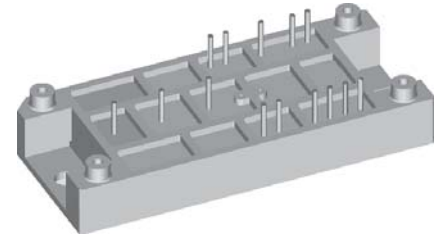
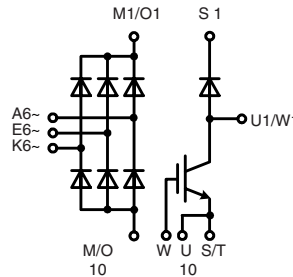


Three Phase Rectifier Bridge with IGBT and Fast Recovery Diode for Braking System

V_{RRM} = 1200/1600 V
I_{dAVM} = 188 A

Preliminary Data

V _{RRM}	Type	V _{RRM}	Type
V		V	
1200	VUB 120-12 NO2	1600	VUB 120-16 NO2
1200	VUB 160-12 NO2	1600	VUB 160-16 NO2



Symbol	Conditions	Maximum Ratings		
V_{RRM}		1200/1600	V	
I_{dAVM}	T _C = 80°C, rect., d = 1/3	188	A	
I_{FSM}	T _{VJ} = 45°C, t = 10 ms, V _R = 0 V	1100	A	
	T _{VJ} = 150°C, t = 10 ms, V _R = 0 V	960	A	
I²t	T _{VJ} = 45°C, t = 10 ms, V _R = 0 V	6050	A	
	T _{VJ} = 150°C, t = 10 ms, V _R = 0 V	4610	A	
P_{tot}	T _C = 25°C per diode	160	W	
V_{CES}	T _{VJ} = 25°C to 150°C Continuous	VUB 120	VUB160	
		1200	1200 V	
V_{GE}		± 20	± 20 V	
I_{C25}	T _C = 25°C, DC	140	177 A	
		T _C = 80°C, DC	100	125 A
			T _C = 80°C, d = 0.5	95
I_{CM}	t _p = Pulse width limited by T _{VJM}	280	350 A	
P_{tot}	T _C = 25°C	570	690 W	
V_{RRM}		1200	V	
I_{FAV}	T _C = 80°C, rect. d = 1/2	34	A	
I_{FRMS}	T _C = 80°C, rect. d = 1/2	48	A	
I_{FSM}	T _{VJ} = 45°C, t = 10 ms	200	A	
	T _{VJ} = 150°C, t = 10 ms	180	A	
P_{tot}	T _C = 25°C	140	W	
T_{VJ}		-40...+150	°C	
T_{VJM}		150	°C	
T_{stg}		-40...+125	°C	
V_{ISOL}	50/60 Hz	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.	
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	
Weight	typ.	80	g	

Features

- Soldering connections for PCB mounting
- Isolation voltage 3600 V~
- Ultrafast diode
- Convenient package outline
- UL registered E 72873
- Case and potting UL94 V-0

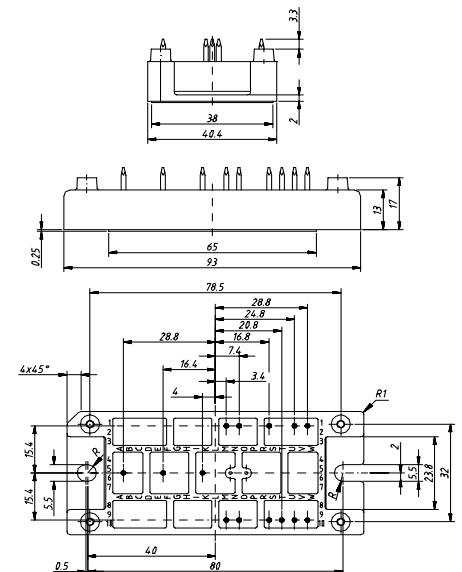
Applications

- Drive Inverters with brake system

Advantages

- 2 functions in one package
- 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.

