Diode Module

Rev.1.9 Aug.29 2024

JSKD/JSMD/JSND300

Description

1) A package of series of two diodes.
2) With high thermal conductivity DBC as the insulation.
3) Welding by vacuum welding technology, which provide high reliability.

Typical Application

AC converter, inverter and DC motor.

Absolute Maximum Ratings (Packaged into modules, unless otherwise specified, T_{CASE}=25℃)

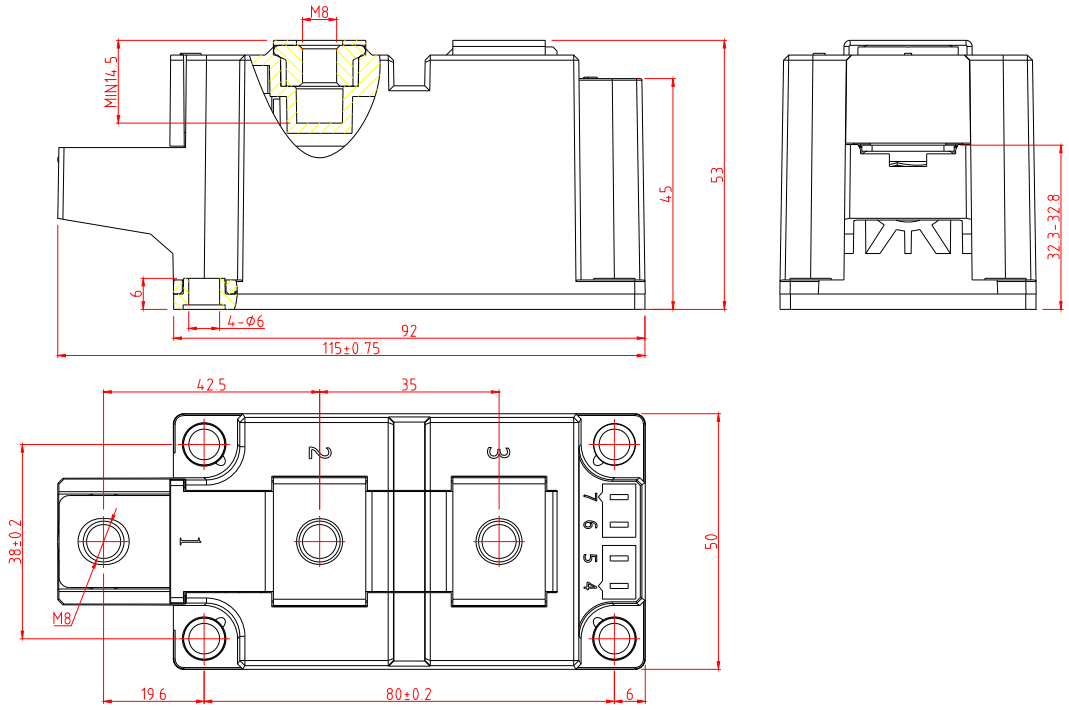
Parameter	Test Conditions	Symbol	Values				Unit
			12	16	18	20	
Operating junction temperature range		T_J	-40-150				℃
Storage temperature range		T_{STG}	-40-125				℃
Repetitive peak reverse voltage	T_J=25℃	V_{RRM}	1200	1600	1800	2000	V
Non-repetitive peak reverse voltage	T_J=25℃	V_{RSM}	1300	1700	1900	2100	V
Average forward current	T_C=100℃	$I_{F(AV)}$	300				A
Peak forward surge current	t_P=10ms, sin180°, T_J=25℃	I_{FSM}	11000				A
I^2t value for fusing		I^2t	605000				A^2s
Insulation voltage	A.C 50Hz(1s/1min)	V_{ISO}	3600/3000				V

Electrical Characteristics (Packaged into modules, unless otherwise specified, T_{CASE}=25℃)

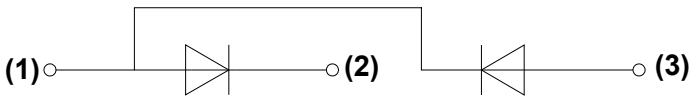
Parameter	Test Conditions	Symbol	Values	Unit
Peak forward voltage	I_F=900A, t_P=380μs	V_{FM}	≤1.6	V
Threshold voltage	T_J=150℃	V_{TO}	≤0.81	V
Dynamic resistance	T_J=150℃	R_d	≤0.75	mΩ
Repetitive peak reverse current	V_R=V_{RRM} T_J=25℃ T_J=150℃	 I_{RRM1} I_{RRM2}	 ≤100 ≤90	 μA mA
Thermal resistance(Per chip)	Junction to case Case to heatsink	$R_{th(j-c)}$ $R_{th(c-s)}$	0.13 0.05	℃/W

Mechanical Characteristics

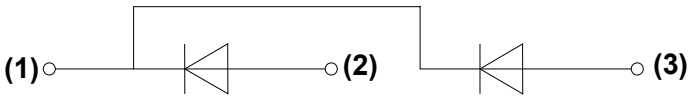
Module size	115mm×50mm
Module height	53mm
Terminal distance of (1) /(2) /(3)	42.5mm/35mm
Mounting torque(M5)	5±15%Nm
Terminal torque(M8)	9±15%Nm



