



JMD120MD18T1A

Diode Module

Features

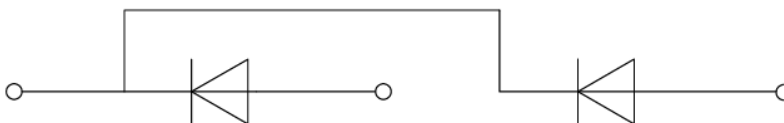
- A package of series of two diodes
- Heat transfer through alumina ceramic and metal substrate
- Welding by vacuum welding technology, which provide high reliability

Product Summary

Parameter	Value	Unit
V_{RRM}	1800	V
$I_{F(AV)}(@ T_C = 100^{\circ}C)$	120	A
$I_{FSM}(@ t_p = 10ms)$	3300	A
$V_F(Max)$	1.60	V

Applications

- AC converter
- Inverter
- DC motor



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

Parameter	Conditions	Symbol	Values	Unit
Repetitive peak reverse voltage	$T_{vj} = 25^{\circ}C$	V_{RRM}	1800	V
Non-repetitive peak reverse voltage	$T_{vj} = 25^{\circ}C$	V_{RSM}	1900	V
Average forward current	$T_C = 100^{\circ}C$	$I_{F(AV)}$	120	A
Forward surge current	1/2 cycle, Sine wave, 50Hz	I_{FSM}	3300	A
I^2t value for fusing	$T_{vj} = 25^{\circ}C$	I^2t	54450	A^2s
RMS isolation voltage	A.C 50Hz(1s/1min)	V_{ISO}	3600/3000	V
Junction temperature range		T_J	-40 ~ +150	$^{\circ}C$
Storage temperature range		T_{stg}	-40 ~ +125	$^{\circ}C$

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

Parameter	Conditions	Symbol	Values			Unit
			Min.	Typ.	Max.	
Peak forward voltage	$I_F=360\text{A}$, $t_P=380\mu\text{s}$	V_F			1.60	V
Reverse leakage current	$V_R = V_{RRM}$, $T_{vj} = 25^\circ\text{C}$	I_{RRM}			100	μA
	$V_R = V_{RRM}$, $T_{vj} = 150^\circ\text{C}$				40	mA
Threshold voltage	$T_{vj} = 150^\circ\text{C}$, for power loss calculation only	V_{TO}			0.81	V
Dynamic resistance		r_T			1.4	$\text{m}\Omega$

