

Three Phase Rectifier Bridge

$$I_{dAV} = 39 \text{ A}$$

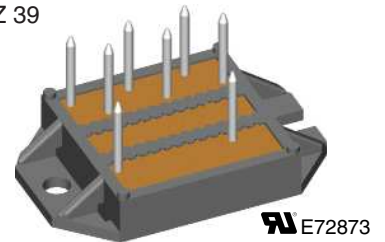
$$V_{RRM} = 800/1200 \text{ V}$$

Preliminary data

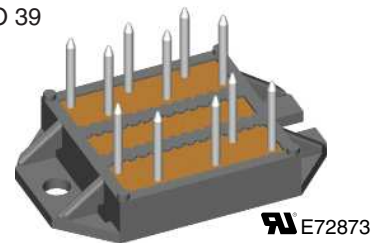
V_{RSM}	V_{RRM}	Type
900	800	VTO 39-08ho7
1300	1200	VVZ 39-12ho7



VVZ 39



VTO 39



Symbol	Conditions	Maximum Ratings	
I_{dAV} ①	$T_C = 85^\circ\text{C}$; module	39	A
I_{TAVM}	$T_C = 85^\circ\text{C}$ (180° sine; per thyristor)	16	A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$ $t = 10 \text{ ms}$ (50 Hz)	200	A
	$t = 8.3 \text{ ms}$ (60 Hz)	210	A
I^2t	$T_{VJ} = T_{VJM}$ $V_R = 0$ $t = 10 \text{ ms}$ (50 Hz)	180	A
	$t = 8.3 \text{ ms}$ (60 Hz)	190	A
I^2t	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$ $t = 10 \text{ ms}$ (50 Hz)	200	A ² s
	$t = 8.3 \text{ ms}$ (60 Hz)	150	A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ $f = 50 \text{ Hz}$; $t_p = 200 \mu\text{s}$ $V_D = \frac{2}{3} V_{DRM}$ $I_G = 0.15 \text{ A}$ $di_G/dt = 0.15 \text{ A}/\mu\text{s}$	repetitive; $I_T = 20 \text{ A}$	100 A/ μs
		non repetitive; $I_T = I_{TAVM}$	500 A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $V_D = \frac{2}{3} V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise)		500 V/ μs
V_{RGM}		10	V
P_{GM}	$T_{VJ} = T_{VJM}$ $t_p = 30 \mu\text{s}$	≤ 5	W
	$I_T = I_{TAVM}$ $t_p = 300 \mu\text{s}$	≤ 2.5	W
P_{GAVM}		0.5	W
T_{VJ}		-40...+125	°C
T_{VJM}		125	°C
T_{stg}		-40...+125	°C
V_{ISOL}	50/60 Hz, RMS $t = 1 \text{ min}$	2500	V~
	$I_{ISOL} \leq 1 \text{ mA}$ $t = 1 \text{ s}$	3000	V~
M_d	Mounting torque (M4)	1.5 - 2	Nm
		14 - 18	lb.in.
Weight	Typ.	18	g

① for resistive load at bridge output.

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

20200117b

Features

- Package with DCB ceramic base plate
- Isolation voltage 3000 V~
- Planar passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering

