



Diode Module

Features

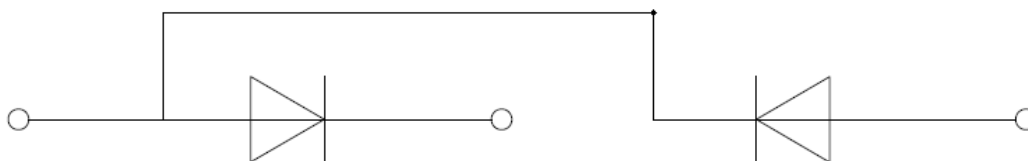
- A package of series of two diodes
- Heat transfer through alumina ceramic and metal substrate
- Welding by vacuum welding technology, which provide high reliability

Product Summary

Parameter	Value	Unit
V_{RRM}	1600	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}	1600	V
Non-repetitive peak reverse voltage	$T_{vj} = 25^{\circ}\text{C}$	V_{RSM}	1700	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	A^2s
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	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}			0.85	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	Per Carton
JMD120KD16T1W	JMD120KD16T1W	T1	100±5g/PCS	10 PCS	120 PCS

Typical Electrical & Thermal Characteristics

FIG.1: Forward characteristics(per diode)

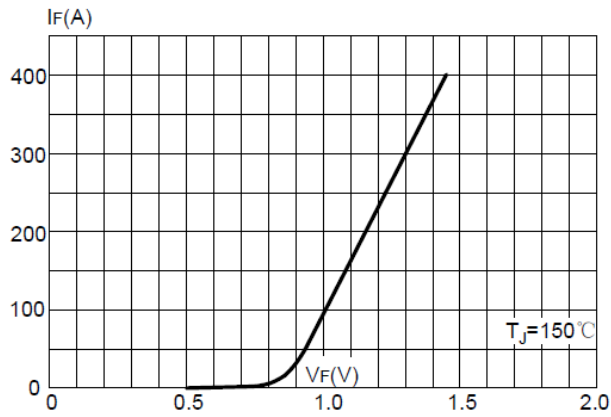


FIG.2: Peak on-state surge current

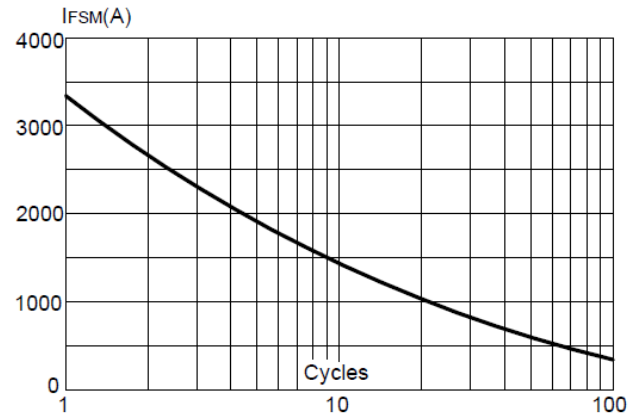


FIG.3: Forward current vs. case temperature

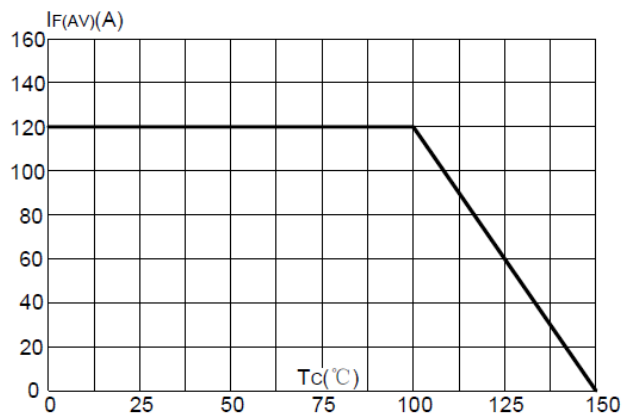
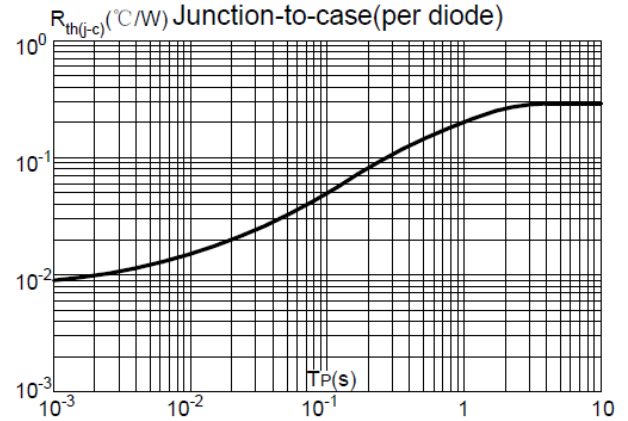
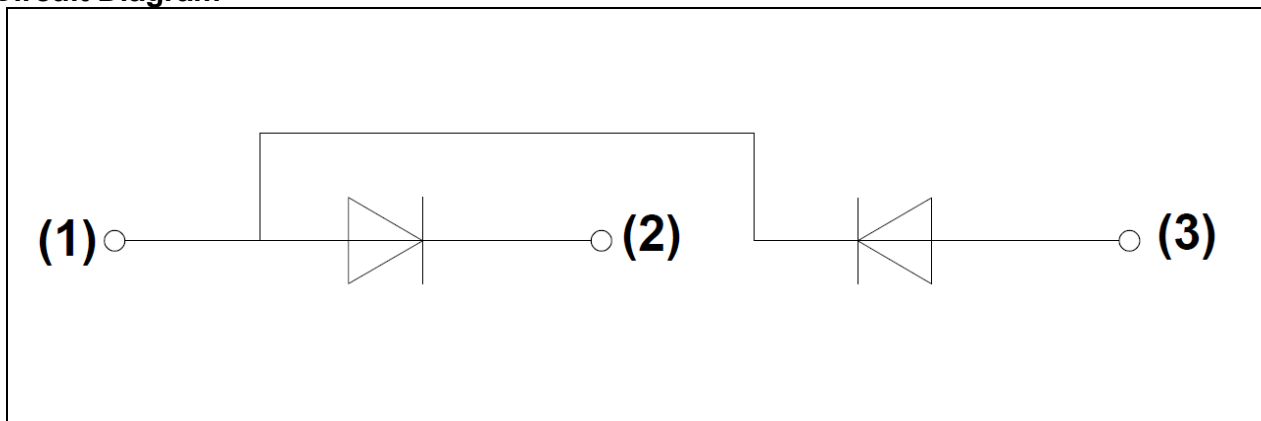
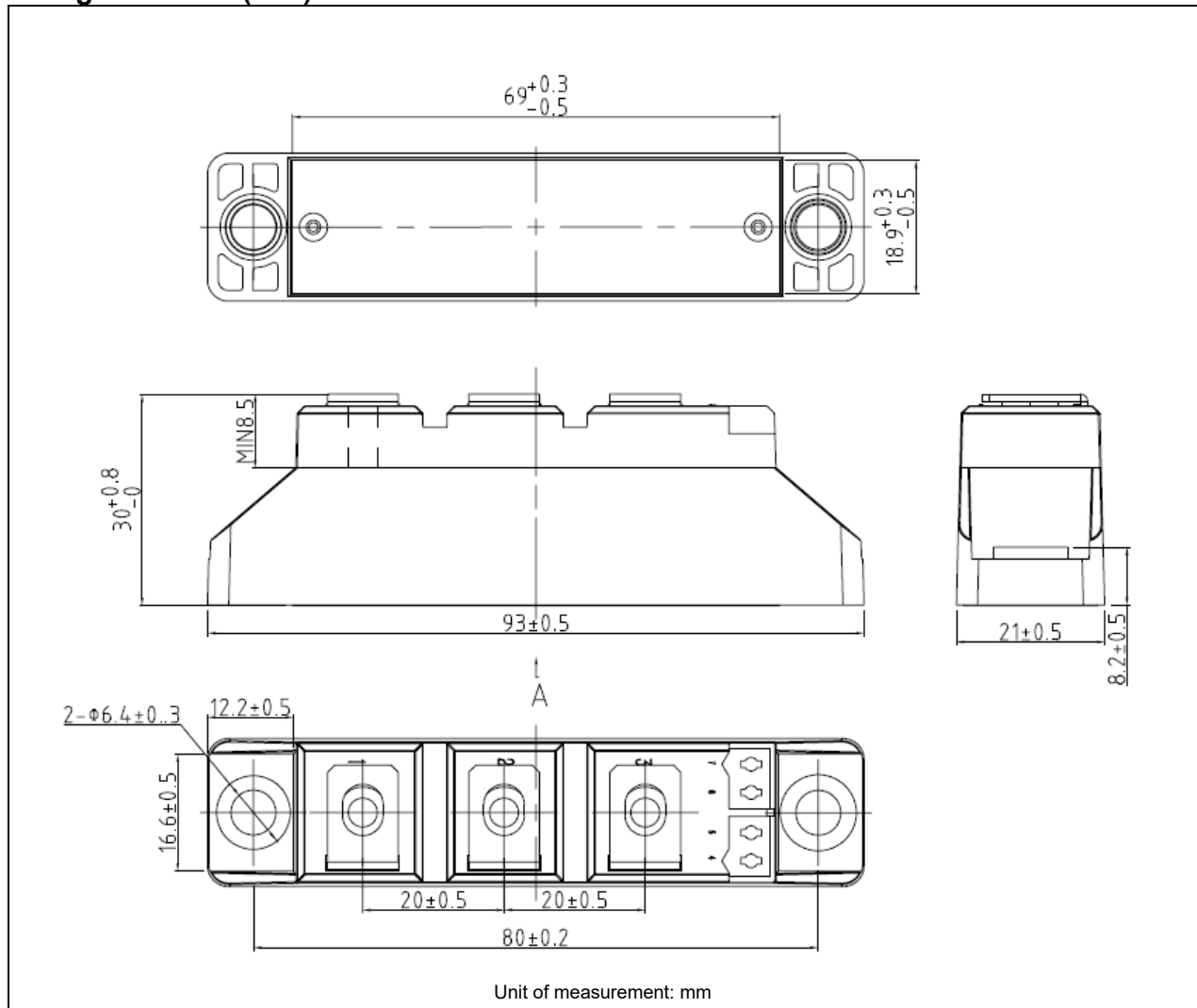


FIG.4: Maximum transient thermal impedance



Circuit Diagram



Package Outlines (mm)




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