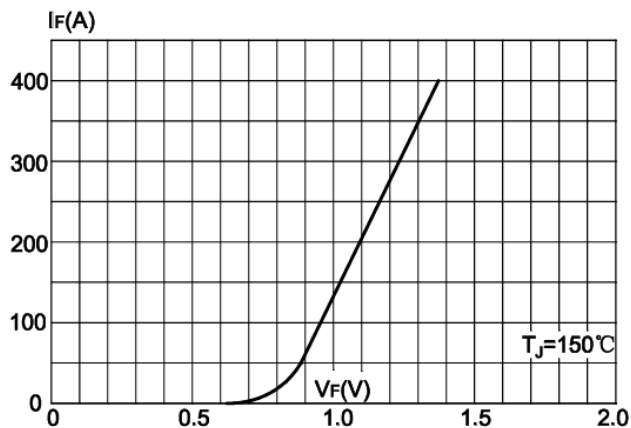
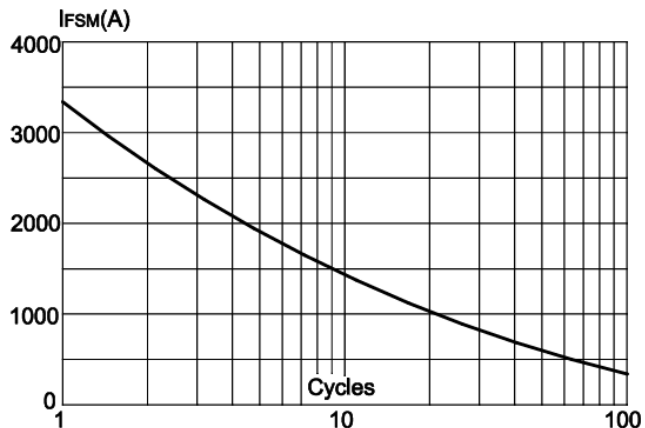
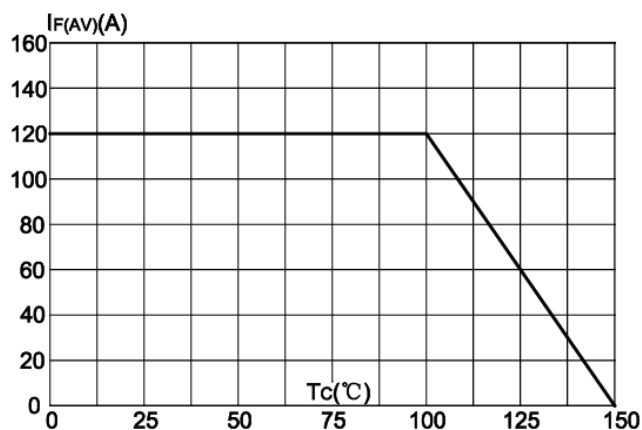
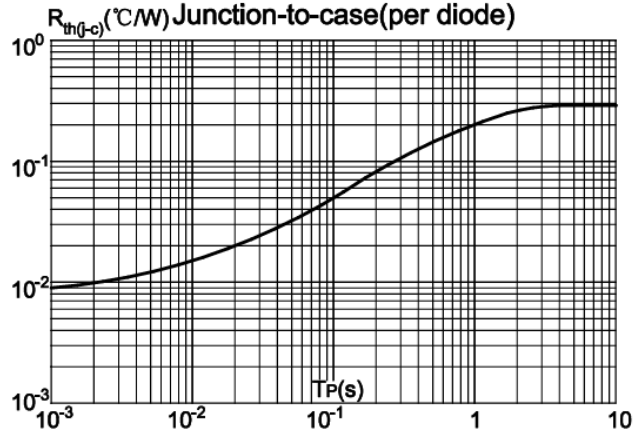
Thermal Characteristics (@ $T_C = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Conditions	Symbol	Values			Unit
			Min.	Typ.	Max.	
Thermal resistance, junction to case	per diode	$R_{th(j-c)}$		0.20		K/W
Thermal resistance, case to heatsink	per module	$R_{th(c-s)}$		0.12		K/W
Mounting torque	Module and heatsink fixed torque M5	M	4.25		5.75	N·m
	Electrode connection torque M5		2.55		3.45	N·m

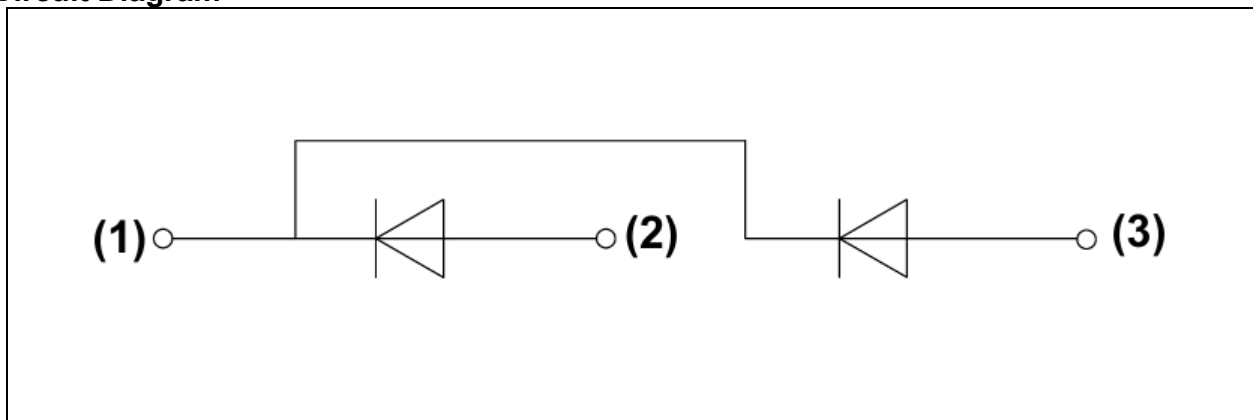
Ordering Information

Device	Marking	Package	Weight	Inner Box	Per Carton
JMD120MD18T1A	JMD120MD18T1A	T1A	100±5g/PCS	10 PCS	120 PCS

