



Three Phase Rectifier Bridge Module

Features

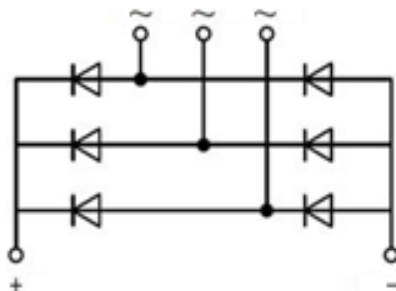
- Low forward voltage and leakage current
- Low inductance package
- High surge current capability

Product Summary

Parameter	Value	Unit
V_{RRM}	2000	V
$I_D(@ T_C = 100^\circ\text{C})$	50	A
$I_{FSM}(@ t_p = 10\text{ms})$	500	A
$V_{FM}(\text{Max})$	1.40	V

Applications

- Field supply for DC motors
- Line rectifiers for transistorized AC motor controllers
- Non-controllable rectifiers for AC/DC converter



Absolute Maximum Ratings (@ $T_C = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Conditions	Symbol	Values	Unit
Repetitive peak reverse voltage	$T_{vj} = 25^\circ\text{C}$	V_{RRM}	2000	V
Non-repetitive peak reverse voltage	$T_{vj} = 25^\circ\text{C}$	V_{RSM}	2100	V
Average forward current	$T_C = 100^\circ\text{C}$	I_D	50	A
Forward surge current	1/2 cycle, Sine wave, 50Hz $T_{vj} = 25^\circ\text{C}$	I_{FSM}	500	A
I^2t value for fusing		I^2t	1250	A^2s
RMS isolation voltage	A.C 50Hz(1s/1min)	V_{ISO}	3600/3000	V
Junction temperature range		T_{vj}	-40 ~ +150	$^\circ\text{C}$
Storage temperature range		T_{stg}	-40 ~ +125	$^\circ\text{C}$

**Electrical Characteristics (@ $T_C = 25^\circ\text{C}$ unless otherwise specified)**

Parameter	Conditions	Symbol	Values			Unit
			Min.	Typ.	Max.	
Peak forward voltage	$I_F=50\text{A}$, $t_P=380\mu\text{s}$	V_{FM}		1.20	1.40	V
Reverse leakage current	$V_R = V_{RRM}$, $T_{vj} = 25^\circ\text{C}$	I_{RRM}			0.3	mA
	$V_R = V_{RRM}$, $T_{vj} = 150^\circ\text{C}$				5	mA
Threshold voltage	$T_{vj} = 150^\circ\text{C}$, for power loss calculation only	V_{TO}			0.92	V
Dynamic resistance		r_T			4.6	m Ω

