

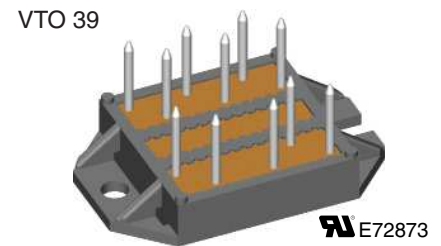
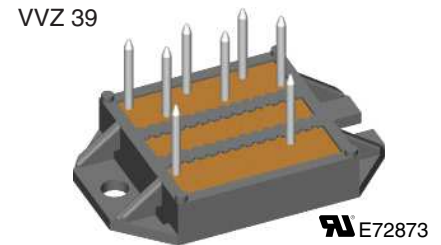
# Three Phase Rectifier Bridge

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

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

## Preliminary data

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



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 ms (50 Hz) t = 8.3 ms (60 Hz)	200 A 210 A
	$T_{VJ} = T_{VJM}$ $V_R = 0$	t = 10 ms (50 Hz) t = 8.3 ms (60 Hz)	180 A 190 A
$I^2t$	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$	t = 10 ms (50 Hz) t = 8.3 ms (60 Hz)	200 A <sup>2</sup> s 150 A <sup>2</sup> s
	$T_{VJ} = T_{VJM}$ $V_R = 0$	t = 10 ms (50 Hz) t = 8.3 ms (60 Hz)	160 A <sup>2</sup> s 150 A <sup>2</sup> s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 50 Hz; $t_p = 200 \mu\text{s}$	repetitive; $I_T = 20 \text{ A}$	100 A/ $\mu\text{s}$
	$V_D = \frac{2}{3} V_{DRM}$ $I_G = 0.15 \text{ A}$ $di_G/dt = 0.15 \text{ A}/\mu\text{s}$	non repetitive; $I_T = I_{TAVM}$	500 A/ $\mu\text{s}$
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$ ; $V_D = \frac{2}{3} V_{DRM}$ $R_{GK} = \infty$ , method 1 (linear voltage rise)		500 V/ $\mu\text{s}$
$V_{RGM}$		10	V
$P_{GM}$	$T_{VJ} = T_{VJM}$	$t_p = 30 \mu\text{s}$	$\leq 5 \text{ W}$
	$I_T = I_{TAVM}$	$t_p = 300 \mu\text{s}$	$\leq 2.5 \text{ W}$
$P_{GAVM}$		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 min	2500 V~
	$I_{ISOL} \leq 1 \text{ mA}$	t = 1 s	3000 V~
$M_d$	Mounting torque (M4)	1.5 - 2	Nm
		14 - 18	lb.in.
<b>Weight</b>	Typ.	18	g

① for resistive load at bridge output.

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### 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

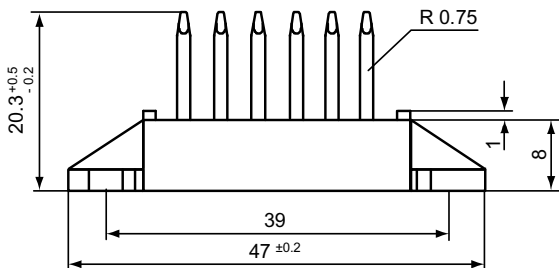
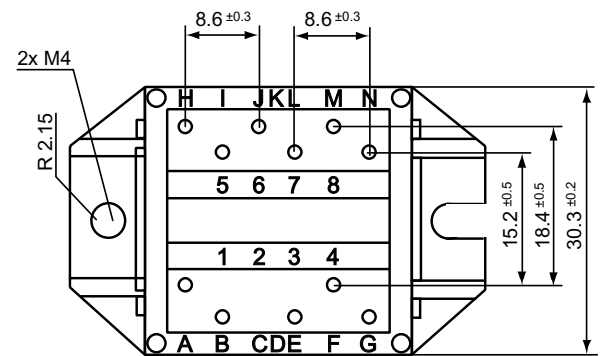
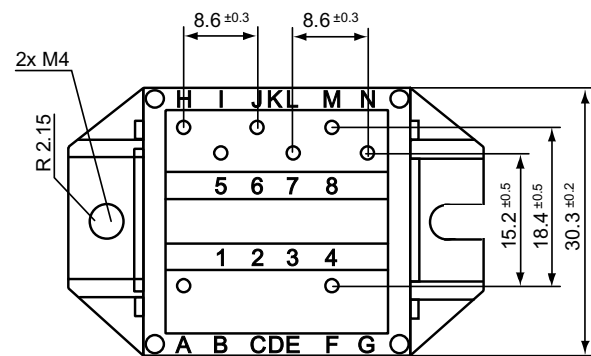
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

### Advantages

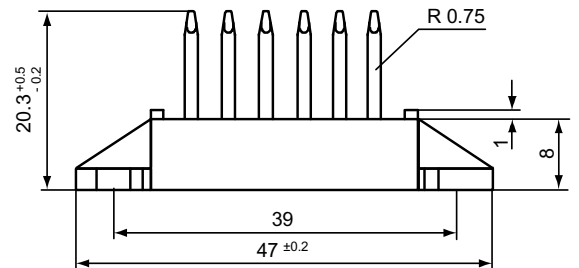
- Easy to mount with two screw
- Space and weight savings
- Improved temperature & power cycling capability
- Small and light weight

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 $\Omega$
$V_{GT}$	$V_D = 6$ 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
$I_L$	$t_p = 10$ $\mu\text{s}$ $I_G = 0.1$ A; $di_G/dt = 0.1$ A/ $\mu\text{s}$	$T_{VJ} = 25^\circ\text{C}$	$\leq$	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/ $\mu\text{s}$	$T_{VJ} = 25^\circ\text{C}$	$\leq$	2 $\mu\text{s}$
$R_{thJC}$	per thyristor / diode; DC			1.3 K/W
	per module			0.22 K/W
$R_{thJH}$	per thyristor / diode; DC			1.8 K/W
	per module			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 <sup>2</sup>

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


VVZ 39



VTO 39