

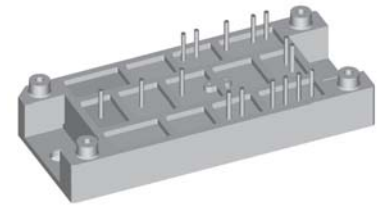
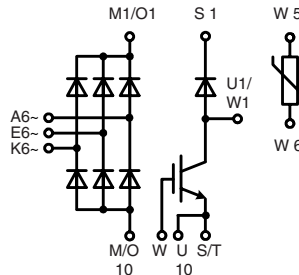
Three Phase Rectifier Bridge with IGBT and Fast Recovery Diode for Braking System

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

Preliminary Data

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

(T) = NTC optional



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
I ² t	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 _{GE}		± 20	± 20
I _{C25}	T _C = 25°C, DC	140	177
I _{C80}	T _C = 80°C, DC	100	125
	T _C = 80°C, d = 0.5	95	95
I _{CM}	t _p = Pulse width limited by T _{VJM}	280	350
P _{tot}	T _C = 25°C	570	690
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
	I _{ISOL} ≤ 1 mA	t = 1 s	3600
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
- optional NTC

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

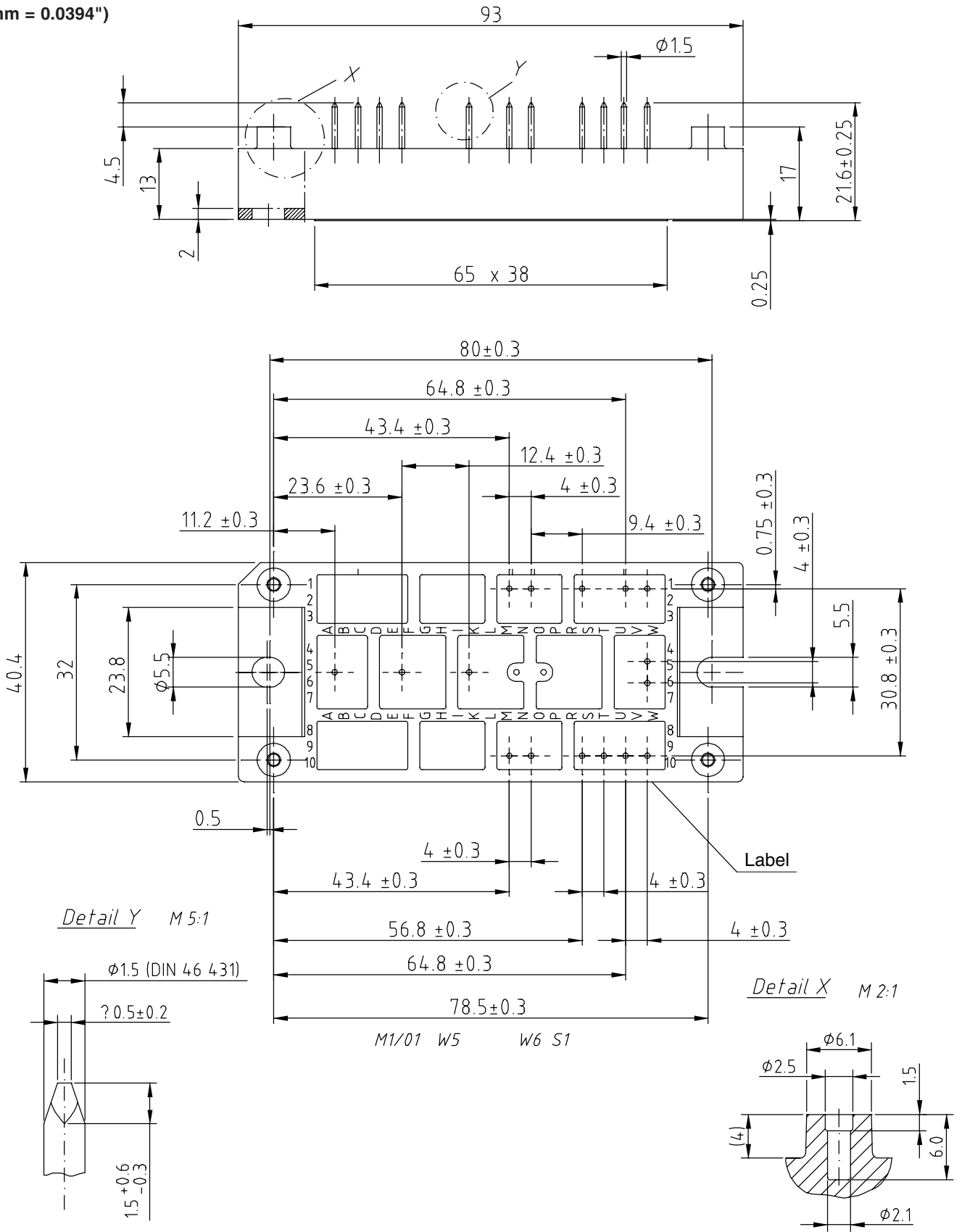
Data according to IEC 60747

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Symbol	Conditions	Characteristic Values		
		(T _{VJ} = 25°C, unless otherwise specified)		
		min.	typ.	max.
I_R	V _R = V _{RRM} , T _{VJ} = 25°C			0.3 mA
	V _R = V _{RRM} , T _{VJ} = 150°C			5 mA
V_F	I _F = 150 A, T _{VJ} = 25°C			1.46 V
V_{T0}	For power-loss calculations only			0.87 V
r_T	T _{VJ} = 150°C			4.0 mΩ
R_{thJC}	per diode			0.6 K/W
R_{thCH}			0.2	K/W
V_{BR(CES)}	V _{GS} = 0 V, I _C = 1 mA	1200		V
V_{GE(th)}	I _C = 4 mA	4.5		6.5 V
