



## Diode Module

### Features

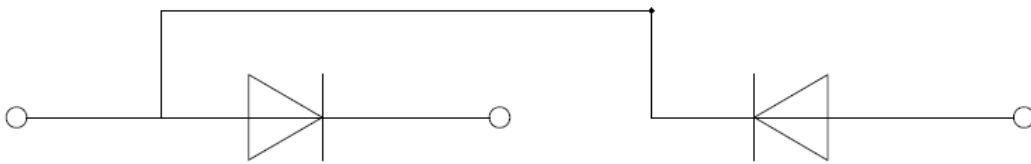
- A package of series of two diodes
- Heat transfer through alumina ceramic and metal substrate
- Welding by vacuum welding technology, which provide high reliability

### Product Summary

Parameter	Value	Unit
$V_{RRM}$	2000	V
$I_{F(AV)}$ (@ $T_C = 100^\circ\text{C}$ )	120	A
$I_{FSM}$ (@ $t_p = 10\text{ms}$ )	3360	A
$V_F(\text{Max})$	1.60	V

### Applications

- AC converter
- Inverter
- DC motor



### 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	$T_C = 100^\circ\text{C}$	$I_{F(AV)}$	120	A
Forward surge current	1/2 cycle, Sine wave, 50Hz	$I_{FSM}$	3360	A
$I^2t$ value for fusing	$T_{vj} = 25^\circ\text{C}$	$I^2t$	56400	$\text{A}^2\text{s}$
RMS isolation voltage	A.C 50Hz(1s/1min)	$V_{ISO}$	3600/3000	V
Junction temperature range		$T_J$	-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	$I_F=360\text{A}$ , $t_P=380\mu\text{s}$	$V_F$			1.60	V
Reverse leakage current	$V_R = V_{RRM}$ , $T_{vj} = 25^\circ\text{C}$	$I_{RRM}$			100	$\mu\text{A}$
	$V_R = V_{RRM}$ , $T_{vj} = 150^\circ\text{C}$				40	mA
Threshold voltage	$T_{vj} = 150^\circ\text{C}$ , for power loss calculation only	$V_{TO}$			0.85	V
Dynamic resistance		$r_T$			1.5	$\text{m}\Omega$

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

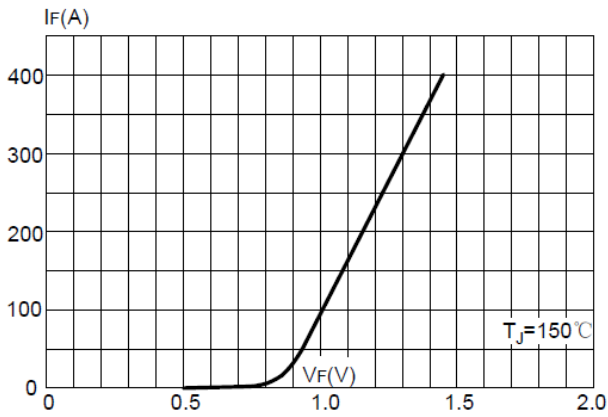
Parameter	Conditions	Symbol	Values			Unit
			Min.	Typ.	Max.	
Thermal resistance, junction to case	per diode	$R_{th(j-c)}$		0.20		$^\circ\text{C}/\text{W}$
Thermal resistance, case to heatsink	per diode	$R_{th(c-s)}$		0.12		$^\circ\text{C}/\text{W}$
Mounting torque	Module and heatsink fixed torque	M	4.25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

**Ordering Information**

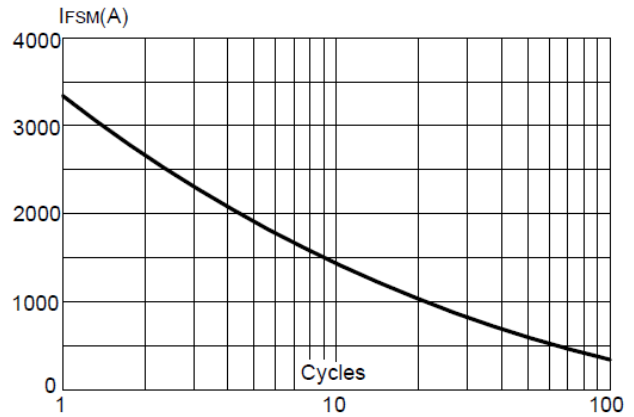
Device	Marking	Package	Weight	Inner Box	Pre Carton
JMD120KD20T1W	JMD120KD20T1W	T1	100±5g/PCS	10 PCS	120 PCS

