Power Schottky Rectifier

\[ I_{FAV} = 6 \, A \]
\[ V_{RRM} = 45 \, V \]
\[ V_F = 0.5 \, V \]

\( V_{RSM} \) | \( V_{RRM} \) | Type | marking on product
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45 | 45 | DSS 6-0045AS | 6Y045AS

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 | Maximum Ratings
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\( I_{RMS} \) | \( V_T = 165°C \); rectangular, \( d = 0.5 \) | 20 \( A \)
\( I_{FAV} \) | \( T_C = 165°C \); rectangular, \( d = 0.5 \) | 6 \( A \)
\( I_{FSM} \) | \( T_{ij} = 45°C \); \( t_p = 10 \, ms \) (50 Hz), sine | 80 \( A \)
\( E_{AS} \) | \( I_{AS} = 13 \, A \); \( L = 180 \, \mu H \); \( T_{ij} = 25°C \); non repetitive | 24 \( mJ \)
\( I_{AR} \) | \( V_A = 1.5 \, V_{RM} \) typ.; \( f = 10 \, kHz \); repetitive | 1.3 \( A \)
\( (dv/dt)_{cr} \) | | 1000 \( V/\mu s \)
\( T_{ij} \) | | -55...+175 \( °C \)
\( T_{VSM} \) | | 175 \( °C \)
\( T_{slip} \) | | -55...+150 \( °C \)
\( P_{tot} \) | \( T_C = 25°C \) | 50 \( W \)

Weight | typical | 0.3 \( g \)

Symbol | Conditions | Characteristic Values
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\( I_R \) | \( T_{ij} = 25°C \); \( V_H = V_{RRM} \) | typ. max.
\( V_F \) | \( I_p = 6 \, A \); \( T_{ij} = 125°C \) | 0.50 \( V \)
\( I_p = 6 \, A \); \( T_{ij} = 25°C \) | 0.63 \( V \)
\( I_p = 12 \, A \); \( T_{ij} = 125°C \) | 0.59 \( V \)

Dimensions see Outlines.pdf

Pulse test: \( \circ \) 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