

产品规格书

Specification of products

产品名称: 快恢复二极管

产品型号: MF2X60U12NK5

浙江世菱半导体有限公司
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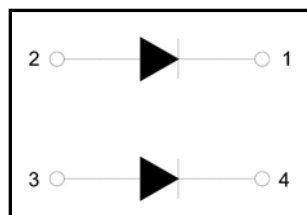
PRODUCT FEATURES

- Ultrafast Reverse Recovery Time
- Soft Reverse Recovery Characteristics
- Low Reverse Recovery Loss
- High System Power Density
- Popular SOT-227 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		1200	V
V_{RRM}	Maximum Repetitive Reverse Voltage		1200	V
$I_{F(AV)}$	Average Forward Current	$T_C=90^{\circ}\text{C}$, Per Diode	60	A
		$T_C=90^{\circ}\text{C}$, Per Mouldle	90	A
$I_{F(RMS)}$	RMS Forward Current	$T_C=90^{\circ}\text{C}$, Per Diode	90	A
I_{FSM}	Non-Repetitive Surge Forward Current	$T_J=45^{\circ}\text{C}$, $t=10\text{ms}$, 50Hz, Sine	900	A
		$T_J=45^{\circ}\text{C}$, $t=8.3\text{ms}$, 60Hz, Sine	1080	A
I^2t	I^2t (For Fusing)	$T_J=45^{\circ}\text{C}$, $t=10\text{ms}$, 50Hz, Sine	6750	A^2s
		$T_J=45^{\circ}\text{C}$, $t=8.3\text{ms}$, 60Hz, Sine	9720	A^2s
P_D	Power Dissipation		278	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	To-Sink	Recommended (M4)	0.7~1.1	N.m
Torque	To-Terminal	Recommended (M4)	0.7~1.1	N.m
$R_{\theta C}$	Thermal Resistance	Junction-to-Case	0.45	$^{\circ}\text{C} / \text{W}$
Weight			26.5	g

ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{RM}	Reverse Leakage Current	V _R =1200V	--	--	0.5	mA
		V _R =1200V, T _J =125°C	--	--	2	mA
V _F	Forward Voltage	I _F =60A	--	1.6	--	V
		I _F =60A, T _J =125°C	--	1.38	--	V
t _{rr}	Reverse Recovery Time	I _F =1A, V _R =30V, di _F /dt=-200A/μs	--	50	--	ns
t _{rr}	Reverse Recovery Time	V _R =600V, I _F =60A	--	135	--	ns
I _{RRM}	Max. Reverse Recovery Current	di _F /dt=-200A/μs, T _J =25°C	--	10	--	A
t _{rr}	Reverse Recovery Time	V _R =600V, I _F =60A	--	380	--	ns
I _{RRM}	Max. Reverse Recovery Current	di _F /dt=-200A/μs, T _J =125°C	--	21	--	A

