

# Power Schottky Rectifier

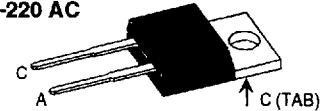
$$I_{FAV} = 10 \text{ A}$$

$$V_{RRM} = 35 - 45 \text{ V}$$

$$V_F = 0.58 \text{ V}$$

## Preliminary Data

$V_{RSM}$ V	$V_{RRM}$ V	Type
35	35	DSS 10-0035A
45	45	DSS 10-0045A


**TO-220 AC**


A = Anode, C = Cathode, TAB = Cathode

Symbol	Test Conditions	Maximum Ratings	
$I_{FRMS}$	$T_C = 160^\circ\text{C}$ ; rectangular, $d = 0.5$	35	A
$I_{FAV}$		10	A
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C}$ ; $t_p = 10 \text{ ms}$ (50 Hz), sine	140	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	$^\circ\text{C}$
$P_{tot}$	$T_C = 25^\circ\text{C}$	90	W
$M_d$	mounting torque	0.45...0.55 4...5	Nm lb.in.
Weight	typical	2	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

Symbol	Test Conditions	Characteristic Values	
		typ.	max.
$I_R$ ①	$T_{VJ} = 25^\circ\text{C}$ $V_R = V_{RRM}$ $T_{VJ} = 125^\circ\text{C}$ $V_R = V_{RRM}$	0.3	mA
		2.5	mA
$V_F$	$I_F = 10 \text{ A}$ ; $T_{VJ} = 125^\circ\text{C}$	0.58	V
	$I_F = 10 \text{ A}$ ; $T_{VJ} = 25^\circ\text{C}$	0.68	V
	$I_F = 20 \text{ A}$ ; $T_{VJ} = 125^\circ\text{C}$	0.70	V
$R_{thJC}$ $R_{thCH}$		1.7	K/W
		0.5	K/W

Dimensions see Outlines.pdf

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, test conditions and dimensions.

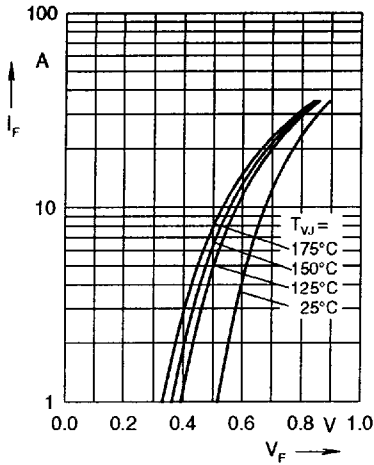


Fig. 1 Maximum forward voltage drop characteristics

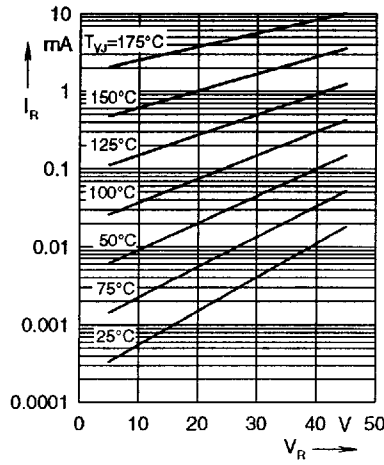


Fig. 2 Typ. value of reverse current  $I_R$  versus reverse voltage  $V_R$

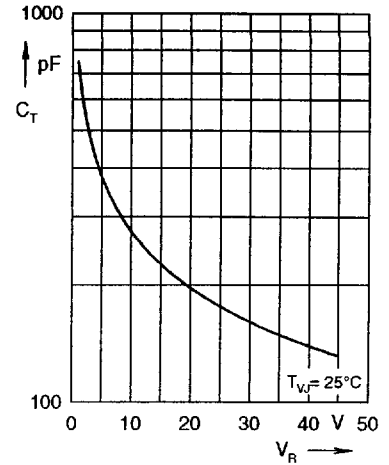


Fig. 3 Typ. junction capacitance  $C_T$  versus reverse voltage  $V_R$

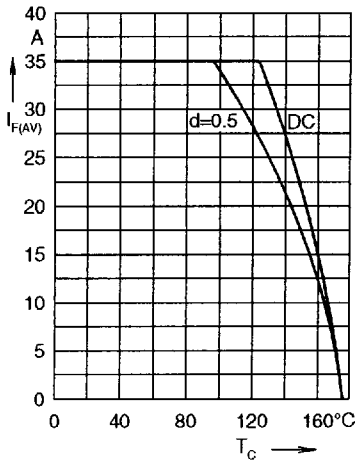


Fig. 4 Average forward current  $I_{F(AV)}$  versus case temperature  $T_C$

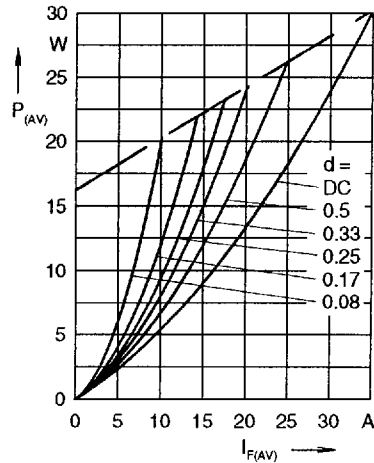


Fig. 5 Forward power loss characteristics

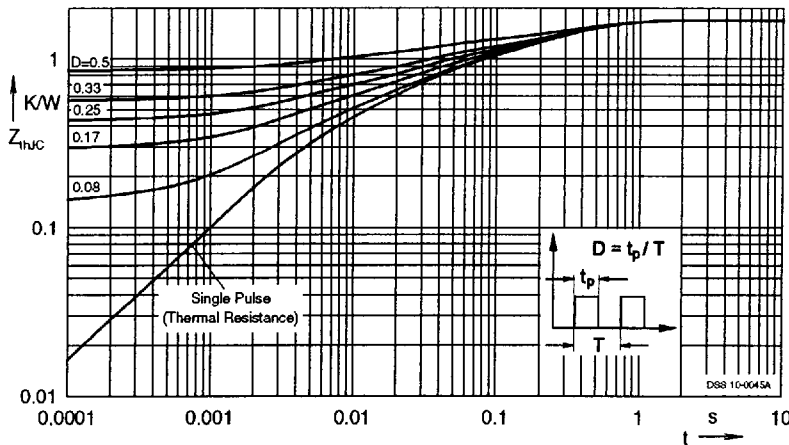


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode