

Three Phase Rectifier Bridge

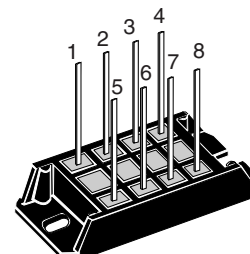
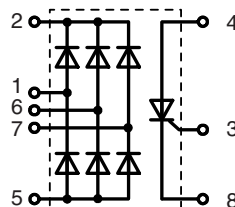
with Fast Diodes and "Softstart" Thyristor

$$I_{dAVM} = 28 \text{ A}$$

$$I_{TAVM} = 26 \text{ A}$$

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

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
1300	1200	VUC 25-12go2
1500	1400	VUC 25-14go2
1700	1600	VUC 25-16go2



Symbol	Conditions	Maximum Ratings	
		Diode	Thyristor
I_{dAV}	$T_K = 85^\circ\text{C}$; module	25	-
I_{dAVM}	module	28	-
I_{TAVM}	$T_K = 85^\circ\text{C}$; (DC)	-	26
I_{FSM}, I_{TSM}	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	300
		$t = 8.3 \text{ ms}$ (60 Hz), sine	330
	$T_{VJ} = T_{VJM}$; $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	270
		$t = 8.3 \text{ ms}$ (60 Hz), sine	300
I^2t	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	450
		$t = 8.3 \text{ ms}$ (60 Hz), sine	460
	$T_{VJ} = T_{VJM}$; $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	365
		$t = 8.3 \text{ ms}$ (60 Hz), sine	380
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $f = 400 \text{ Hz}$, $t_p = 200 \mu\text{s}$; $V_D = 2/3 V_{DRM}$; $I_G = 0.3 \text{ A}$; $di_G/dt = 0.3 \text{ A}/\mu\text{s}$	repetitive, $I_T = 50 \text{ A}$	150
		non repetitive, $I_T = I_{TAVM}$	500
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $V_{DR} = 2/3 V_{DRM}$; $R_{GK} = \infty$; method 1 (linear voltage rise)		200
V_{RGM}			10
P_{GM}	$T_{VJ} = T_{VJM}$	$t_p = 30 \mu\text{s}$	≤ 10
	$I_T = I_{TAVM}$	$t_p = 10 \text{ ms}$	≤ 1
P_{GAVM}			0.5
T_{VJ}			-40...+125
T_{VJM}			125
T_{stg}			-40...+125
V_{ISOL}	50/60 Hz, RMS	$t = 1 \text{ min}$	3000
	$I_{ISOL} \leq 1 \text{ mA}$	$t = 1 \text{ s}$	3600
M_d	Mounting torque (M5) (10-32 UNF)		2-2.5
			18-22
Weight	typ.		28

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

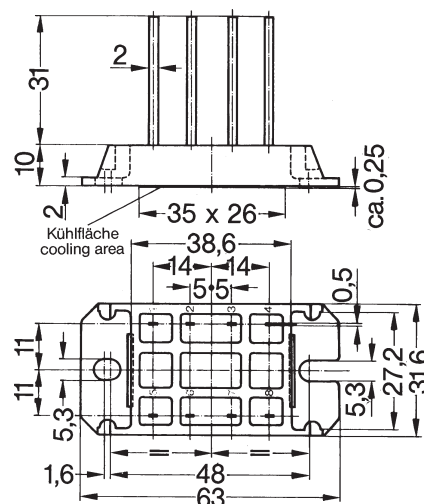
Applications

- 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")



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

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

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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, $T_{VJ} = 25^\circ\text{C}$	≤ 2.2	≤ 1.5 V
V_{T0}	For power-loss calculations only	1.2	1.1 V
r_T	($T_{VJ} = 125^\circ\text{C}$)	18	11 m Ω
V_{GT}	$V_D = 6$ V; $T_{VJ} = 25^\circ\text{C}$	$\leq$	1.5 V
I_{GT}	$V_D = 6$ V; $T_{VJ} = 25^\circ\text{C}$	$\leq$	80 mA
V_{GD}	$T_{VJ} = T_{VJM};$ $T_{VJ} = T_{VJM};$	$\leq$	0.2 V
I_{GD}	$V_D = 2/3 V_{DRM}$ $V_D = 2/3 V_{DRM}$	$\leq$	5 mA
I_L	$T_{VJ} = 25^\circ\text{C}; t_G = 30$ μs $I_G = 0.3$ A; $di_G/dt = 0.3$ A/ μs	$\leq$	300 mA
I_H	$T_{VJ} = 25^\circ\text{C}; V_D = 6$ V; $R_{GK} = \infty$	$\leq$	100 mA
t_{gd}	$T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.3$ A; $di_G/dt = 0.3$ A/ μs	$\leq$	2.5 μs
t_q	$T_{VJ} = 125^\circ\text{C}; I_T = 15$ A, $t_p = 300$ μs , $-di/dt = 10$ A/ μs $V_R = 100$ V, $dv/dt = 20$ V/ μs , $V_D = 2/3 V_{DRM}$	typ. 130	μs
t_{rr}	$T_{VJ} = 25^\circ\text{C}; I_F = 10$ A; $-di/dt = 10$ A/ μs , $V_R = 1/2 V_{RRM}$	≤ 1.5	- μs
R_{thJC}	per thyristor (diode); DC current per module	2.3 0.38	0.9 K/W - K/W
R_{thJH}	per thyristor (diode); DC current per module	2.9 0.48	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