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

产品规格书

Specifcation of products

产品名称:肖特基二极管

产品型号:MBDK600U45NK4

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

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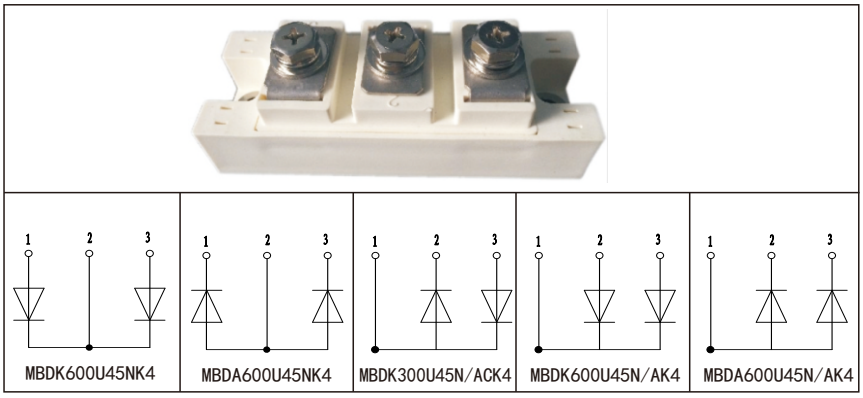
拟制	审核	核准
林益龙	曹剑龙	宗瑞

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		45	V
V_{RRM}	Maximum Repetitive Reverse Voltage		45	V
$I_{F(AV)}$	Average Forward Current	T_C=100℃, Per Diode	300	A
		T_C=100℃, Per Moudle	600	A
$I_{F(RMS)}$	RMS Forward Current	T_C=100℃, Per Diode	420	A
I_{FSM}	Non-Repetitive Surge Forward Current	1/2 Cycle , 60Hz, Sine	6600	A
I^2t	I^2t (For Fusing)	T_J=45℃, t=8.3ms, 60Hz, Sine	130050	A^2s
P_D	Power Dissipation		225	W
T_J	Junction Temperature		-40 to +150	℃
T_{STG}	Storage Temperature Range		-40 to +125	℃
V_{iso}	Insulation Test Voltage	AC, t=1min	3000	V
Torque	Module-to-Sink	Recommended（M6）	3～5	N.m
Torque	Module Electrodes	Recommended（M6）	3～5	N.m
$R_{\theta JC}$	Thermal Resistance	Junction-to-Case	0.12	℃ /W
Weight			155	g

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{RM}	Reverse Leakage Current	V_R= 45V	--	--	0.3	mA
		V_R= 45V, T_J=125℃	--	--	2	mA
V_F	Forward Voltage	I_F=300A	--	0.50	--	V
		I_F=300A, T_J=125℃	--	0.45	--	V

