

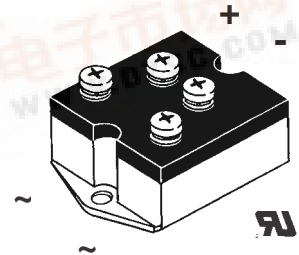
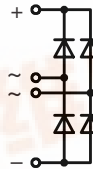
# IXYS VBO 50

## Single Phase Rectifier Bridge

$I_{dAVM} = 50 \text{ A}$   
 $V_{RRM} = 800-1800 \text{ V}$

$V_{RSM}$ V	$V_{RRM}$ V	Type
800	800	VBO 50-08NO7
1200	1200	VBO 50-12NO7
1400	1400	VBO 50-14NO7
1600	1600	VBO 50-16NO7
1800	1800	VBO 50-18NO7*

\* delivery time on request



Symbol	Conditions	Maximum Ratings	
$I_{dAVM}$	$T_C = 64^\circ\text{C}$ , module	50	A
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C};$ $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	750 A
		$t = 8.3 \text{ ms}$ (60 Hz), sine	820 A
$I^2t$	$T_{VJ} = T_{VJM}$ $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	670 A
		$t = 8.3 \text{ ms}$ (60 Hz), sine	740 A
$I^2t$	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	2800 A <sup>2</sup> s
		$t = 8.3 \text{ ms}$ (60 Hz), sine	2820 A <sup>2</sup> s
$T_{VJ}$	$V_R = 0$	$T_{VJ} = T_{VJM}$	2250 A <sup>2</sup> s
		$T_{VJ} = T_{VJM}$	2300 A <sup>2</sup> s
$T_{VJ}$		-40...+150	°C
$T_{VJM}$		150	°C
$T_{stg}$		-40...+150	°C
$V_{ISOL}$	50/60 Hz, RMS $I_{ISOL} \leq 1 \text{ mA}$	$t = 1 \text{ min}$	2500 V~
		$t = 1 \text{ s}$	3000 V~
$M_d$	Mounting torque (M5)	5 ±15%	Nm
		44 ±15%	lb.in.
		Terminal connection torque (M5)	3 ±15% Nm
$M_d$	Terminal connection torque (M5)	26 ±15%	lb.in.
			260 g
Weight	typ.		

### Features

- Package with screw terminals
- Isolation voltage 3000 V~
- Planar passivated chips
- Blocking voltage up to 1800 V
- Low forward voltage drop
- UL registered E 72873

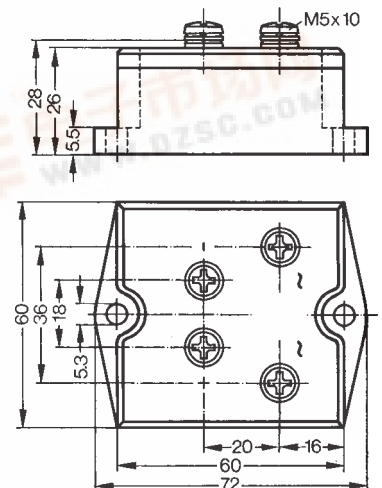
### Applications

- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

### Advantages

- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling

### Dimensions in mm (1 mm = 0.0394")



Symbol	Conditions	Characteristic Values	
$I_R$	$V_R = V_{RRM};$ $T_{VJ} = 25^\circ\text{C}$	$T_{VJ} = 25^\circ\text{C}$	$\leq 0.3 \text{ mA}$
		$T_{VJ} = T_{VJM}$	$\leq 10.0 \text{ mA}$
$V_F$	$I_F = 150 \text{ A};$ $T_{VJ} = 25^\circ\text{C}$		$\leq 1.6 \text{ V}$
$V_{T0}$	For power-loss calculations only		0.85 V
$r_T$	$T_{VJ} = T_{VJM}$		8 mΩ
$R_{thJC}$	per diode; DC current		2.6 K/W
		per module	0.65 K/W
$R_{thJK}$	per diode; DC current		2.84 K/W
		per module	0.71 K/W

Data according to IEC 60747 refer to a single diode unless otherwise stated.

IXYS reserves the right to change limits, test conditions and dimensions.

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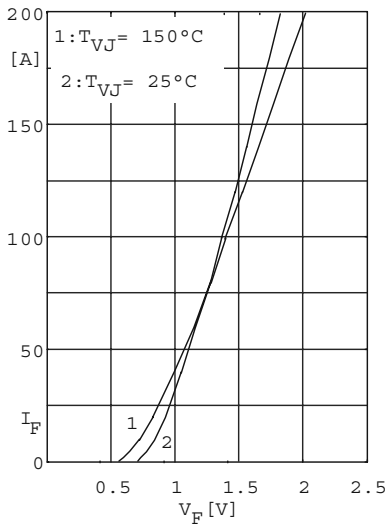