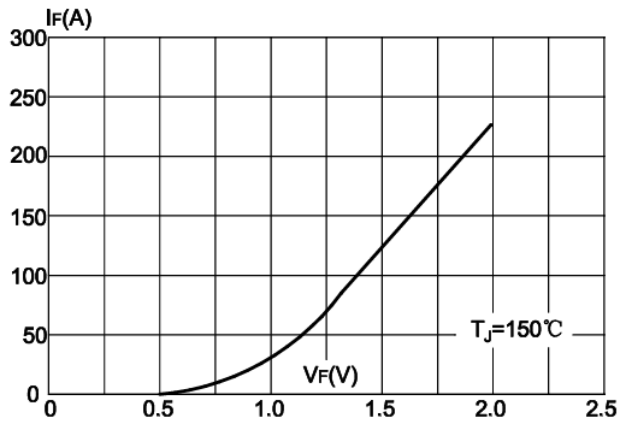
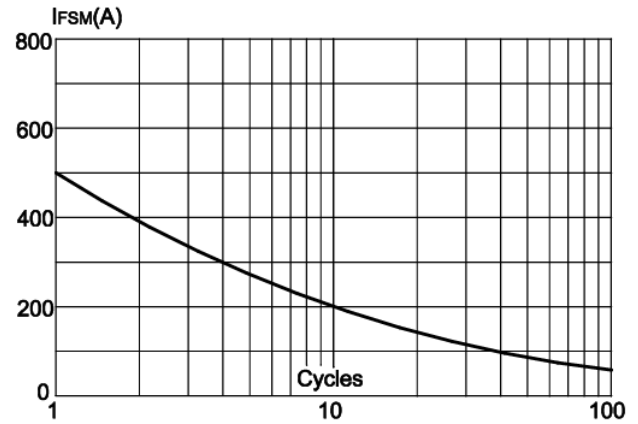
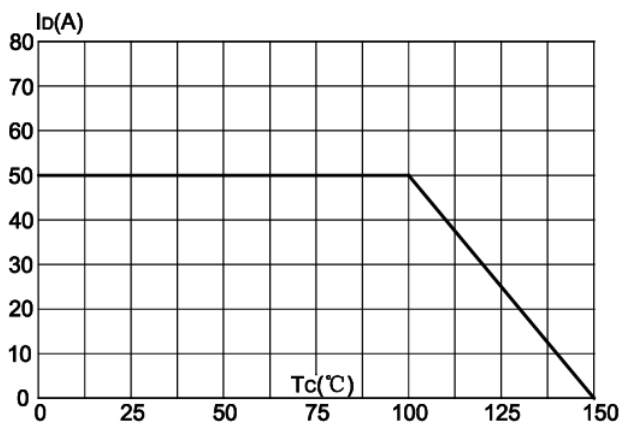
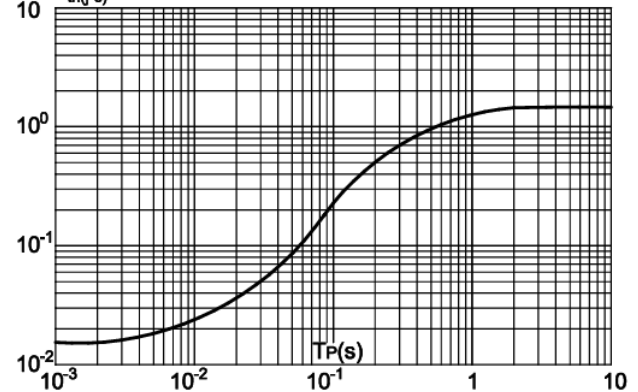
Thermal Characteristics (@ $T_C = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Conditions	Symbol	Values			Unit
			Min.	Typ.	Max.	
Thermal resistance, junction to case	per diode	$R_{th(j-c)}$			1.45	K/W
Thermal resistance, case to heatsink	per module	$R_{th(c-s)}$			0.07	K/W
Mounting torque	Module and heatsink fixed torque M5	M	4.25		5.75	N·m
	Electrode to terminal screw M5	M	4.25		5.75	N·m