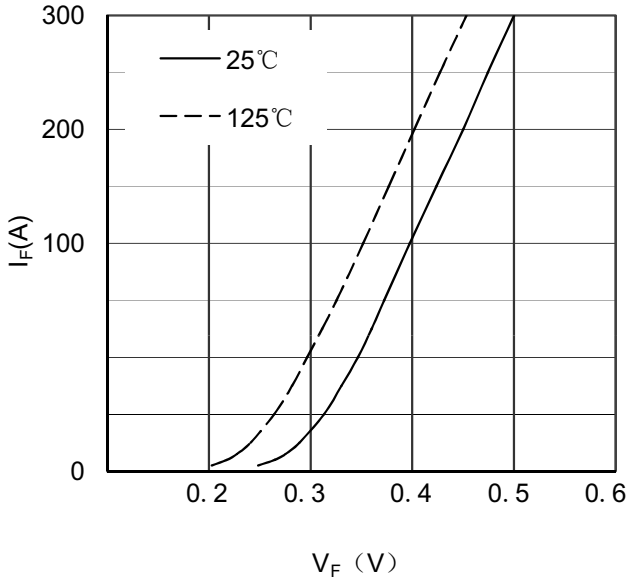


Figure 1. Forward Voltage Drop vs Forward Current

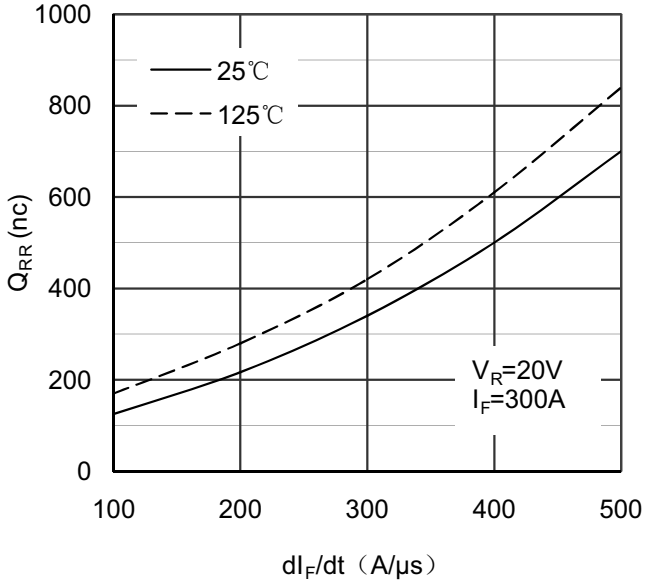


Figure 2. Reverse Recovery Charge vs dI_F/dt

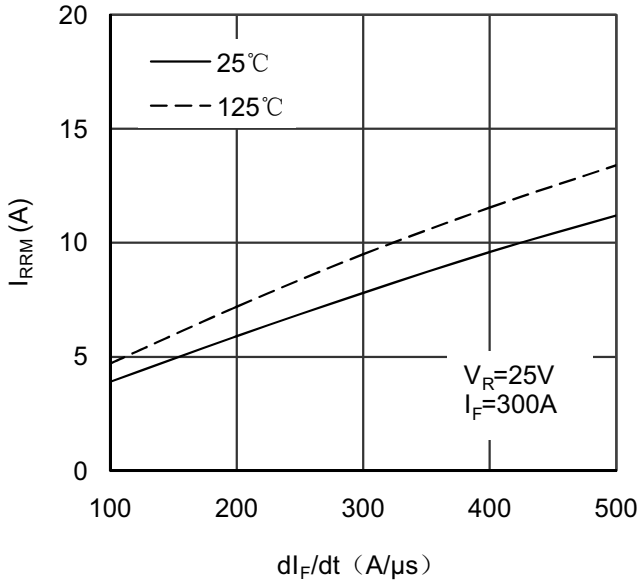


Figure 3. Reverse Recovery Current vs dI_F/dt-