**Typical Electrical & Thermal Characteristics**

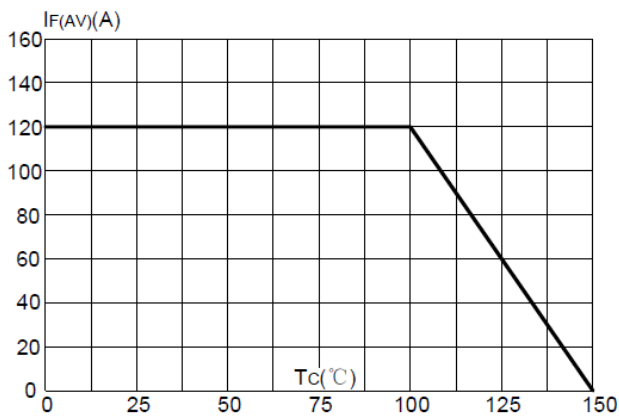
**FIG.1:** Forward characteristics(per diode)



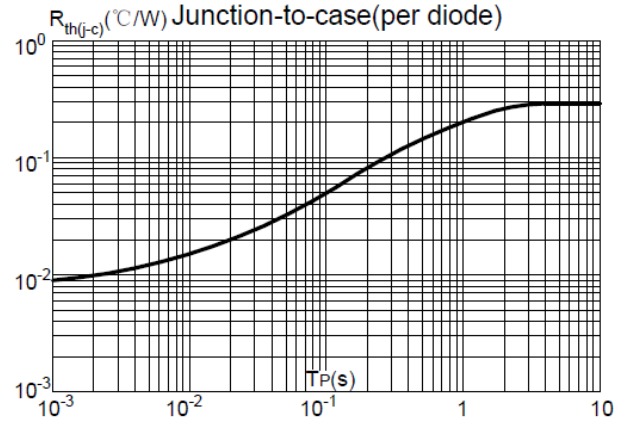
**FIG.2:** Peak on-state surge current



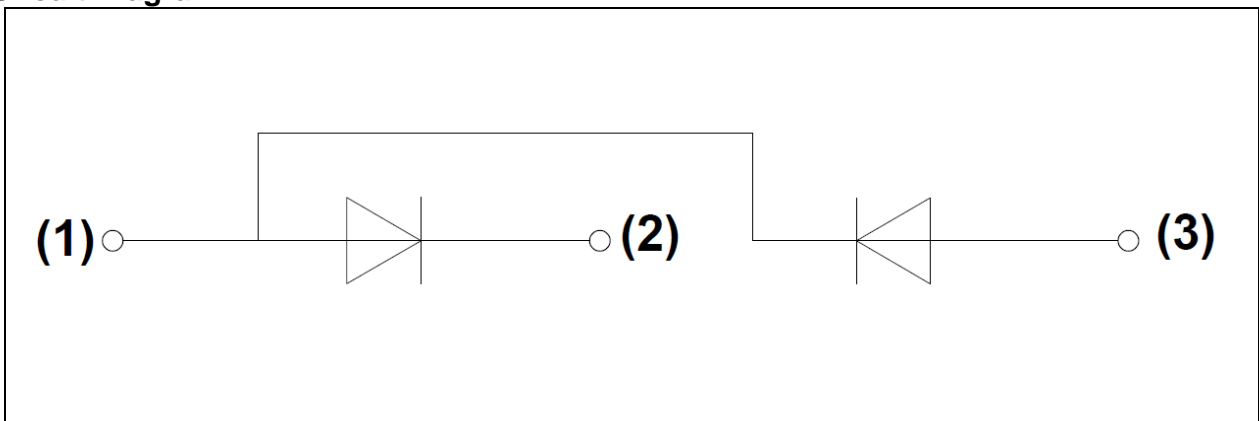
**FIG.3:** Forward current vs. case temperature



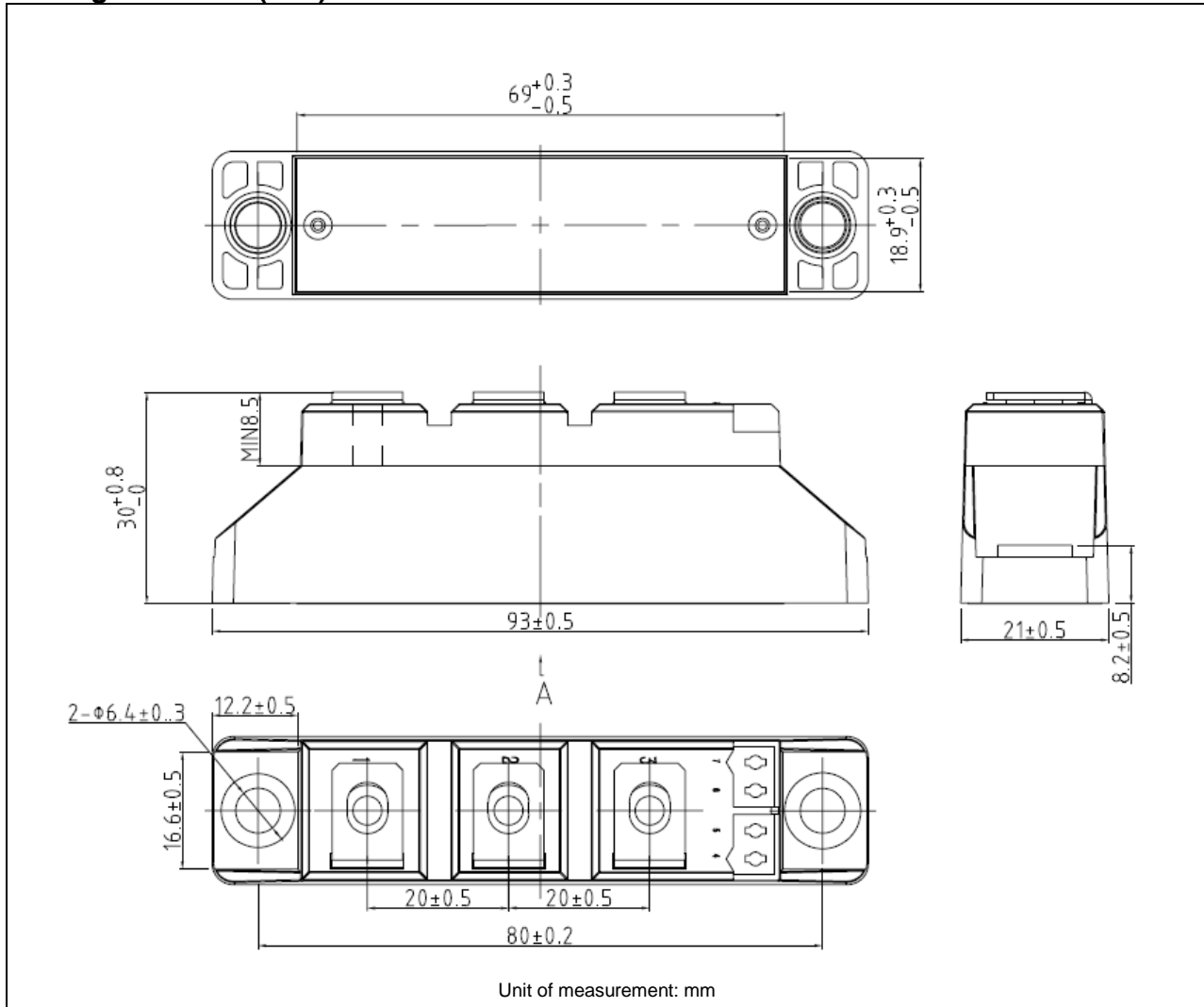
**FIG.4:** Maximum transient thermal impedance



**Circuit Diagram**




Package Outlines (mm)





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