

Three Phase Rectifier Bridge

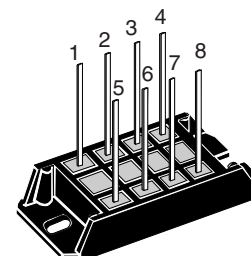
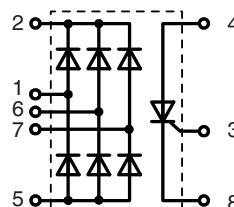
with Fast Diodes and "Softstart" Thyristor

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

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

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

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



Symbol	Conditions		Maximum Diode	Ratings Thyristor	
I _{dAV}	T _K = 85°C, module		34	-	A
I _{dAVM}	module		39	-	A
I _{TAVM}	T _K = 85°C, DC		-	31	A
I _{FSM} , I _{TSM}	T _{VJ} = 45°C	t = 10 ms (50 Hz), sine	300	400	A
	V _R = 0	t = 8.3 ms (60 Hz), sine	330	440	A
	T _{VJ} = T _{VJM}	t = 10 ms (50 Hz), sine	270	360	A
	V _R = 0	t = 8.3 ms (60 Hz), sine	300	400	A
I ² t	T _{VJ} = 45°C	t = 10 ms (50 Hz), sine	450	800	A ² s
	V _R = 0	t = 8.3 ms (60 Hz), sine	460	810	A ² s
	T _{VJ} = T _{VJM}	t = 10 ms (50 Hz), sine	365	650	A ² s
	V _R = 0	t = 8.3 ms (60 Hz), sine	380	670	A ² s
(di/dt) _{cr}	T _{VJ} = T _{VJM} f=400 Hz, t _p = 200 µs V _D = 2/3 V _{DRM} I _G = 0.3 A di _G /dt = 0.3 A/µs	repetitive, I _T = 50 A		150	A/µs
		non repetitive, I _T = I _{TAVM}		500	A/µs
(dv/dt) _{cr}	T _{VJ} = T _{VJM} ; V _{DR} = 2/3 V _{DRM} R _{GK} = ∞; method 1 (linear voltage rise)			200	V/µs
V _{RGM}				10	V
P _{GM}	T _{VJ} = T _{VJM}	t _p = 30 µs	≤	10	W
	I _T = I _{TAVM}	t _p = 10 ms	≤	1	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		3000	V~
	I _{ISOL} ≤ 1 mA	t = 1 s		3600	V~
M _d	Mounting torque	(M5) (10-32 UNF)		2-2.5	Nm
				18-22	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

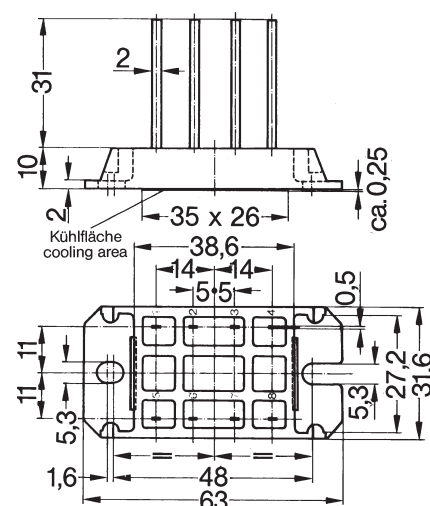
Applications

- 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")



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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 $T_{VJ} = 25^\circ\text{C}$	≤ 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

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