

## 产品规格书

### Specification of products

产品名称: 快恢复二极管

产品型号: MFDK150A300V-K3

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

地址: 浙江省 丽水市 莲都区

电话: (0578) 3012571 3615078

传真: (0578) 3611180

邮编: 323000

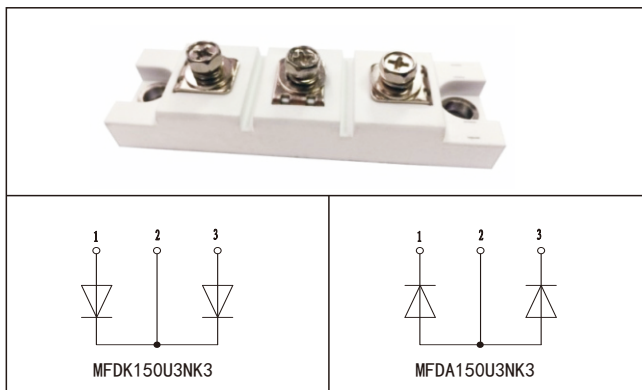
E-mail: smrshiling01@163.com

Http://www.smrshiling.com

拟制	审核	核准
林益龙	曹剑龙	宗瑞

### 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

$T_C=25^{\circ}\text{C}$  unless otherwise specified

Symbol	Parameter	Test Conditions	Values	Unit
$V_R$	Maximum D.C. Reverse Voltage		300	V
$V_{RRM}$	Maximum Repetitive Reverse Voltage		300	V
$I_{F(AV)}$	Average Forward Current	$T_C=110^{\circ}\text{C}$ , Per Diode	150	A
		$T_C=120^{\circ}\text{C}$ , 20KHz, Per Moudle	250	A
$I_{F(RMS)}$	RMS Forward Current	$T_C=110^{\circ}\text{C}$ , Per Diode	210	A
$I_{FSM}$	Non-Repetitive Surge Forward Current	$T_J=45^{\circ}\text{C}$ , $t=10\text{ms}$ , 50Hz, Sine	1500	A
		$T_J=45^{\circ}\text{C}$ , $t=8.3\text{ms}$ , 60Hz, Sine	1650	A
$I^2t$	$I^2t$ (For Fusing)	$T_J=45^{\circ}\text{C}$ , $t=10\text{ms}$ , 50Hz, Sine	11250	$\text{A}^2\text{s}$
		$T_J=45^{\circ}\text{C}$ , $t=8.3\text{ms}$ , 60Hz, Sine	11300	$\text{A}^2\text{s}$
$P_D$	Power Dissipation		216	W
$T_J$	Junction Temperature		-40 to +150	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature Range		-40 to +125	$^{\circ}\text{C}$
$V_{isol}$	Insulation Test Voltage	AC, $t=1\text{min}$	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	0.18	$^{\circ}\text{C} / \text{W}$
Weight			110	g

### ELECTRICAL CHARACTERISTICS

T<sub>C</sub>=25°C unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>RM</sub>	Reverse Leakage Current	V <sub>R</sub> =300V	--	--	0.3	mA
		V <sub>R</sub> =300V, T <sub>J</sub> =125°C	--	--	5	mA
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =150A	--	1.01	1.10	V
		I <sub>F</sub> =150A, T <sub>J</sub> =125°C	--	--	0.90	V
t <sub>rr</sub>	Reverse Recovery Time	I <sub>F</sub> =1A, V <sub>R</sub> =30V, di <sub>F</sub> /dt=-200A/μs	--	37	--	ns
t <sub>rr</sub>	Reverse Recovery Time	V <sub>R</sub> =300V, I <sub>F</sub> =200A	--	37	--	ns
I <sub>RRM</sub>	Max. Reverse Recovery Current	di <sub>F</sub> /dt=-200A/μs, T <sub>J</sub> =25°C	--	9	--	A
t <sub>rr</sub>	Reverse Recovery Time	V <sub>R</sub> =300V, I <sub>F</sub> =200A	--	93	--	ns
I <sub>RRM</sub>	Max. Reverse Recovery Current	di <sub>F</sub> /dt=-200A/μs, T <sub>J</sub> =125°C	--	20	--	A

