产品规格书

Specifcation of products

产品名称:快恢复二极管

产品型号:MFK300U4-K2

浙江世菱半导体有限公司
ZHEJIANG SHILING SEMICONDUCTOR CO.,LTD.

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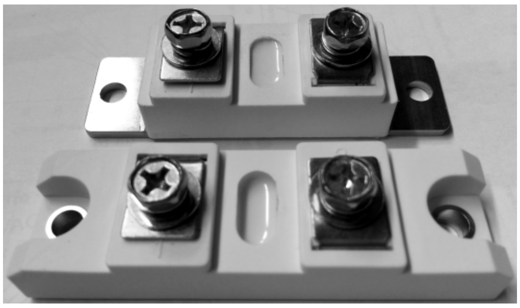
拟制	审核	核准
林益龙	曹剑龙	宗瑞

版本号：05　更新日期：2023.8

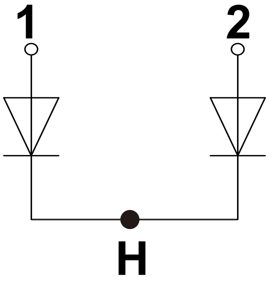
PRODUCT FEATURES

- Ultrafast Reverse Recovery Time
- Soft Reverse Recovery Characteristics
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Inductance Package



APPLICATIONS

- Inversion Welder
- Uninterruptible Power Supply (UPS)
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- Power Factor Correction (PFC) Circuit



ABSOLUTE MAXIMUM RATINGS

T_C=25℃ unless otherwise specified

Symbol	Parameter	Test Conditions	Values	Unit
V_R	Maximum D.C. Reverse Voltage		400	V
V_{RRM}	Maximum Repetitive Reverse Voltage		400	V
$I_{F(AV)}$	Average Forward Current	T_C=125℃, Per Diode	150	A
		T_C=125℃, Per Moudle	300	A
		T_C=125℃, 20KHz, Per Moudle	200	A
$I_{F(RMS)}$	RMS Forward Current	T_C=125℃, Per Diode	210	A
I_{FSM}	Non-Repetitive Surge Forward Current	1/2 Cycle , 50Hz, Sine	2000	A
		1/2 Cycle , 60Hz, Sine	2100	A
I^2t	I^2t (For Fusing)	T_J=45℃, t=10ms, 50Hz, Sine	20000	A^2s
		T_J=45℃, t=8.3ms, 60Hz, Sine	18300	A^2s
P_D	Power Dissipation		500	W
T_J	Junction Temperature		-40 to +150	℃
T_{STG}	Storage Temperature Range		-40 to +125	℃
Torque	Module-to-Sink	Recommended（M6）	3～4.7	N.m
Torque	Module Electrodes	Recommended（M6）	3～4.7	N.m
$R_{\theta JC}$	Thermal Resistance	Junction-to-Case, Per Diode	0.25	℃ /W
Weight			92	g

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{RM}	Reverse Leakage Current	V_R=400V	--	--	0,5	mA
		V_R=400V, T_J=125℃	--	--	1	mA
V_F	Forward Voltage	I_F=150A	--	1.20	1.45	V
		I_F=150A, T_J=125℃	--	1.10	--	V
t_{rr}	Reverse Recovery Time	I_F=1A, V_R=30V, di_F/dt=-200A/μs	--	53	--	ns
t_{rr}	Reverse Recovery Time	V_R=200V, I_F=150A di_F/dt=-200A/μs, T_J=25℃	--	95	--	ns
I_{RRM}	Max. Reverse Recovery Current		--	12	--	A
t_{rr}	Reverse Recovery Time	V_R=200V, I_F=150A di_F/dt=-200A/μs, T_J=125℃	--	165	--	ns
I_{RRM}	Max. Reverse Recovery Current		--	20	--	A