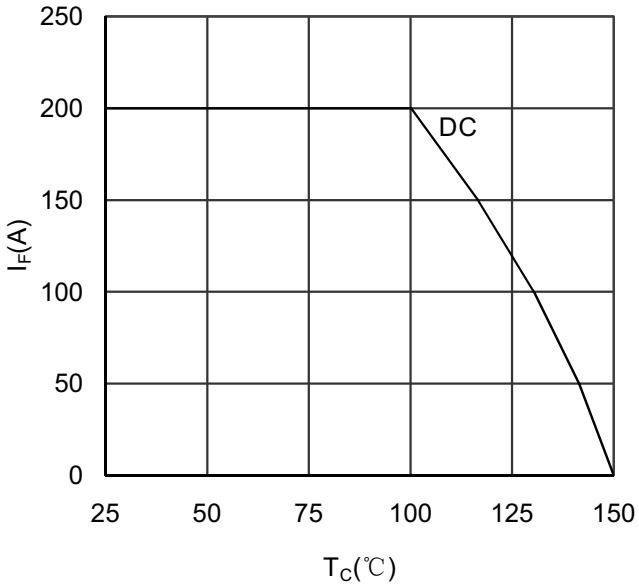


Figure 4. Forward current vs Case temperature

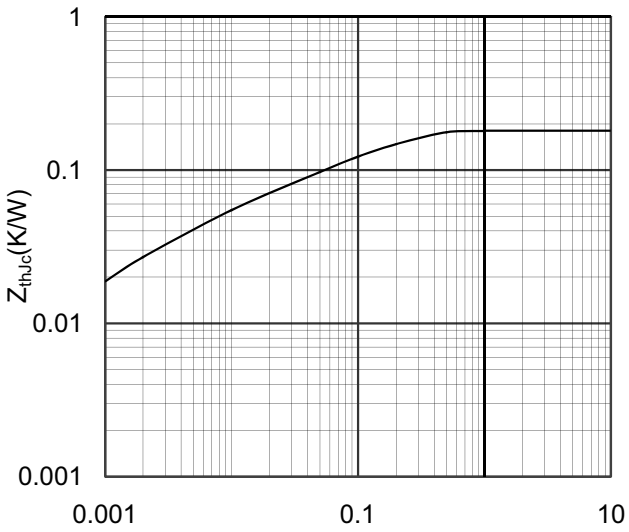
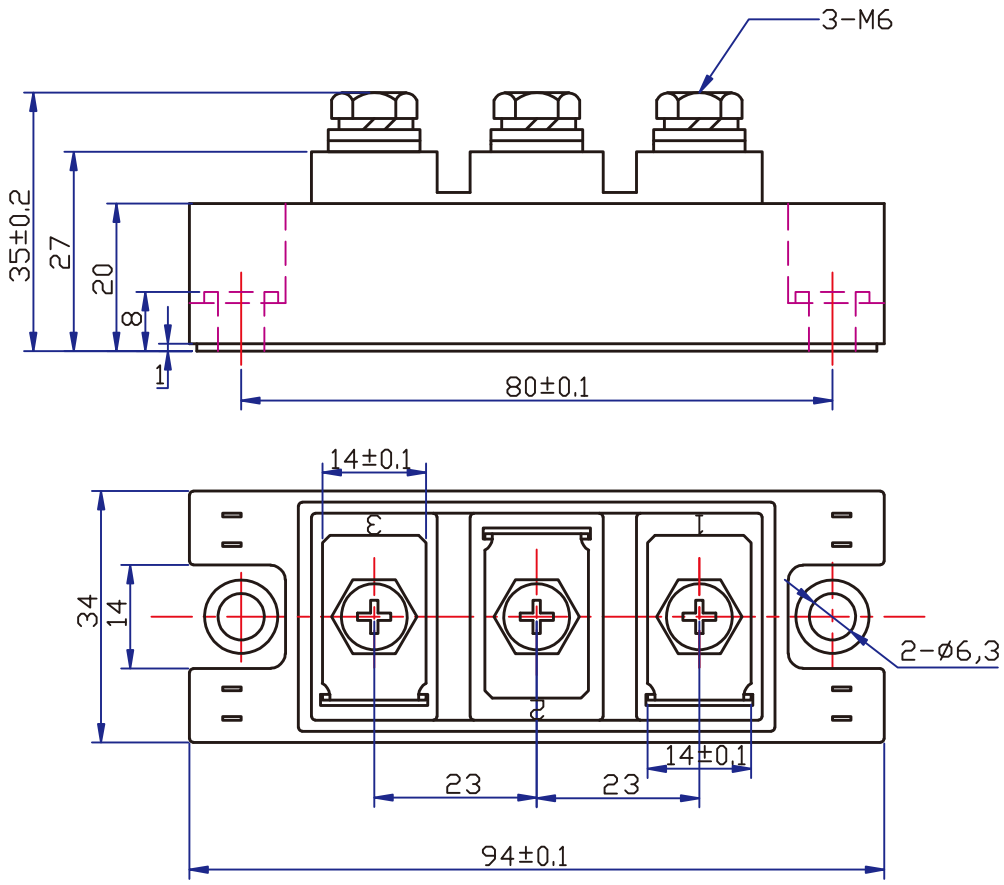


Figure 5. Transient Thermal Impedance

Package Outlines



Unit:mm