Applications

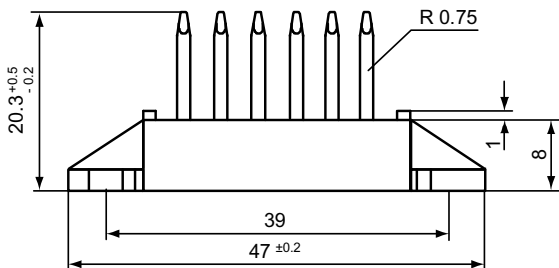
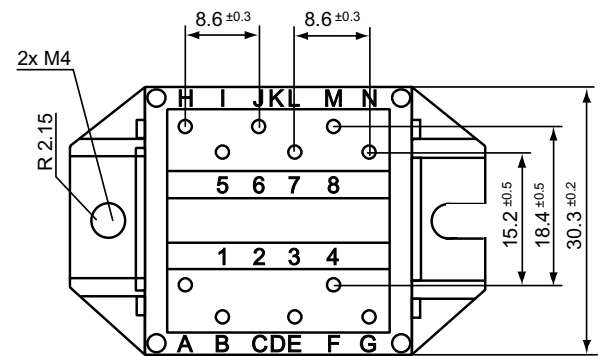
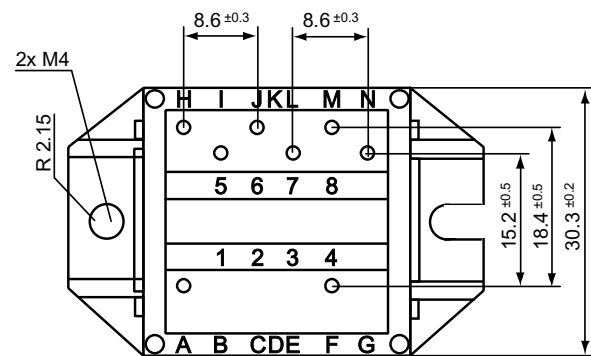
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

Advantages

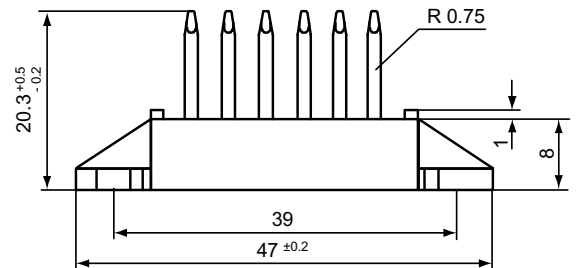
- Easy to mount with two screw
- Space and weight savings
- Improved temperature & power cycling capability
- Small and light weight

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

Symbol	Conditions	Characteristic Values		
$I_D; I_R$	$V_R = V_{RRM}; V_D = V_{DRM}$	$T_{VJ} = T_{VJM}$	\leq	5 mA
V_T	$I_T = 20$ A	$T_{VJ} = 25^\circ\text{C}$	\leq	1.6 V
V_{T0}	For power-loss calculations only	$T_{VJ} = 125^\circ\text{C}$		0.85 V
r_T				27 m Ω
V_{GT}	$V_D = 6$ V	$T_{VJ} = 25^\circ\text{C}$	\leq	1.5 V
		$T_{VJ} = -40^\circ\text{C}$	\leq	2.5 V
I_{GT}	$V_D = 6$ V	$T_{VJ} = 25^\circ\text{C}$	\leq	25 mA
		$T_{VJ} = -40^\circ\text{C}$	\leq	50 mA
V_{GD}	$V_D = \frac{2}{3}V_{DRM}$	$T_{VJ} = T_{VJM}$	\leq	0.2 V
I_{GD}			\leq	3 mA
I_L	$t_p = 10$ μs $I_G = 0.1$ A; $di_G/dt = 0.1$ A/ μs	$T_{VJ} = 25^\circ\text{C}$	\leq	75 mA
I_H	$V_D = 6$ V; $R_{GK} = \infty$	$T_{VJ} = 25^\circ\text{C}$	\leq	50 mA
t_{gd}	$V_D = \frac{1}{2}V_{DRM}$ $I_G = 0.1$ A; $di_G/dt = 0.1$ A/ μs	$T_{VJ} = 25^\circ\text{C}$	\leq	2 μs
R_{thJC}	per thyristor / diode; DC per module			1.3 K/W 0.22 K/W
R_{thJH}	per thyristor / diode; DC per module			1.8 K/W 0.3 K/W
d_s	Creeping distance on surface			11.2 mm
d_A	Creepage distance in air			5 mm
a	Max. allowable acceleration			50 m/s ²

Dimensions in mm (1 mm = 0.0394")


VVZ 39



VTO 39