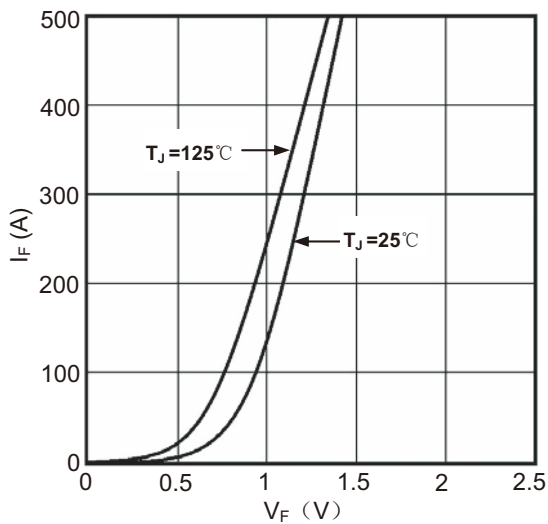


Figure1. Forward Voltage Drop vs Forward Current

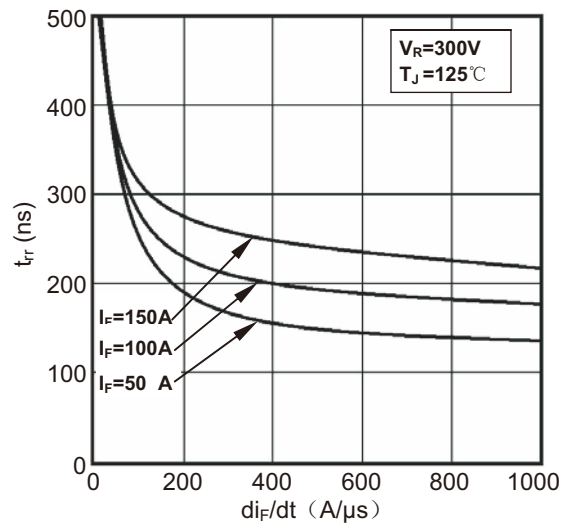


Figure2. Reverse Recovery Time vs di<sub>F</sub>/dt

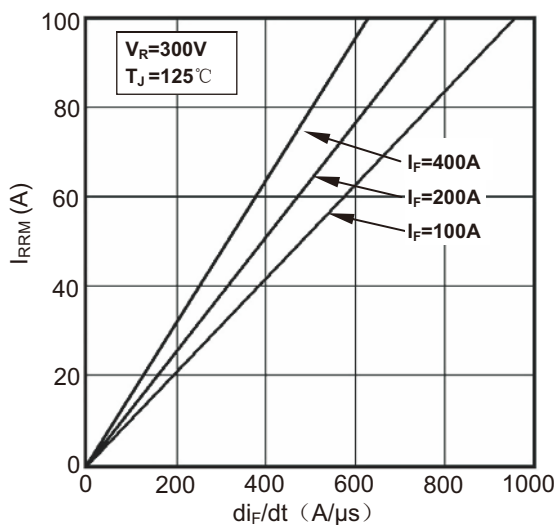


Figure3. Reverse Recovery Current vs di<sub>F</sub>/dt

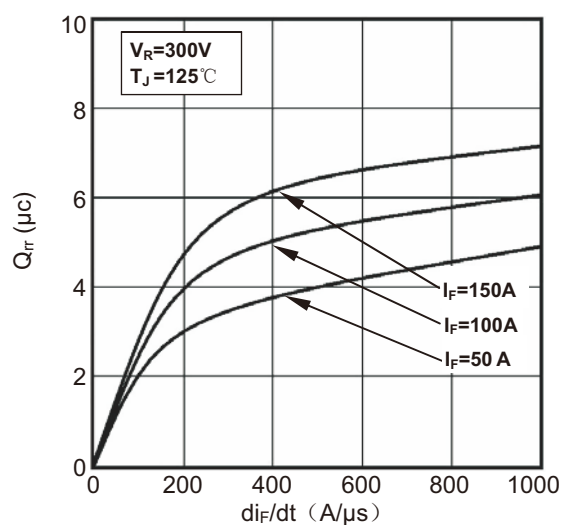