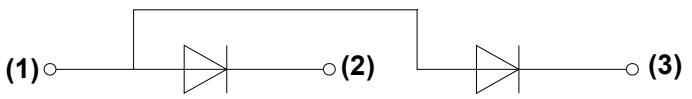
T3



JSKD symbol



JSMD symbol



JSND symbol

Instructions and Precautions

1) There is no severe vibration and shock in operating environment, and there should be no impurity and atmosphere which may corrode metal and damage the insulation in the air-dielectric.
2) The operating condition of the product can't out of range of the above parameters.
3) When the product is installed on the radiator, the radiator's surface should be confirmed flat, smooth, wipe clean with alcohol, and coated evenly with a layer of thermal grease which thickness is moderate on the contact surface between product and radiator. When the module is fastened on the surface of the radiator, the M5 or M6 screws and spring washers are used and fastened with 5NM torque. After the module is operated 1 hour, all screws must be refastened.
4) The connection with the main electrode of module can use copper, welding, socket and so on. The contact surface should be smooth and flat, which make good contact. While the connection with the control electrode of module is installed, attention should be paid to the corresponding connection of each pin. After the completion of the connection, do not plug and pull out the lead of the control electrode freely.

Ordering Information

JS KD 300 / 16

JieJie Semiconductor Co., Ltd

KD:Diode Module
MD:Common Cathode Diode Module
ND:Common Anode Diode Module

$I_{F(AV)}$=300A

12:V_{RSM}≥1300V
16:V_{RSM}≥1700V
18:V_{RSM}≥1900V
20:V_{RSM}≥2100V

Performance Curves

FIG.1: Forward characteristics(per diode)

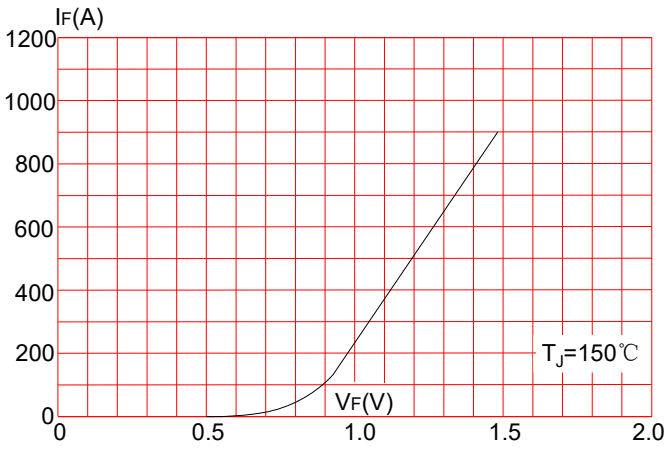


FIG.2: Peak on-state surge current

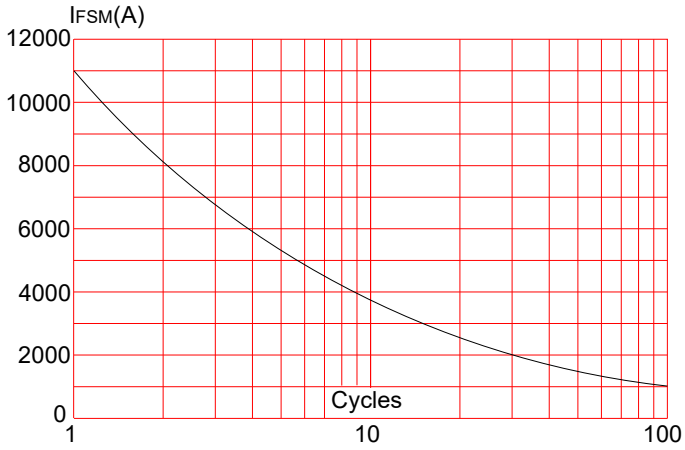


FIG.3: Forward current vs. case temperature

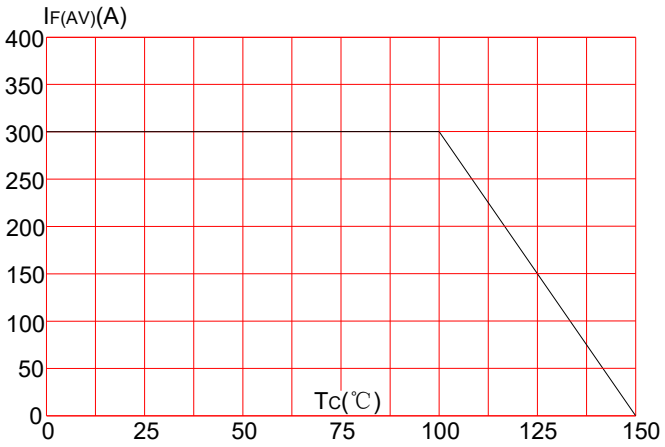


FIG.4: Maximum transient thermal impedance Junction-to-case(per diode)