JMD40KE18T1A

Diode Module

Features

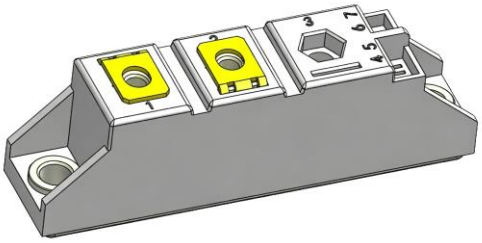
- A package of series of one diode
- Heat transfer through alumina ceramic and metal substrate
- Welding by vacuum welding technology, which provide high reliability

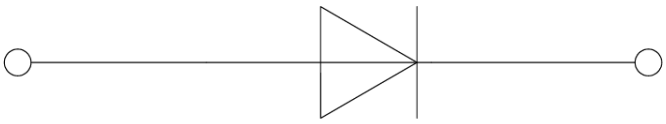
Product Summary

Parameter	Value	Unit
V_{RRM}	1800	V
$I_{F(AV)}$(@ T_C = 100℃)	40	A
I_{FSM}(@ t_P = 10ms)	900	A
V_F(Max)	1.60	V

Applications

- AC converter
- Inverter
- DC motor





Absolute Maximum Ratings (@ T_C = 25°C unless otherwise specified)

Parameter	Conditions	Symbol	Values	Unit
Repetitive peak reverse voltage	T_{vj} = 25°C	V_{RRM}	1800	V
Non-repetitive peak reverse voltage	T_{vj} = 25°C	V_{RSM}	1900	V
Average forward current	T_C = 100°C	$I_{F(AV)}$	40	A
Forward surge current	1/2 cycle, Sine wave, 50Hz T_{vj} = 25℃	I_{FSM}	900	A
I^2t value for fusing		I^2t	4050	A^2s
RMS isolation voltage	A.C 50Hz(1s/1min)	V_{ISO}	3600/3000	V
Junction temperature range		T_J	-40 ~ +150	℃
Storage temperature range		T_{stg}	-40 ~ +125	℃

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Electrical Characteristics (@ T_C = 25°C unless otherwise specified)

Parameter	Conditions	Symbol	Values			Unit
			Min.	Typ.	Max.	
Peak forward voltage	I_F=120A, t_P=380μs	V_F			1.60	V
Reverse leakage current	V_R = V_{RRM}, T_{vj} = 25℃	I_{RRM}			100	μA
	V_R = V_{RRM}, T_{vj} = 150℃				30	mA
Threshold voltage	T_{vj} = 150℃, for power loss calculation only	V_{TO}			0.85	V
Dynamic resistance		r_T			3.8	mΩ

Thermal Characteristics (@ T_C = 25°C unless otherwise specified)

Parameter	Conditions	Symbol	Values			Unit
			Min.	Typ.	Max.	
Thermal resistance, junction to case	per diode	$R_{th(j-c)}$		0.60		K/W
Thermal resistance, case to heatsink	per module	$R_{th(c-s)}$		0.20		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
JMD40KE18T1A	JMD40KE18T1A	T1A	100±5g/pcs	10 PCS	120 PCS

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Typical Electrical & Thermal Characteristics

FIG.1: Forward characteristics(per diode)

