

Three Phase Rectifier Bridge

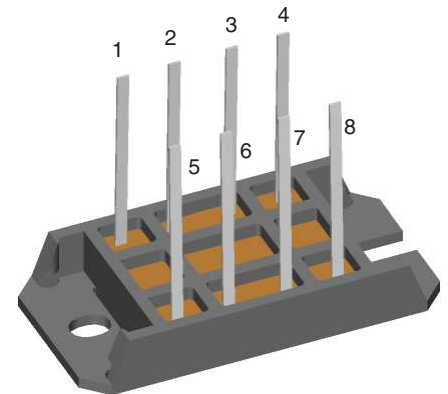
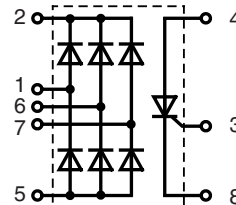
with Fast Diodes and "Softstart" Thyristor

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

$$I_{TAVM} = 31 \text{ A}$$

$$V_{RRM} = 1200/1600 \text{ V}$$

V_{RSM} V	V_{RRM} V	Type
1300	1200	VUC 36-12go2
1700	1600	VUC 36-16go2



Symbol	Conditions	Maximum Ratings		
		Diode	Thyristor	
I_{dAV}	$T_K = 85^\circ\text{C}$, module	34	-	A
I_{dAVM}	module	39	-	A
I_{TAVM}	$T_K = 85^\circ\text{C}$, DC	-	31	A
I_{FSM}, I_{TSM}	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	300	400 A
		$t = 8.3 \text{ ms}$ (60 Hz), sine	330	440 A
	$T_{VJ} = T_{VJM}$ $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	270	360 A
		$t = 8.3 \text{ ms}$ (60 Hz), sine	300	400 A
I^2t	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	450	800 A ² s
		$t = 8.3 \text{ ms}$ (60 Hz), sine	460	810 A ² s
	$T_{VJ} = T_{VJM}$ $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	365	650 A ² s
		$t = 8.3 \text{ ms}$ (60 Hz), sine	380	670 A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ $f = 400 \text{ Hz}$, $t_p = 200 \mu\text{s}$ $V_D = \frac{2}{3} V_{DRM}$ $I_G = 0.3 \text{ A}$ $di_G/dt = 0.3 \text{ A}/\mu\text{s}$	repetitive, $I_T = 50 \text{ A}$	150	A/ μs
		non repetitive, $I_T = I_{TAVM}$	500	A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $V_{DR} = \frac{2}{3} V_{DRM}$ $R_{GK} = \infty$; method 1 (linear voltage rise)		200	V/ μs
V_{RGM}			10	V
P_{GM}	$T_{VJ} = T_{VJM}$	$t_p = 30 \mu\text{s}$	≤ 10	W
	$I_T = I_{TAVM}$	$t_p = 10 \text{ ms}$	≤ 1	W
P_{GAVM}			0.5	W
T_{VJ}			-40...+125	$^\circ\text{C}$
T_{VJM}			125	$^\circ\text{C}$
T_{stg}			-40...+125	$^\circ\text{C}$
V_{ISOL}	50/60 Hz, RMS	$t = 1 \text{ min}$	3000	V~
	$I_{ISOL} \leq 1 \text{ mA}$	$t = 1 \text{ s}$	3600	V~
M_d	Mounting torque	(M5)	2-2.5	Nm
		(10-32 UNF)	18-22	lb.in.
Weight	typ.		28	g

Features

- Package with DCB ceramic base plate
- Isolation voltage 3600 V~
- Planar passivated chips
- Fast recovery diodes to reduce EMI
- Separate thyristor for softstart
- Solderable terminals
- UL registered E 72873

Applications

- Input rectifier for switching power supplies (SMPS)
- Softstart capacitor charging
- Electric drives and auxiliaries

Advantages

- Easy to mount with two screws
- Space and weight savings
- Improved temperature & power cycling
- Up to 10 dB lower EMI/RFI compared to standard rectifier

