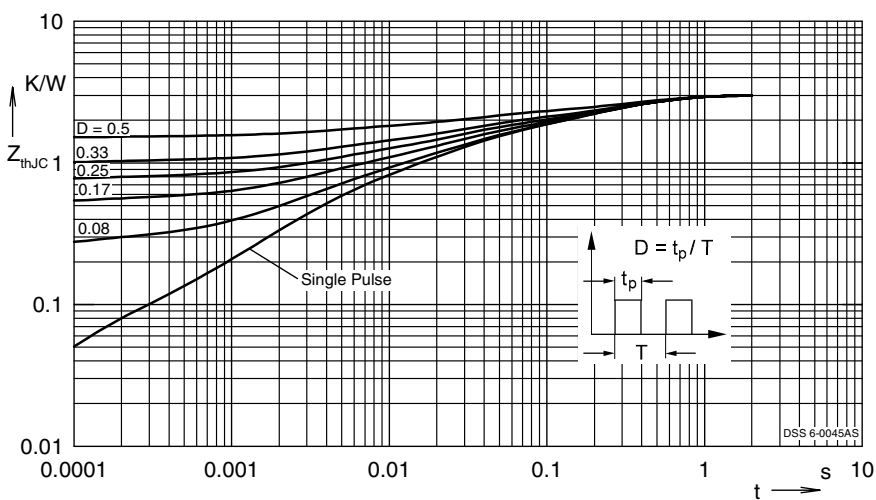


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode