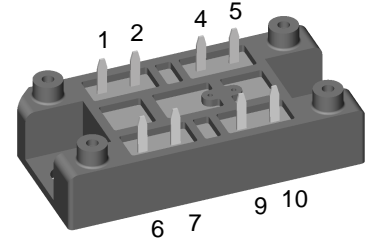
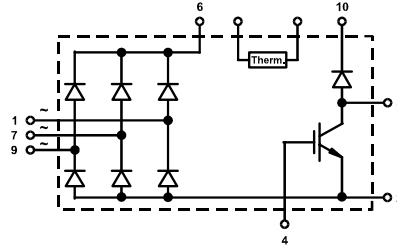


Three Phase Rectifier Bridge with IGBT and Fast Recovery Diode for Braking System

V_{RRM} = 1200-1600 V
I_{dAVM} = 70 A

V _{RRM} V	Type
1200	VUB 71-12 NO1
1600	VUB 71-16 NO1



Symbol	Test Conditions	Maximum Ratings		
V_{RRM} I_{dAV} I_{dAVM}	Rectifier Diodes $T_H = 110^\circ\text{C}$, sinusoidal 120° limited by leads	1200 / 1600	V	
		59	A	
		70	A	
I_{FSM} I²t	Rectifier Diodes $T_{VJ} = 45^\circ\text{C}$, $t = 10$ ms, $V_R = 0$ V $T_{VJ} = 150^\circ\text{C}$, $t = 10$ ms, $V_R = 0$ V	530	A	
		475	A	
		1400	A	
		1130	A	
P_{tot}	$T_H = 25^\circ\text{C}$ per diode	90	W	
V_{CES} V_{GE}	IGBT $T_{VJ} = 25^\circ\text{C}$ to 150°C Continuous	1200	V	
		± 20	V	
I_{C25}	$T_H = 25^\circ\text{C}$, DC	43	A	
I_{C80}	$T_H = 80^\circ\text{C}$, DC	29	A	
I_{CM}	$t_p =$ Pulse width limited by T_{VJM}	90	A	
P_{tot}	$T_H = 80^\circ\text{C}$	160	W	
V_{RRM} I_{FAV} I_{FRMS} I_{FRM}	Fast Recovery Diode $T_H = 80^\circ\text{C}$, rectangular $d = 0.5$ $T_H = 80^\circ\text{C}$, rectangular $d = 0.5$ $T_H = 80^\circ\text{C}$, $t_p = 10$ μs , $f = 5$ kHz	1200	V	
		9	A	
		14	A	
		90	A	
I_{FSM}	Fast Recovery Diode $T_{VJ} = 45^\circ\text{C}$, $t = 10$ ms $T_{VJ} = 150^\circ\text{C}$, $t = 10$ ms	75	A	
		60	A	
P_{tot}	$T_H = 25^\circ\text{C}$	40	W	
T_{VJ} T_{VJM} T_{stg}	Module	-40...+150	$^\circ\text{C}$	
		150	$^\circ\text{C}$	
		-40...+125	$^\circ\text{C}$	
V_{ISOL}	Module 50/60 Hz $I_{ISOL} \leq 1$ mA	$t = 1$ min	3000	V~
		$t = 1$ s	3600	V~
M_d	Mounting torque (M5) (10-32 unf)	2-2.5 18-22	Nm lb.in.	
Weight	typ.	35	g	

Features

- Soldering connections for PCB mounting
- Isolation voltage 3600 V~
- Ultrafast freewheeling diode
- Convenient package outline
- UL registered E 72873
- Thermistor

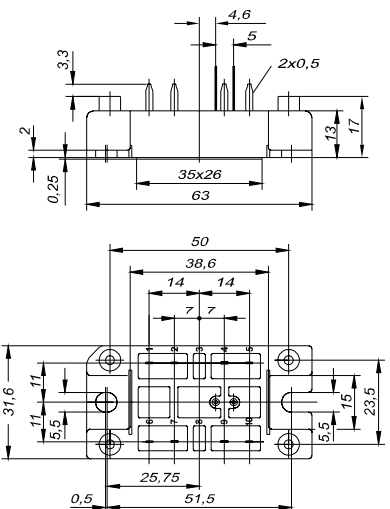
Applications

- Drive Inverters with brake system

Advantages

- 2 functions in one package
- No external isolation necessary
- Easy to mount with two screws
- Suitable for wave soldering
- High temperature and power cycling capability

Dimensions in mm (1 mm = 0.0394")



Data according to IEC 60747
IXYS reserves the right to change limits, test conditions and dimensions.