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

Disclaimer Notice

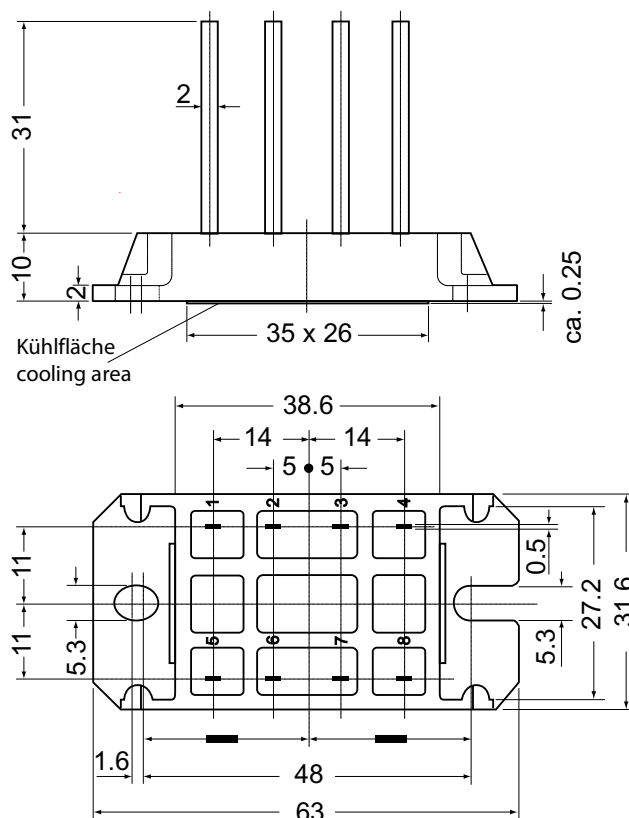
Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.

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

20200117c

Symbol	Conditions	Characteristic Values	
		Diode	Thyristor
I_R, I_D	$V_R = V_{RRM}; V_D = V_{DRM}$ $T_{VJ} = T_{VJM}$ $T_{VJ} = 25^\circ\text{C}$	≤ 5 ≤ 0.3	≤ 5 mA ≤ 0.3 mA
V_F, V_T	$I_F = 55$ A; $I_T = 45$ A $T_{VJ} = 25^\circ\text{C}$	≤ 1.85	≤ 1.4 V
V_{T0}	For power-loss calculations only	1.2	0.85 V
r_T	$T_{VJ} = 125^\circ\text{C}$	16	10 m Ω
V_{GT}	$V_D = 6$ V $T_{VJ} = 25^\circ\text{C}$		≤ 1.5 V
I_{GT}	$V_D = 6$ V $T_{VJ} = 25^\circ\text{C}$		≤ 80 mA
V_{GD}	$V_D = \frac{2}{3} V_{DRM}$ $T_{VJ} = T_{VJM}$		≤ 0.2 V
I_{GD}	$V_D = \frac{2}{3} V_{DRM}$ $T_{VJ} = T_{VJM}$		≤ 5 mA
I_L	$t_G = 30$ μs ; $I_G = 0.3$ A $di_G/dt = 0.3$ A/ μs $T_{VJ} = 25^\circ\text{C}$		≤ 300 mA
I_H	$V_D = 6$ V; $R_{GK} = \infty$ $T_{VJ} = 25^\circ\text{C}$		≤ 100 mA
t_{gd}	$V_D = \frac{1}{2} V_{DRM}$; $I_G = 0.3$ A $di_G/dt = 0.3$ A/ μs $T_{VJ} = 25^\circ\text{C}$		≤ 2.5 μs
t_q	$I_T = 15$ A; $t_p = 300$ μs ; $-di/dt = 10$ A/ μs ; $T_{VJ} = 125^\circ\text{C}$ $V_R = 100$ V; $dv/dt = 20$ V/ μs ; $V_D = \frac{2}{3} V_{DRM}$		typ. 130 μs
t_{rr}	$I_F = 10$ A; $V_R = \frac{1}{2} V_{RRM}$ $-di/dt = 10$ A/ μs $T_{VJ} = 25^\circ\text{C}$	≤ 1.5	- μs
R_{thJC}	per thyristor (diode); DC current per module	1.4 0.233	0.9 K/W - K/W
R_{thJH}	per thyristor (diode); DC current per module	2.0 0.333	1.1 K/W - K/W
d_s	Creeping distance on surface		7 mm
d_A	Creepage distance in air		7 mm
a	Max. allowable acceleration		50 m/s ²

Dimensions in mm (1 mm = 0.0394")



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

20200117c