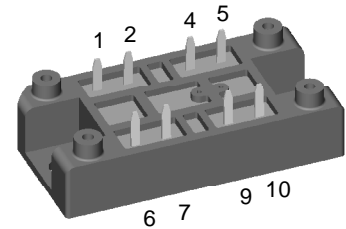
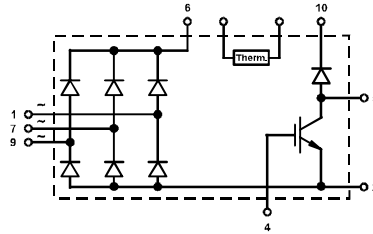


# Three Phase Rectifier Bridge with IGBT and Fast Recovery Diode for Braking System

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

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



Symbol	Test Conditions	Maximum Ratings		
$V_{RRM}$ $I_{dAV}$ $I_{dAVM}$	$T_H = 110^\circ\text{C}$ , sinusoidal 120° limited by leads	1200 / 1600	V	
		59	A	
		70	A	
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C}$ , $t = 10 \text{ ms}$ , $V_R = 0 \text{ V}$ $T_{VJ} = 150^\circ\text{C}$ , $t = 10 \text{ ms}$ , $V_R = 0 \text{ V}$	530	A	
		475	A	
$I^2t$	$T_{VJ} = 45^\circ\text{C}$ , $t = 10 \text{ ms}$ , $V_R = 0 \text{ V}$ $T_{VJ} = 150^\circ\text{C}$ , $t = 10 \text{ ms}$ , $V_R = 0 \text{ V}$	1400	A	
		1130	A	
$P_{tot}$	$T_H = 25^\circ\text{C}$ per diode	90	W	
$V_{CES}$ $V_{GE}$	$T_{VJ} = 25^\circ\text{C}$ to $150^\circ\text{C}$ Continuous	1200	V	
		$\pm 20$	V	
$I_{C25}$ $I_{C80}$	$T_H = 25^\circ\text{C}$ , DC $T_H = 80^\circ\text{C}$ , DC	43	A	
		29	A	
$I_{CM}$	$t_p = \text{Pulse width limited by } T_{VJM}$	90	A	
$P_{tot}$	$T_H = 80^\circ\text{C}$	160	W	
$V_{RRM}$ $I_{FAV}$ $I_{FRMS}$ $I_{FRM}$	$T_H = 80^\circ\text{C}$ , rectangular $d = 0.5$ $T_H = 80^\circ\text{C}$ , rectangular $d = 0.5$ $T_H = 80^\circ\text{C}$ , $t_p = 10 \mu\text{s}$ , $f = 5 \text{ kHz}$	1200	V	
		9	A	
		14	A	
		90	A	
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C}$ , $t = 10 \text{ ms}$ $T_{VJ} = 150^\circ\text{C}$ , $t = 10 \text{ ms}$	75	A	
		60	A	
$P_{tot}$	$T_H = 25^\circ\text{C}$	40	W	
$T_{VJ}$ $T_{VJM}$ $T_{stg}$		-40...+150 150 -40...+125	$^\circ\text{C}$ $^\circ\text{C}$ $^\circ\text{C}$	
$V_{ISOL}$	50/60 Hz $I_{ISOL} \leq 1 \text{ mA}$	$t = 1 \text{ min}$	3000	V~
		$t = 1 \text{ s}$	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

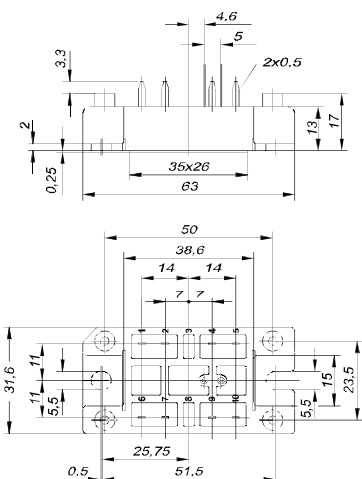
### Applications

- 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.
<b>Rectifier Diodes</b>	$I_R$	$V_R = V_{RRM'}$ $T_{VJ} = 25^{\circ}\text{C}$ $V_R = V_{RRM'}$ $T_{VJ} = 150^{\circ}\text{C}$		0.1 mA 3 mA
	$V_F$	$I_F = 25\text{ A}$ , $T_{VJ} = 25^{\circ}\text{C}$		1.3 V
	$V_{T0}$ $r_T$	For power-loss calculations only $T_{VJ} = 150^{\circ}\text{C}$		0.85 V 8.5 m $\Omega$
	$R_{thJH}$	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 8 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 $\mu\text{A}$ 1.5 mA	
$V_{CESat}$	$V_{GE} = 15\text{ V}$ , $I_C = 25\text{ A}$		2.9 V	
<b>IGBT</b>	$t_{SC}$ (SCSOA)	$V_{GE} = 15\text{ V}$ , $V_{CE} = 600\text{ V}$ , $T_{VJ} = 125^{\circ}\text{C}$ , $R_G = 22\ \Omega$ , non repetitive		10 $\mu\text{s}$
	<b>RBSOA</b>	$V_{GE} = 15\text{ V}$ , $V_{CE} = 800\text{ V}$ , $T_{VJ} = 125^{\circ}\text{C}$ , $R_G = 22\ \Omega$ , 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
<b>Fast Recovery Diode</b>	$I_R$	$V_R = V_{RRM'}$ $T_{VJ} = 25^{\circ}\text{C}$ $V_R = 800\text{ V}$ , $T_{VJ} = 150^{\circ}\text{C}$	4	0.2 mA 6 mA
	$V_F$	$I_F = 12\text{ A}$ , $T_{VJ} = 25^{\circ}\text{C}$		2.7 V
	$V_{T0}$ $r_T$	For power-loss calculations only $T_{VJ} = 150^{\circ}\text{C}$		1.65 V 46 m $\Omega$
	$I_{RM}$	$I_F = 25\text{ A}$ , $-di_F/dt = 100\text{ A}/\mu\text{s}$ $V_R = 100\text{ V}$	6.5	7 A
	$t_{rr}$	$I_F = 1\text{ A}$ , $-di_F/dt = 100\text{ A}/\mu\text{s}$ $V_R = 30\text{ V}$	50	70 ns
$R_{thJH}$			3.12 K/W	
$R_{25}$	<b>NTC</b> Siemens Typ S 891/2,2k/+9		2,2 k $\Omega$	
$d_S$ $d_A$ $a$	<b>Module</b> Creep distance on surface Strike distance in air Maximum allowable acceleration		12.7 mm 9.4 mm 50 m/s <sup>2</sup>	