Symbol	Test Conditions	Characteristic Values ($T_{VJ} = 25^{\circ}\text{C}$, unless otherwise specified)			
		min.	typ.	max.	
I_R V_F V_{T0} r_T	Rectifier Diodes $V_R = V_{RRM}^1$ $T_{VJ} = 25^{\circ}\text{C}$ $V_R = V_{RRM}^1$ $T_{VJ} = 150^{\circ}\text{C}$ $I_F = 25 \text{ A}$, $T_{VJ} = 25^{\circ}\text{C}$ For power-loss calculations only $T_{VJ} = 150^{\circ}\text{C}$			0.1 mA 3 mA	
				1.3 V	
				0.85 V 8.5 mΩ	
		R_{thJH}	per diode		1.42 K/W
V_{BR(CES)} V_{GE(th)}	$V_{GS} = 0 \text{ V}$, $I_C = 3 \text{ mA}$ $I_C = 10 \text{ mA}$	1200 5		V V	
I_{GES}	$V_{GE} = \pm 20 \text{ V}$			500 nA	
I_{CES}	$T_{VJ} = 25^{\circ}\text{C}$, $V_{CE} = V_{CES}$ $T_{VJ} = 125^{\circ}\text{C}$, $V_{CE} = 0.8 V_{CES}$			700 μA 1.5 mA	
V_{CEsat}	$V_{GE} = 15 \text{ V}$, $I_C = 25 \text{ A}$			2.9 V	
t_{SC} (SCSOA)	$V_{GE} = 15 \text{ V}$, $V_{CE} = 600 \text{ V}$, $T_{VJ} = 125^{\circ}\text{C}$, $R_G = 22 \Omega$, non repetitive			10 μs	
RBSOA	$V_{GE} = 15 \text{ V}$, $V_{CE} = 800 \text{ V}$, $T_{VJ} = 125^{\circ}\text{C}$, $R_G = 22 \Omega$, Clamped Inductive load, $L = 100 \mu\text{H}$			50 A	
C_{ies}	$V_{CE} = 25 \text{ V}$, $f = 1 \text{ MHz}$, $V_{GE} = 0 \text{ V}$		4.5	nF	
t_{d(on)} t_{d(off)} t_{fi} E_{on} E_{off}	$V_{CE} = 600 \text{ V}$, $I_C = 25 \text{ A}$ $V_{GE} = 15 \text{ V}$, $R_G = 22 \Omega$ Inductive load; $L = 100 \mu\text{H}$ $T_{VJ} = 125^{\circ}\text{C}$		300 350 1600 6 8	ns ns ns mJ mJ	
R_{thJH}				0.8 K/W	
I_R V_F V_{T0} r_T I_{RM} t_{rr} R_{thJH}		Fast Recovery Diode $V_R = V_{RRM}^1$, $T_{VJ} = 25^{\circ}\text{C}$ $V_R = 800 \text{ V}$, $T_{VJ} = 150^{\circ}\text{C}$ $I_F = 12 \text{ A}$, $T_{VJ} = 25^{\circ}\text{C}$ For power-loss calculations only $T_{VJ} = 150^{\circ}\text{C}$ $I_F = 25 \text{ A}$, $-di_F/dt = 100 \text{ A}/\mu\text{s}$ $V_R = 100 \text{ V}$ $I_F = 1 \text{ A}$, $-di_F/dt = 100 \text{ A}/\mu\text{s}$ $V_R = 30 \text{ V}$		4	0.2 mA 6 mA
					2.7 V
					1.65 V 46 mΩ
			6.5	7 A	
			50	70 ns	
R_{thJH}				3.12 K/W	
R₂₅	NTC Siemens Typ S 891/2,2k/+9			2,2 kΩ	
d_S d_A a	Module Creep distance on surface Strike distance in air Maximum allowable acceleration			12.7 mm 9.4 mm 50 m/s ²	