Fig. 1 Forward current versus voltage drop per diode

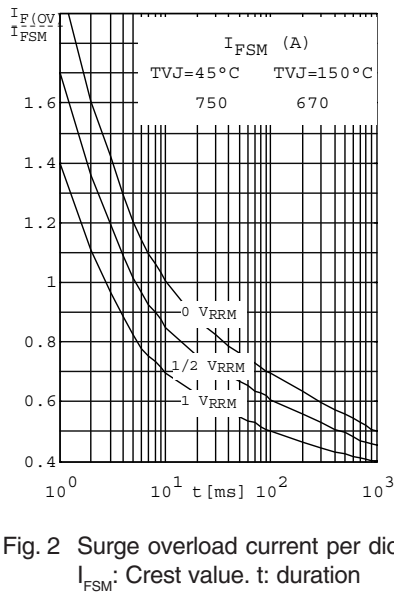


Fig. 2 Surge overload current per diode  
 $I_{FSM}$ : Crest value.  $t$ : duration

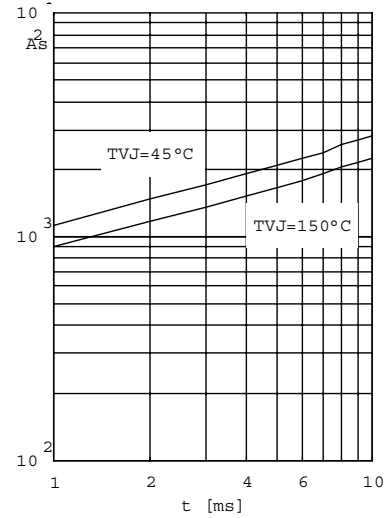


Fig. 3  $\int i^2 dt$  versus time (1-10ms) per diode or thyristor

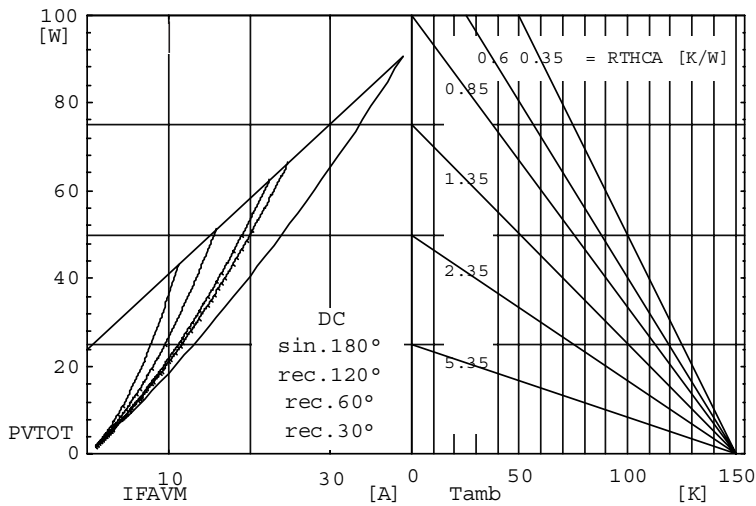


Fig. 4 Power dissipation versus direct output current and ambient temperature

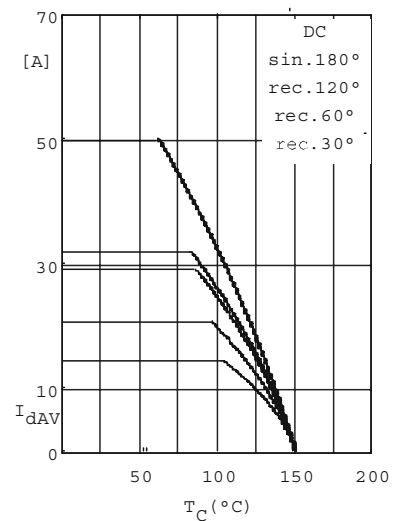


Fig. 5 Maximum forward current at case temperature

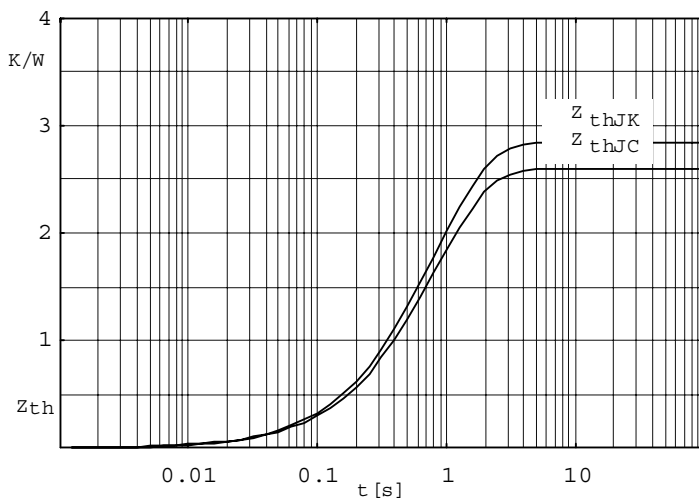


Fig. 6 Transient thermal impedance per diode or thyristor, calculated