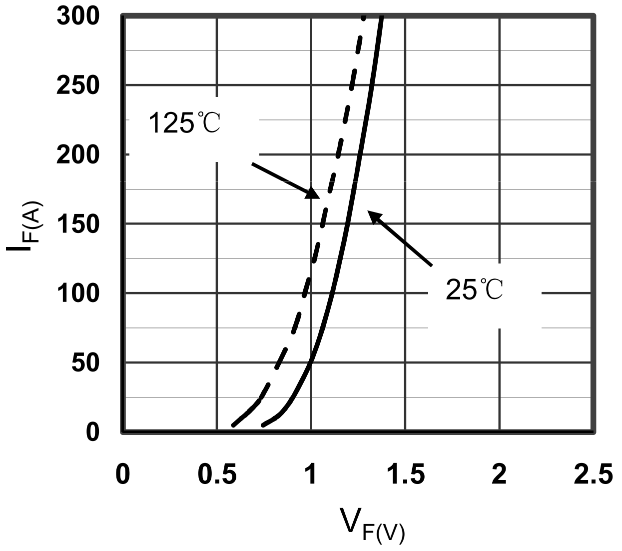


Figure1. Forward Voltage Drop vs Forward Current

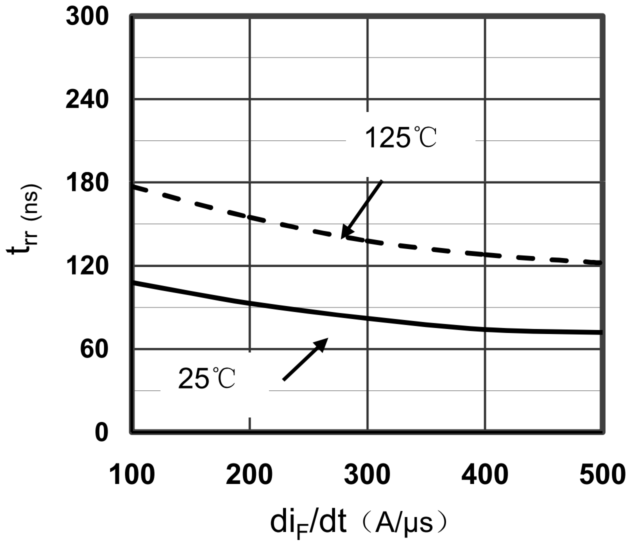


Figure2. Reverse Recovery Time vs diF/dt

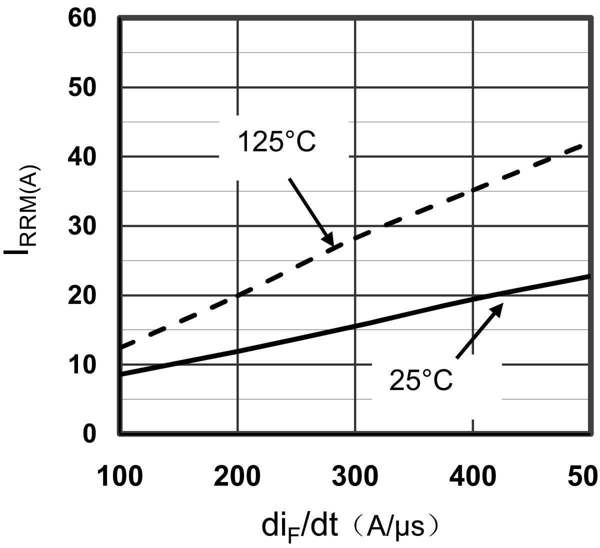


Figure3. Reverse Recovery Current vs diF/dt

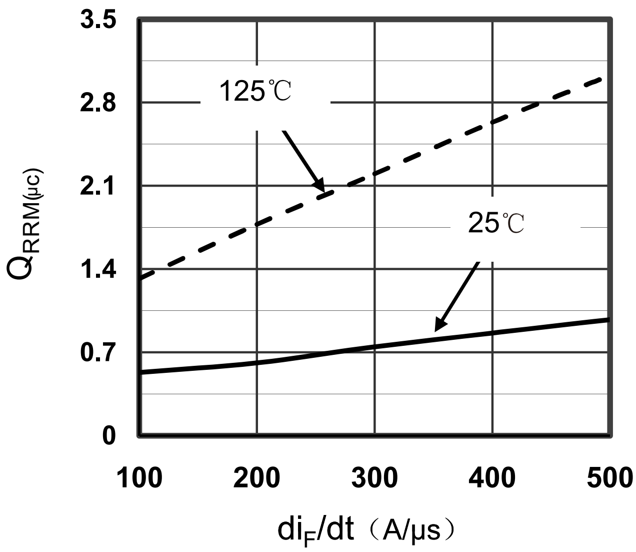