I_{CES}	V _{CE} = 1200 V, T _{VJ} = 25°C T _{VJ} = 125°C			0.2 mA 1 mA
V_{CEsat}	V _{GE} = 15 V, I _C = 50 A VUB 120 I _C = 75 A VUB 160			2.1 V 2.2 V
t_{SC} (SCSOA)	V _{GE} = 15 V, V _{CE} = 900 V, T _{VJ} = 125°C, R _G = 15/10 Ω, non repetitive			10 μs
RBSOA	V _{GE} = 15 V, V _{CE} = 1200 V, T _{VJ} = 125°C, Clamped Inductive load, L = 100 μH R _G = 15 Ω VUB 120 R _G = 10 Ω VUB 160			150 A 200 A
C_{ies}	V _{CE} = 25 V, f = 1 MHz, V _{GE} = 0 V VUB 120 VUB 160		5.7 7.4	nF nF
t_{d(on)}	$\left. \begin{array}{l} V_{CE} = 600 \text{ V, } I_C = 50/75 \text{ A} \\ V_{GE} = 15 \text{ V, } R_G = 15/10 \text{ } \Omega \\ \text{Inductive load; } L = 100 \text{ } \mu\text{H} \\ T_{VJ} = 125^\circ\text{C} \end{array} \right\}$	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
E_{off}	VUB 120	8	mJ	
E_{off}	VUB 160	10	mJ	
R_{thJC}		VUB 120		0.22 K/W
R_{thJC}		VUB 160		0.18 K/W
R_{thCH}		VUB 120	0.1	K/W
R_{thCH}		VUB 160	0.1	K/W
I_R	V _R = V _{RRM} , T _{VJ} = 25°C			0.5 mA
	T _{VJ} = 125°C		0.75	1 mA
V_F	I _F = 30 A, T _{VJ} = 25°C			2.7 V
V_{T0}	For power-loss calculations only			1.3 V
r_T	T _{VJ} = 150°C			15 mΩ
I_{RM}	I _F = 50 A, -di _F /dt = 100 A/μs, V _R = 100 V		8	12 A
t_{rr}	I _F = 1 A, -di _F /dt = 100 A/μs, V _R = 30 V		40	60 ns
R_{thJC}				0.9 K/W
R_{thCH}			0.3	K/W
R₂₅	T _{VJ} = 25°C	4.75	5.0	5.25 kΩ
R_{25/50}			3375	K

Dimensions in mm
(1 mm = 0.0394")



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