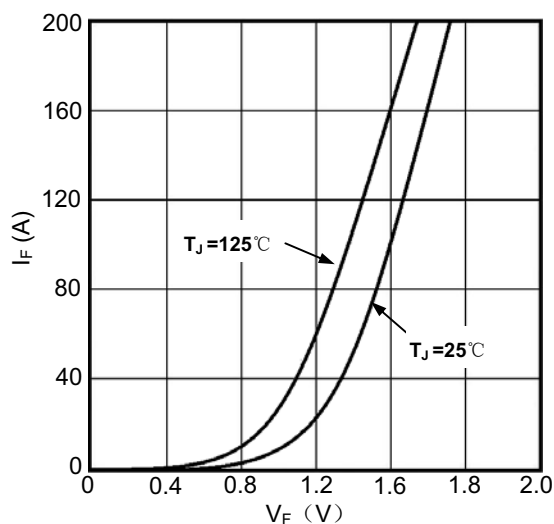


Figure1. Forward Voltage Drop vs Forward Current

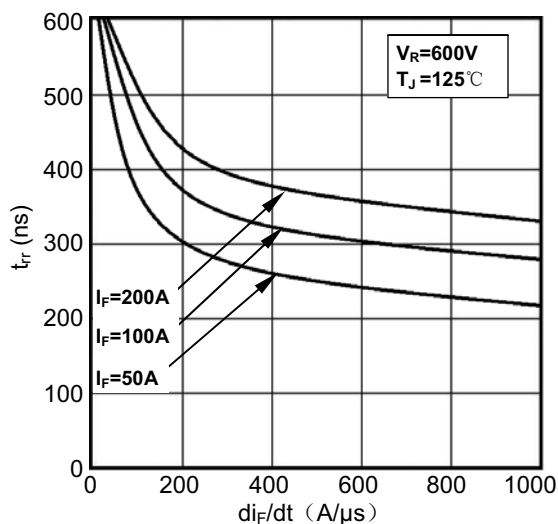


Figure2. Reverse Recovery Time vs di_F/dt

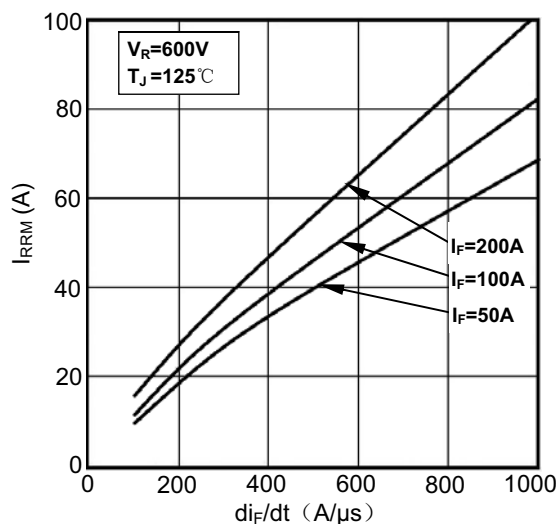


Figure3. Reverse Recovery Current vs di_F/dt

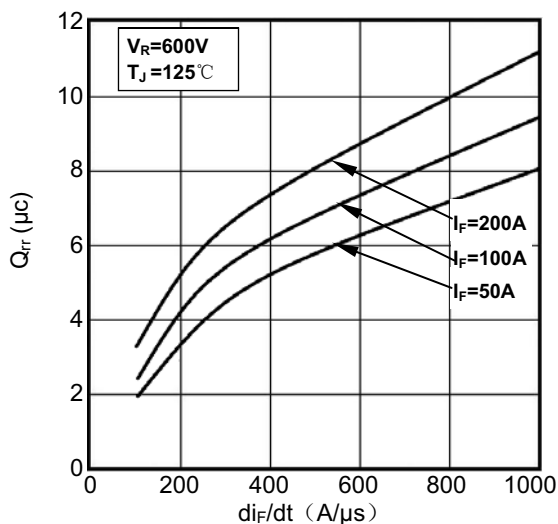


Figure4. Reverse Recovery Charge vs di_F/dt

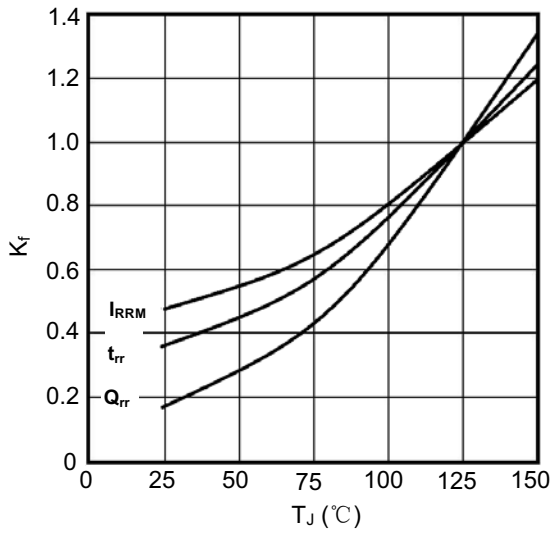


Figure5. Dynamic Parameters vs Junction Temperature

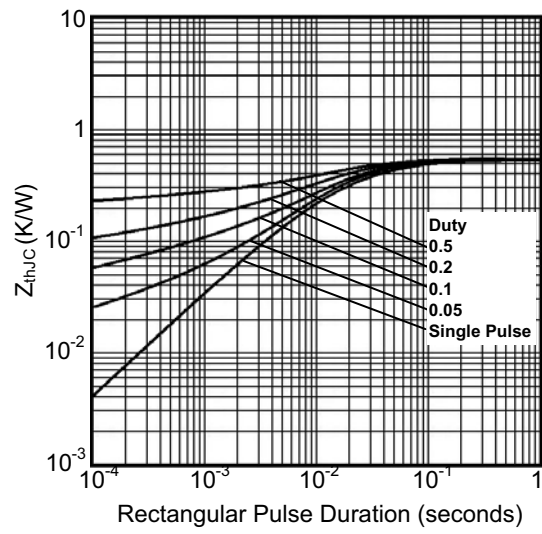
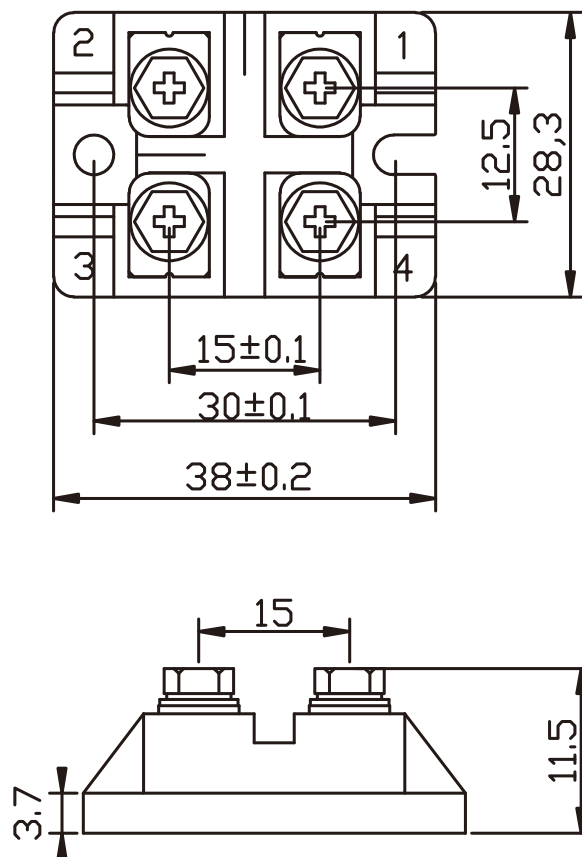


Figure6. Transient Thermal Impedance

Package Outline



Dimensions (mm)