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Symbol	Conditions	Characteristic Values ($T_{VJ} = 25^{\circ}\text{C}$, unless otherwise specified)		
		min.	typ.	max.
I_R	$V_R = V_{RRM}, T_{VJ} = 25^{\circ}\text{C}$			0.3 mA
	$V_R = V_{RRM}, T_{VJ} = 150^{\circ}\text{C}$			5 mA
V_F	$I_F = 150 \text{ A}, T_{VJ} = 25^{\circ}\text{C}$			1.46 V
V_{T0}	For power-loss calculations only			0.87 V
r_T	$T_{VJ} = 150^{\circ}\text{C}$			4.0 mΩ
R_{thJC}	per diode			0.6 K/W
R_{thCH}			0.2	K/W
$V_{BR(CES)}$ $V_{GE(th)}$	$V_{GS} = 0 \text{ V}, I_C = 1 \text{ mA}$	1200		V
	$I_C = 4 \text{ mA}$	4.5		6.5 V
I_{CES}	$V_{CE} = 1200 \text{ V}, T_{VJ} = 25^{\circ}\text{C}$			0.2 mA
	$T_{VJ} = 125^{\circ}\text{C}$			1 mA
V_{CEsat}	$V_{GE} = 15 \text{ V}, I_C = 50 \text{ A}$	VUB 120		2.1 V
	$I_C = 75 \text{ A}$	VUB 160		2.2 V
t_{SC} (SCSOA)	$V_{GE} = 15 \text{ V}, V_{CE} = 900 \text{ V}, T_{VJ} = 125^{\circ}\text{C},$ $R_G = 15/10 \Omega, \text{ non repetitive}$			10 μs
RBSOA	$V_{GE} = 15 \text{ V}, V_{CE} = 1200 \text{ V}, T_{VJ} = 125^{\circ}\text{C},$ Clamped Inductive load, $L = 100 \mu\text{H}$ $R_G = 15 \Omega$ VUB 120 $R_G = 10 \Omega$ VUB 160			150 A 200 A
C_{ies}	$V_{CE} = 25 \text{ V}, f = 1 \text{ MHz}, V_{GE} = 0 \text{ V}$	VUB 120	5.7	nF
		VUB 160	7.4	nF
$t_{d(on)}$	$V_{CE} = 600 \text{ V}, I_C = 50/75 \text{ A}$ $V_{GE} = 15 \text{ V}, R_G = 15/10 \Omega$ Inductive load; $L = 100 \mu\text{H}$ $T_{VJ} = 125^{\circ}\text{C}$	VUB 120	170	ns
$t_{d(on)}$		VUB 160	330	ns
$t_{d(off)}$		VUB 120	680	ns
$t_{d(off)}$		VUB 160	750	ns
E_{on}		VUB 120	11	mJ
E_{off}		VUB 160	12	mJ
R_{thJC}		VUB 120		0.22 K/W
		VUB 160		0.18 K/W
R_{thCH}		VUB 120	0.1	K/W
		VUB 160	0.1	K/W
I_R	$V_R = V_{RRM}, T_{VJ} = 25^{\circ}\text{C}$		0.75	0.5 mA
	$T_{VJ} = 125^{\circ}\text{C}$			1 mA
V_F	$I_F = 30 \text{ A}, T_{VJ} = 25^{\circ}\text{C}$			2.7 V
V_{T0}	For power-loss calculations only			1.3 V
r_T	$T_{VJ} = 150^{\circ}\text{C}$			15 mΩ
I_{RM}	$I_F = 50 \text{ A}, -di_F/dt = 100 \text{ A}/\mu\text{s}, V_R = 100 \text{ V}$		8	12 A
t_{tr}	$I_F = 1 \text{ A}, -di_F/dt = 100 \text{ A}/\mu\text{s}, V_R = 30 \text{ V}$		40	60 ns
R_{thJC} R_{thCH}				0.9 K/W
			0.3	K/W