

Three Phase Rectifier Bridge

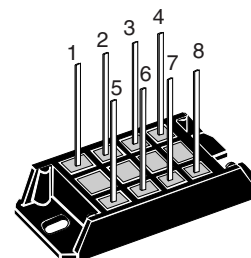
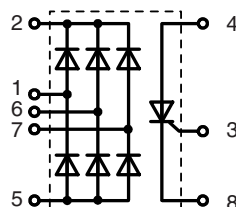
with Fast Diodes and "Softstart" Thyristor

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

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

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

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

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

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

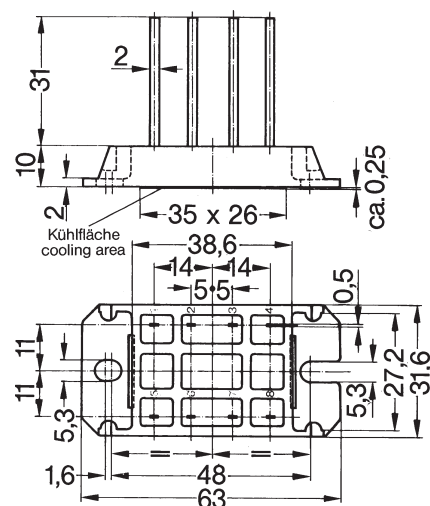
Applications

- 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

Dimensions in mm (1 mm = 0.0394")



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

20100709b

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	$I_F = 55\text{ A}; I_T = 45\text{ A}$ $T_{VJ} = 25^\circ\text{C}$	≤ 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}	$V_D = 6\text{ V}$ $T_{VJ} = 25^\circ\text{C}$		≤ 1.5 V
I_{GT}	$V_D = 6\text{ V}$ $T_{VJ} = 25^\circ\text{C}$		≤ 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	$t_G = 30\text{ }\mu\text{s}; I_G = 0.3\text{ A}$ $di_G/dt = 0.3\text{ A}/\mu\text{s}$ $T_{VJ} = 25^\circ\text{C}$		≤ 300 mA
I_H	$V_D = 6\text{ V}; R_{GK} = \infty$ $T_{VJ} = 25^\circ\text{C}$		≤ 100 mA
t_{gd}	$V_D = \frac{1}{2} V_{DRM}; I_G = 0.3\text{ A}$ $di_G/dt = 0.3\text{ A}/\mu\text{s}$ $T_{VJ} = 25^\circ\text{C}$		≤ 2.5 μs
t_q	$I_T = 15\text{ A}; t_p = 300\text{ }\mu\text{s}; -di/dt = 10\text{ A}/\mu\text{s}; T_{VJ} = 125^\circ\text{C}$ $V_R = 100\text{ V}; dv/dt = 20\text{ V}/\mu\text{s}; V_D = \frac{2}{3} V_{DRM}$		typ. 130 μs
t_{rr}	$I_F = 10\text{ A}; V_R = \frac{1}{2} V_{RRM}$ $-di/dt = 10\text{ A}/\mu\text{s}$ $T_{VJ} = 25^\circ\text{C}$	≤ 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