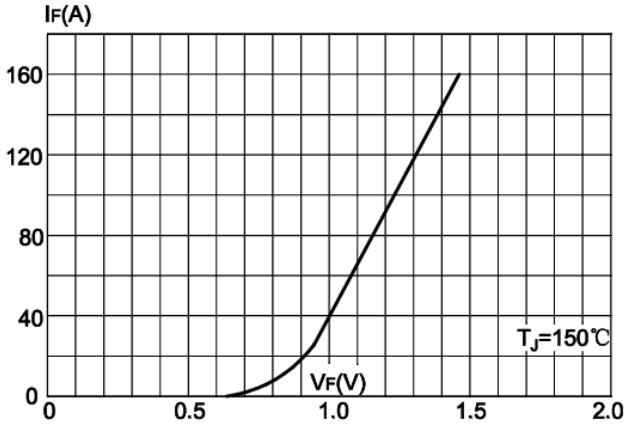


FIG.2: Peak on-state surge current

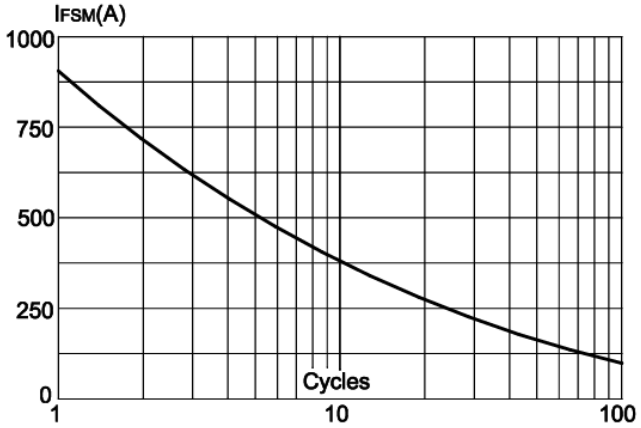


FIG.3: Forward current vs. case temperature

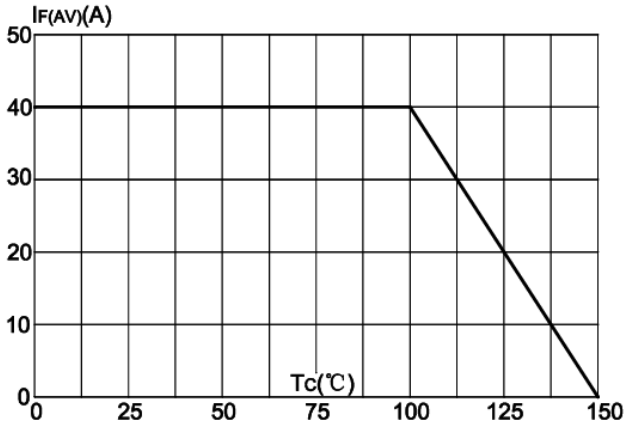
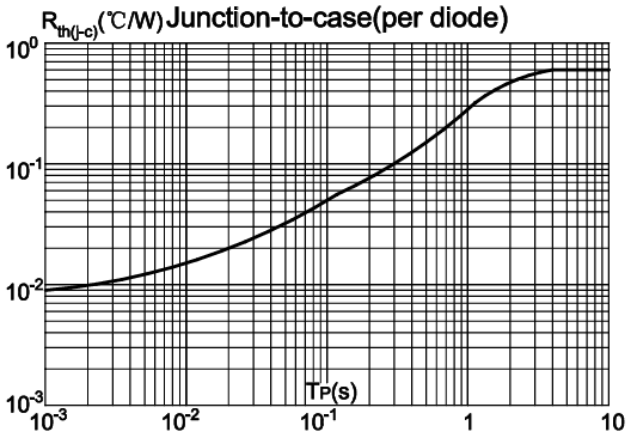
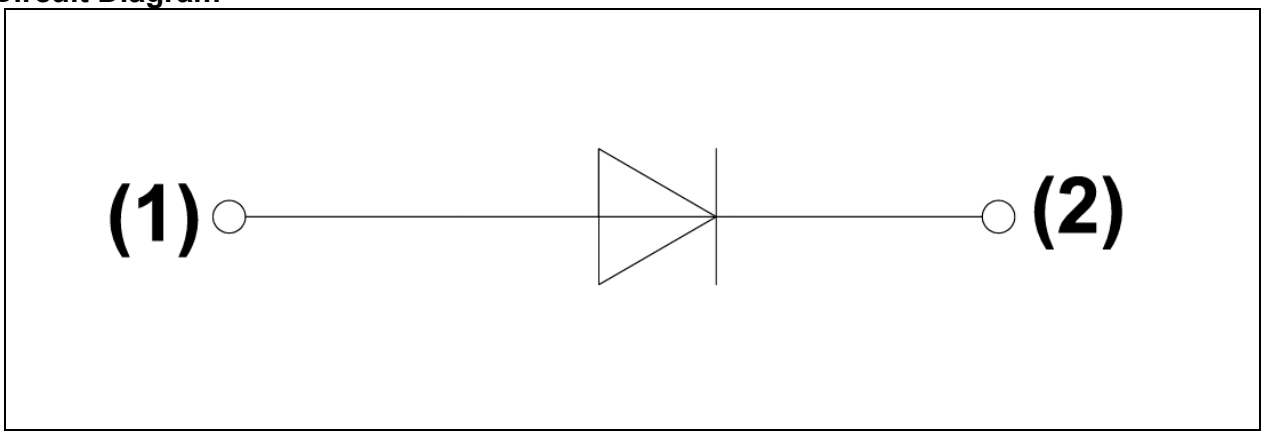


