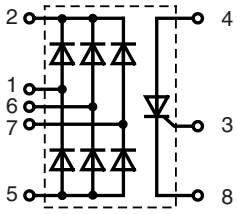
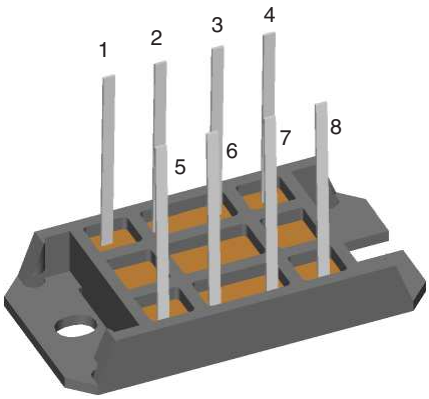
Three Phase Rectifier Bridge

with Fast Diodes and "Softstart" Thyristor

I_{dAVM} = 39 A
I_{TAVM} = 31 A
V_{RRM} = 1200/1600 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°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^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	450	800	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	460	810	A^2s
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	365	650	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	380	670	A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 400 Hz, t_P = 200 µs	repetitive, I_T = 50 A		150	A/µs
	$V_D = {}^2/_3 V_{DRM}$ I_G = 0.3 A di_G/dt = 0.3 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)		2-2.5	Nm
		(10-32 UNF)		18-22	lb.in.
Weight	typ.			28	g

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

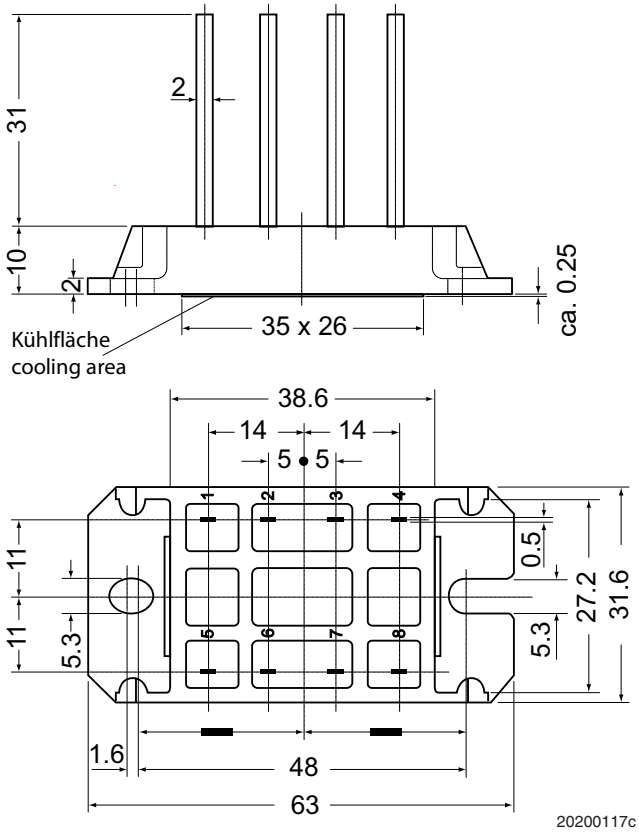
Applications
- Input rectifier for switching power supplies (SMPS)
- Softstart capacitor charging
- Electric drives and auxiliaries

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

Symbol	Conditions		Characteristic Values Diode	Thyristor	
I_R, I_D	$V_R = V_{RRM}$; $V_D = V_{DRM}$	$T_{VJ} = T_{VJM}$	≤ 5	≤ 5	mA
		$T_{VJ} = 25°C$	≤ 0.3	≤ 0.3	mA
V_F, V_T	$I_F = 55$ A; $I_T = 45$ A	$T_{VJ} = 25°C$	≤ 1.85	≤ 1.4	V
V_{T0}	For power-loss calculations only		1.2	0.85	V
r_T		$T_{VJ} = 125°C$	16	10	mΩ
V_{GT}	$V_D = 6$ V	$T_{VJ} = 25°C$		≤ 1.5	V
I_{GT}	$V_D = 6$ V	$T_{VJ} = 25°C$		≤ 80	mA
V_{GD}	$V_D = {}^2/_3 V_{DRM}$	$T_{VJ} = T_{VJM}$		≤ 0.2	V
I_{GD}	$V_D = {}^2/_3 V_{DRM}$	$T_{VJ} = T_{VJM}$		≤ 5	mA
I_L	$t_G = 30$ µs; $I_G = 0.3$ A; $di_G/dt = 0.3$ A/µs	$T_{VJ} = 25°C$		≤ 300	mA
I_H	$V_D = 6$ V; $R_{GK} = \infty$	$T_{VJ} = 25°C$		≤ 100	mA
t_{gd}	$V_D = ½V_{DRM}$; $I_G = 0.3$ A; $di_G/dt = 0.3$ A/µs	$T_{VJ} = 25°C$		≤ 2.5	µs
t_q	$I_T = 15$ A; $t_p = 300$ µs; -di/dt = 10 A/µs; $V_R = 100$ V; dv/dt = 20 V/µs; $V_D = {}^2/_3 V_{DRM}$	$T_{VJ} = 125°C$		typ. 130	µs
t_{rr}	$I_F = 10$ A; $V_R = ½V_{RRM}$; -di/dt = 10 A/µs	$T_{VJ} = 25°C$	≤ 1.5	-	µs
R_{thJC}	per thyristor (diode); DC current		1.4	0.9	K/W
	per module		0.233	-	K/W
R_{thJH}	per thyristor (diode); DC current		2.0	1.1	K/W
	per module		0.333	-	K/W
d_S	Creeping distance on surface			7	mm
d_A	Creepage distance in air			7	mm
a	Max. allowable acceleration			50	m/s²

Dimensions in mm (1 mm = 0.0394")



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

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