

Power Schottky Rectifier

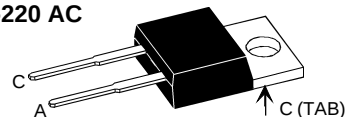
$$\begin{aligned} I_{FAV} &= 20 \text{ A} \\ V_{RRM} &= 15 \text{ V} \\ V_F &= 0.33 \text{ V} \end{aligned}$$

Preliminary Data

V_{RSM}	V_{RRM}	Type
V	V	
15	15	DSS 20-0015B



TO-220 AC



A = Anode, C = Cathode, TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}	$T_C = 135^\circ\text{C}$; rectangular, $d = 0.5$	35	A
I_{FAVM}		20	A
I_{FSM}	$T_{VJ} = 45^\circ\text{C}$; $t_p = 10 \text{ ms}$ (50 Hz), sine	300	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/ μs
T_{VJ}		-55...+150	$^\circ\text{C}$
T_{VJM}		150	$^\circ\text{C}$
T_{stg}		-55...+150	$^\circ\text{C}$
P_{tot}	$T_C = 25^\circ\text{C}$	90	W
M_d	mounting torque	0.4...0.6	Nm
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

Dimensions see outlines.pdf

Symbol	Conditions	Characteristic Values	
		typ.	max.
I_R ①	$T_{VJ} = 25^\circ\text{C}$ $V_R = V_{RRM}$ $T_{VJ} = 100^\circ\text{C}$ $V_R = V_{RRM}$	10	mA
		200	mA
V_F	$I_F = 20 \text{ A}$; $T_{VJ} = 125^\circ\text{C}$ $I_F = 20 \text{ A}$; $T_{VJ} = 25^\circ\text{C}$ $I_F = 40 \text{ A}$; $T_{VJ} = 125^\circ\text{C}$	0.33	V
		0.45	V
		0.43	V
R_{thJC}		1.4	K/W
R_{thCH}	0.5		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.

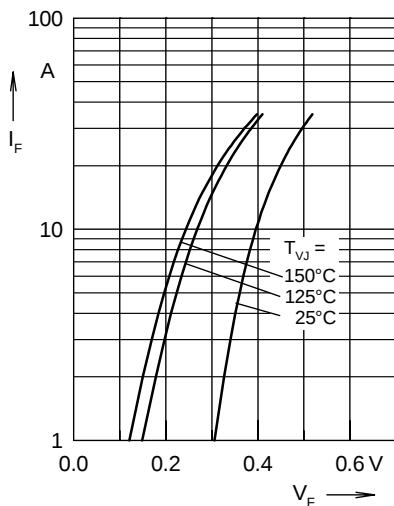


Fig. 1 Maximum forward voltage drop characteristics

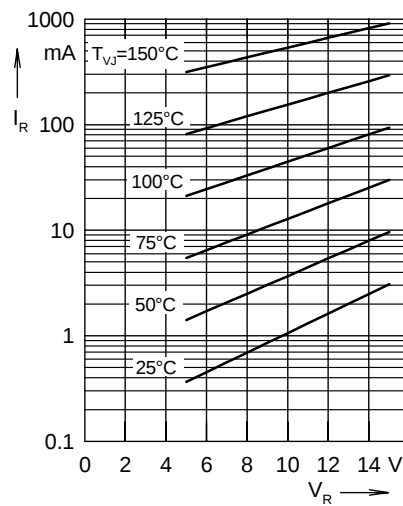


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

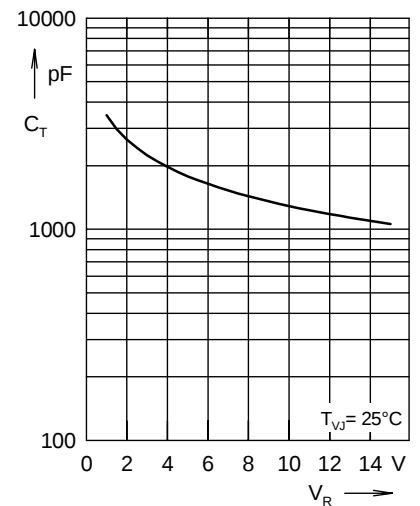


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

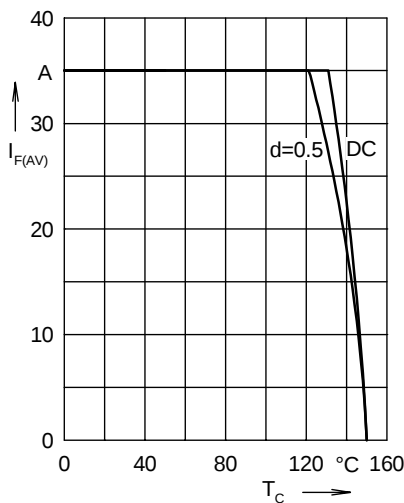


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

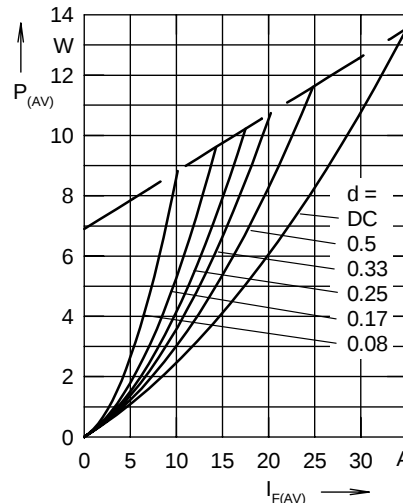


Fig. 5 Forward power loss characteristics

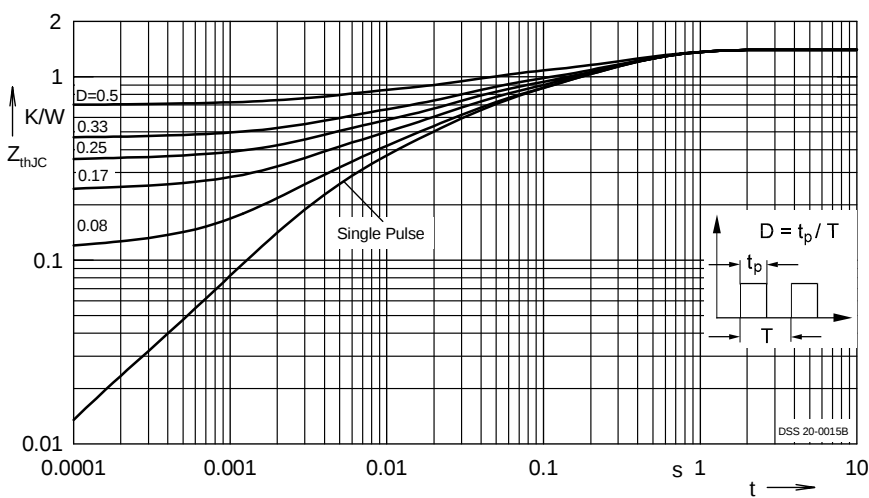


Fig. 6 Transient thermal impedance junction to case at various duty cycles