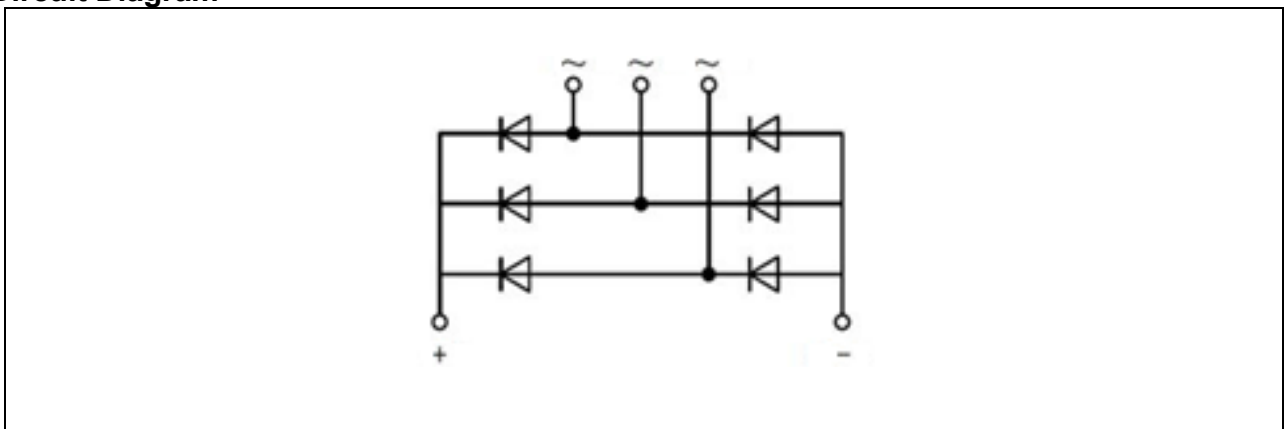
Ordering Information

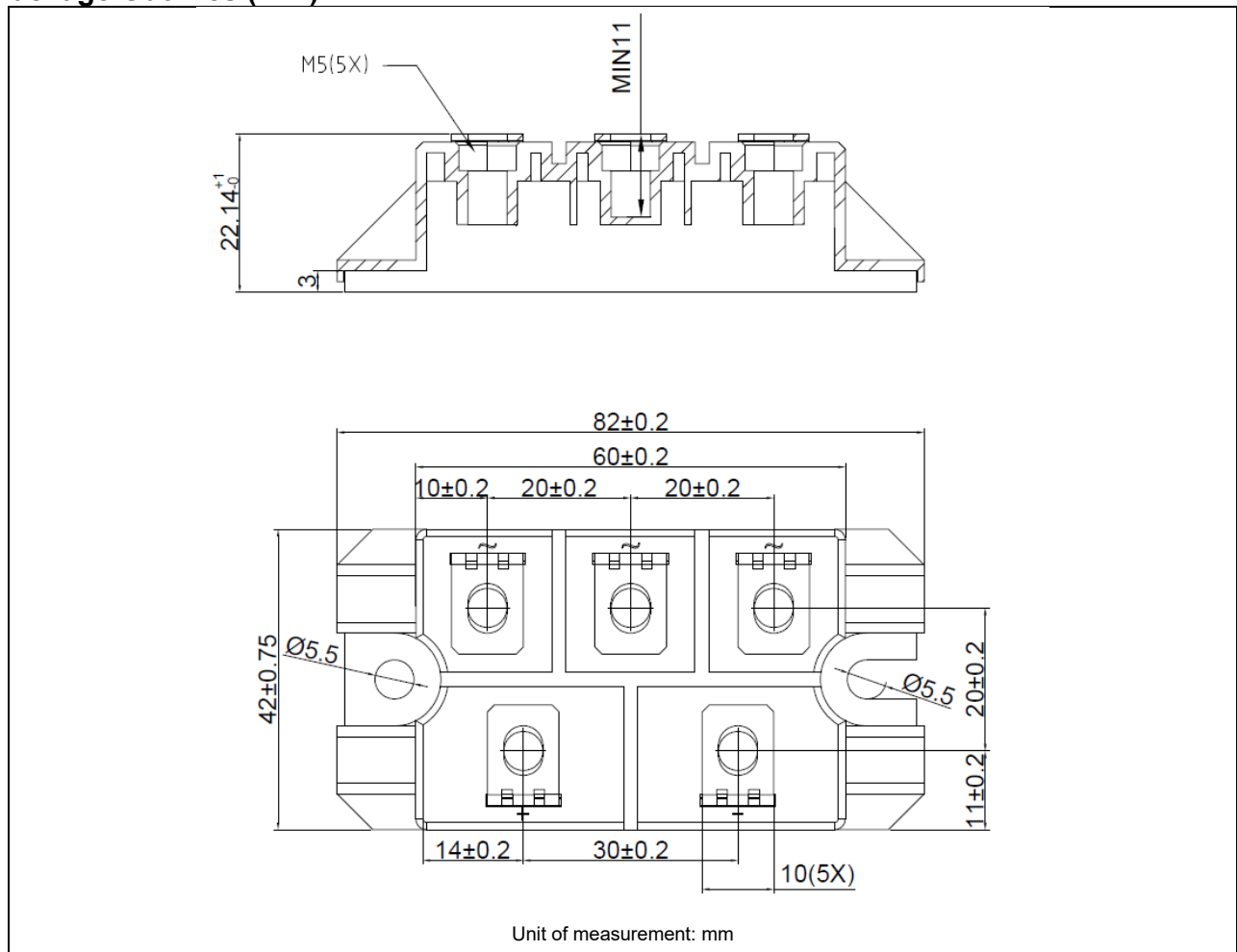
Device	Marking	Package	Weight	Inner Box	Per Carton
JMD50TD20D3	JMD50TD20D3	D3	146g/PCS	10PCS	90PCS

Typical Electrical & Thermal Characteristics

FIG.1: Forward characteristics(per diode)

FIG.2: Peak on-state surge current

FIG.3: Forward current vs. case temperature

FIG.4: Maximum transient thermal impedance
 $R_{th(j-c)}$ ($^\circ\text{C/W}$) Junction-to-case(per diode)


Circuit Diagram



Package Outlines (mm)




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