Figure4. Reverse Recovery Charge vs di<sub>F</sub>/dt

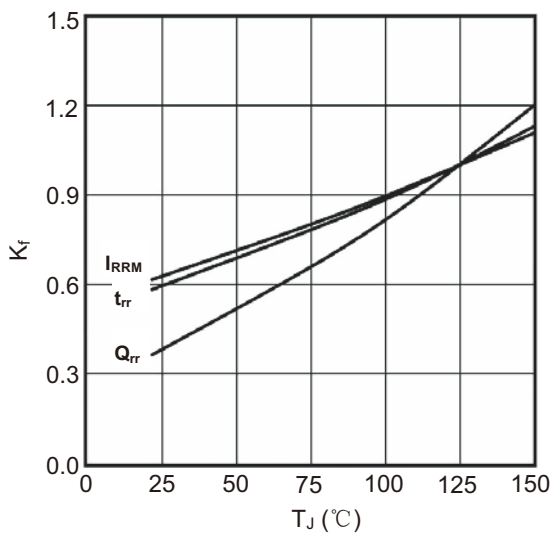


Figure5. Dynamic Parameters vs Junction Temperature

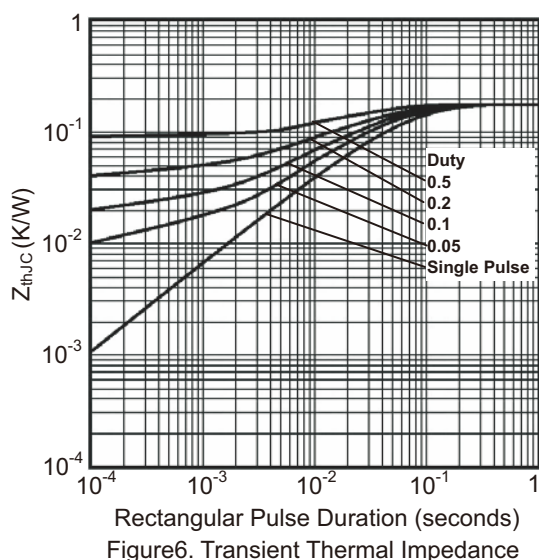
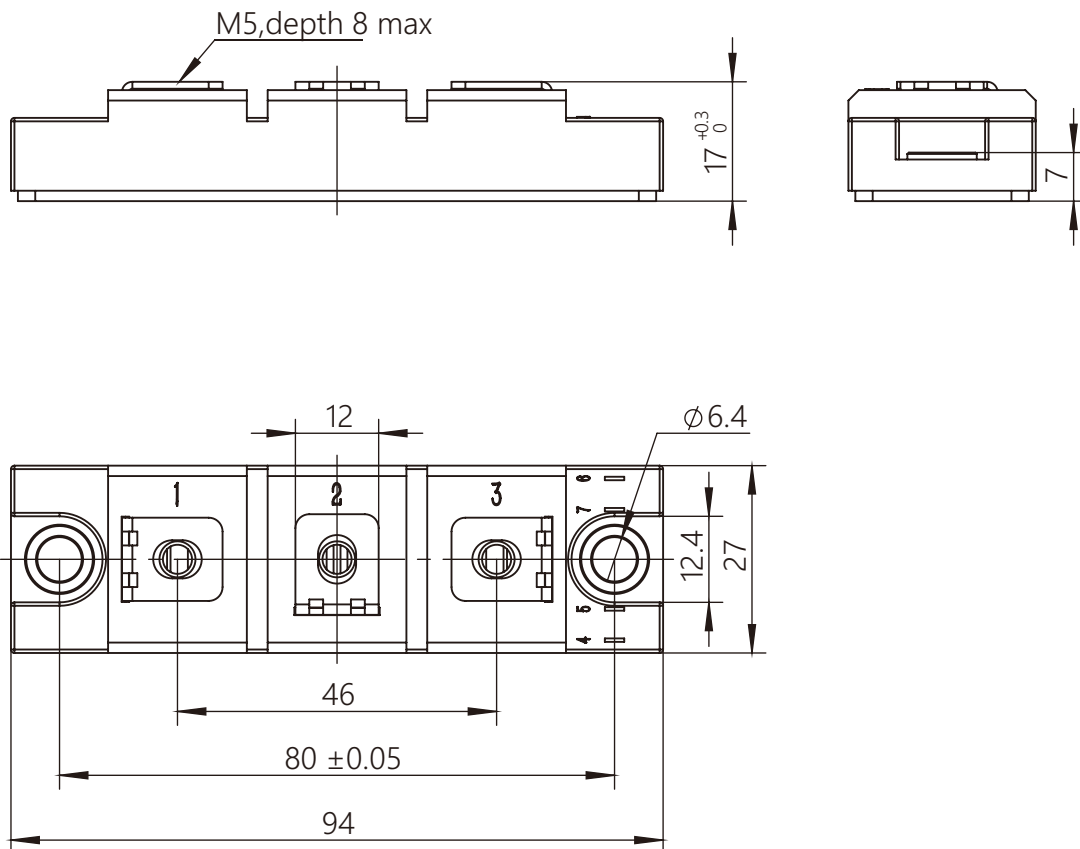


Figure6. Transient Thermal Impedance

## Package Outlines



Unit:mm