FIG.4: Maximum transient thermal impedance



Circuit Diagram



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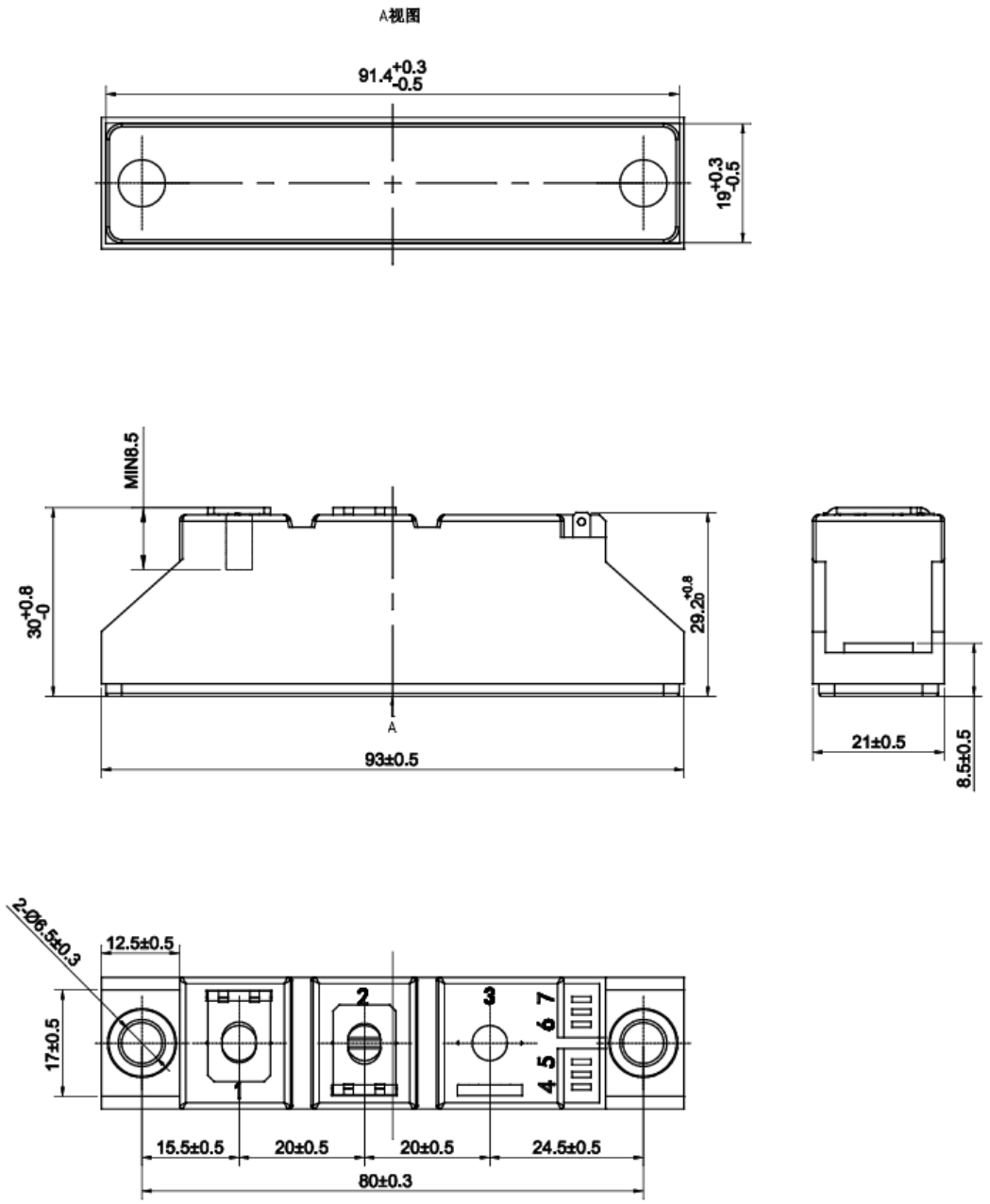
Package Outlines (mm)



Unit of measurement: mm

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