Figure4. Reverse Recovery Charge vs diF/dt

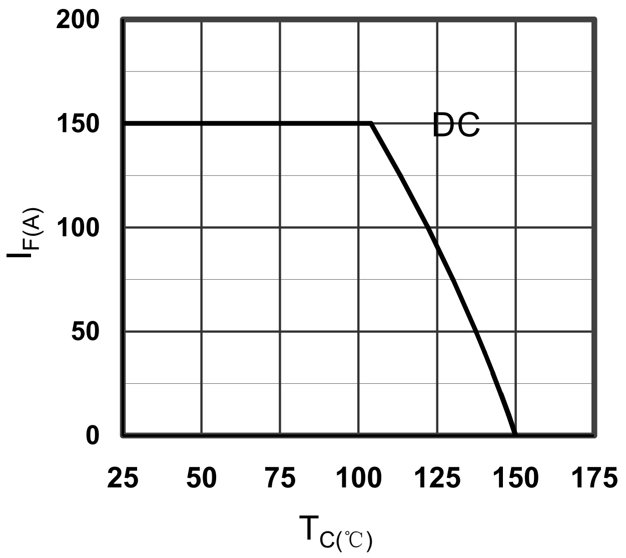


Figure5.Forward current vs.Case temperature

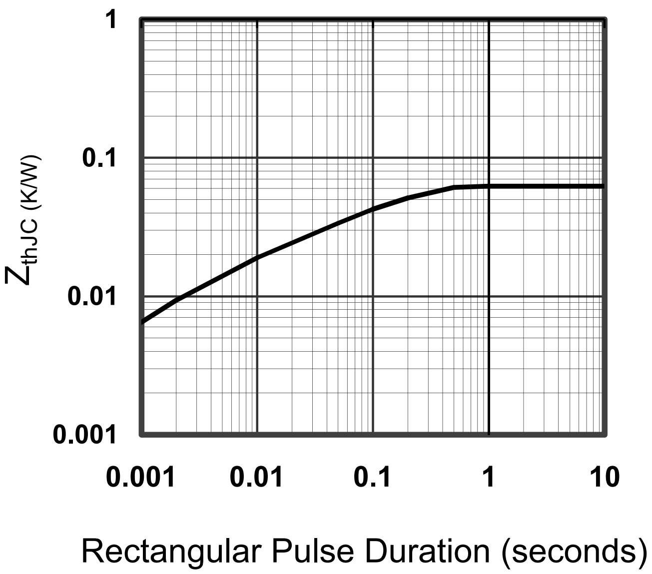
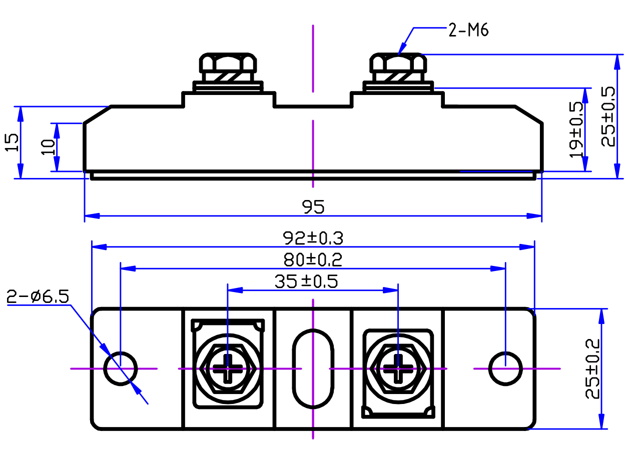
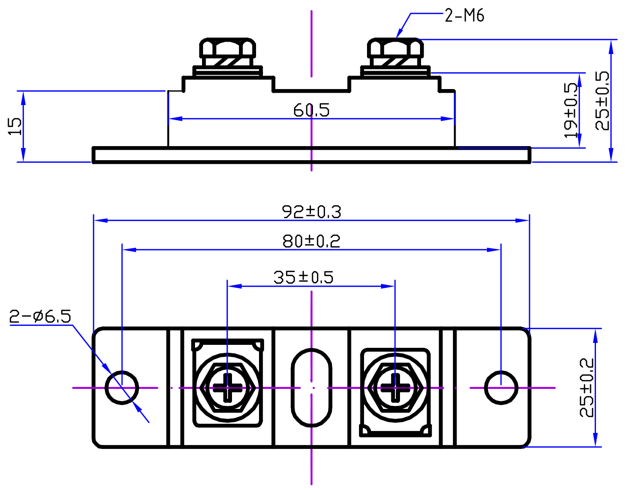


Figure6. Transient Thermal Impedance

Package Outlines

	
K2 (B)	K2

Unit:mm