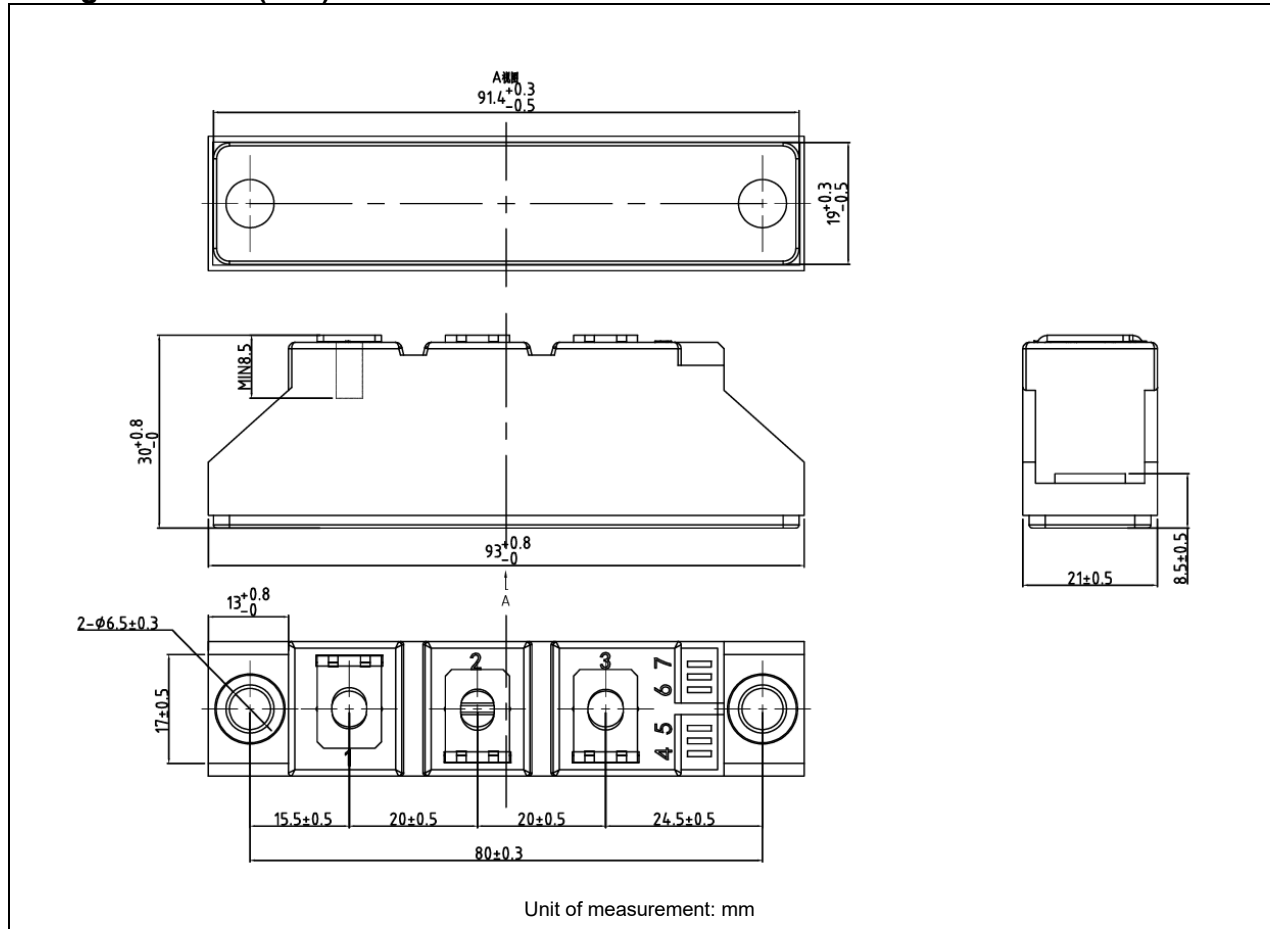
Typical Electrical & Thermal Characteristics

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


Circuit Diagram



Package Outlines (mm)





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