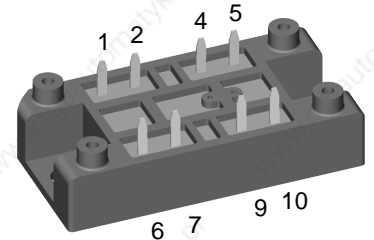
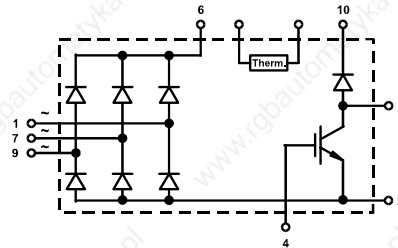


Three Phase Rectifier Bridge with IGBT and Fast Recovery Diode for Braking System

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	
Rectifier Diodes	V _{RRM}	1200 / 1600	V
	I _{dAV}	T _H = 110°C, sinusoidal 120°	59 A
	I _{dAVM}	limited by leads	70 A
	I _{FSM}	T _{VJ} = 45°C, t = 10 ms, V _R = 0 V	530 A
IGBT	I _{FSM}	T _{VJ} = 150°C, t = 10 ms, V _R = 0 V	475 A
	I ² t	T _{VJ} = 45°C, t = 10 ms, V _R = 0 V	1400 A
	I ² t	T _{VJ} = 150°C, t = 10 ms, V _R = 0 V	1130 A
	P _{tot}	T _H = 25°C per diode	90 W
Fast Recovery Diode	V _{CES}	T _{VJ} = 25°C to 150°C	1200 V
	V _{GE}	Continuous	± 20 V
	I _{C25}	T _H = 25°C, DC	43 A
	I _{C80}	T _H = 80°C, DC	29 A
	I _{CM}	t _p = Pulse width limited by T _{VJM}	90 A
	P _{tot}	T _H = 80°C	160 W
Module	V _{RRM}	T _H = 80°C, rectangular d = 0.5	1200 V
	I _{FAV}	T _H = 80°C, rectangular d = 0.5	9 A
	I _{FRMS}	T _H = 80°C, t _p = 10 μs, f = 5 kHz	14 A
	I _{FRM}	T _H = 80°C, t _p = 10 μs, f = 5 kHz	90 A
Module	I _{FSM}	T _{VJ} = 45°C, t = 10 ms	75 A
	I _{FSM}	T _{VJ} = 150°C, t = 10 ms	60 A
	P _{tot}	T _H = 25°C	40 W
Module	T _{VJ}	-40...+150	°C
	T _{VJM}	150	°C
	T _{stg}	-40...+125	°C
Module	V _{ISOL}	50/60 Hz t = 1 min	3000 V~
	V _{ISOL}	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.	35	g

Features

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

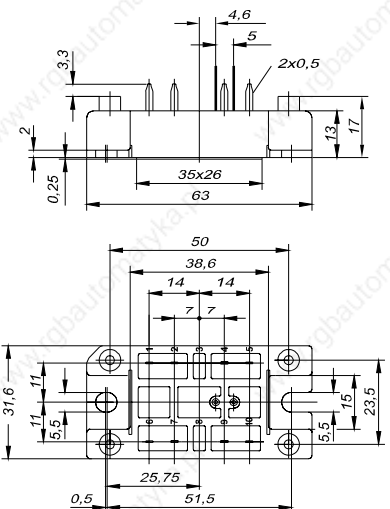
Applications

- 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°C, unless otherwise specified)			
		min.	typ.	max.	
Rectifier Diodes	I_R	$V_R = V_{RRM1}$ $V_R = V_{RRM1}$	$T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 150^\circ\text{C}$	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 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	
IGBT					
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	
Fast Recovery Diode		I_R	$V_R = V_{RRM1}$ $V_R = 800\text{ V}$	$T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 150^\circ\text{C}$	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 mΩ
	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	
NTC					
R_{25}	Siemens Typ S 891/2,2k+9			2,2 kΩ	
Module	d_S	Creep distance on surface		12.7 mm	
	d_A	Strike distance in air		9.4 mm	
	a	Maximum allowable acceleration		50 m/s ²	