

30A/1200V 快恢复二极管 30A/1200V Fast Recovery Diodes

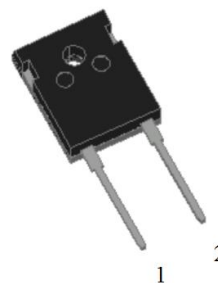
■特征 Features

- 超快恢复时间
Ultrafast Recovery Times
- 软恢复特性
Softer Recovery Characteristics
- 低正向电压
Low Forward Voltage
- 低反向漏电流
Low reverse leakage current

■应用范围 Applications

- 续流二极管
Free Wheeling Diode
- 电机控制器
Motor Controllers
- 开关式电源
Switching mode power supply
- 转换器
Converters
- 逆变器
Inverters
- 缓冲二极管
Snubber Diode
- 功率因数校正
PFC: Power Factor Correction

关键参数 KEY PARAMETERS		
参数 PARAMETER	数值 VALUE	单位 UNIT
$I_{F(AV)}$	30	A
V_F	1.8	V
V_{RRM}	1200	V
TRR	50	ns
Package	TO-247	



■机械参数 Mechanical Data

- 安装扭矩: 8.0kgf.cm
Mounting torque: 8.0kgf.cm max
- 重量: 约 6.4 克
Weight : About 6.4 grams



1 - 负极 Cathode
2 - 正极 Anode

■最大额定值 Maximum Ratings @ Ta = 25°C unless otherwise noted

特征/测试条件 Characteristic / Test Conditions	符号 SYMBOL	额定值 Rated value	单位 UNIT
反向重复峰值电压 Maximum recurrent peak reverse voltage	VRRM	1200	V
最大平均正向电流, TC=105°C Maximum Average Forward Current, TC=105°C	$I_{F(AV)}$	30	A
最大正向浪涌电流, 10ms 正弦半波 Peak surge forward current, 10ms single half sine-wave superimposed on rated load	IFSM	300	A
功率损耗 Power Dissipation	PD	187	W
结温 Junction Temperature	TJ	-55 ~ +175	°C
存储温度 Storage Temperature Range	TSTG	-55 ~ +150	°C
耐焊接热, 高温持续 10 秒 Resistance to Soldering Heat, Lead Temperature for 10 Sec	TL	260	°C

■ 电性特性 Electrical Characteristics @ Ta = 25°C unless otherwise noted

特征/测试条件 Characteristic / Test Conditions	符号 SYMBOL	典型值 TYP	最大值 MAX	单位 UNIT	
正向峰值电压 Peak Forward Voltage	VF	IF=30A, Tj=25°C	2.6	3.0	V
		IF=30A, Tj=150°C	1.8	/	V
VR=VRRM, 脉冲测试, 单个二极管的额定值 VR=VRRM, Pulse measurement Rating of per diode	IR	Tj=25°C	/	5	μA
		Tj=150°C	/	500	
反向恢复时间 Reverse Recovery Time	TRR	IF=0.5A IRR=1A IRR=0.25A Tj=25°C	50	60	ns

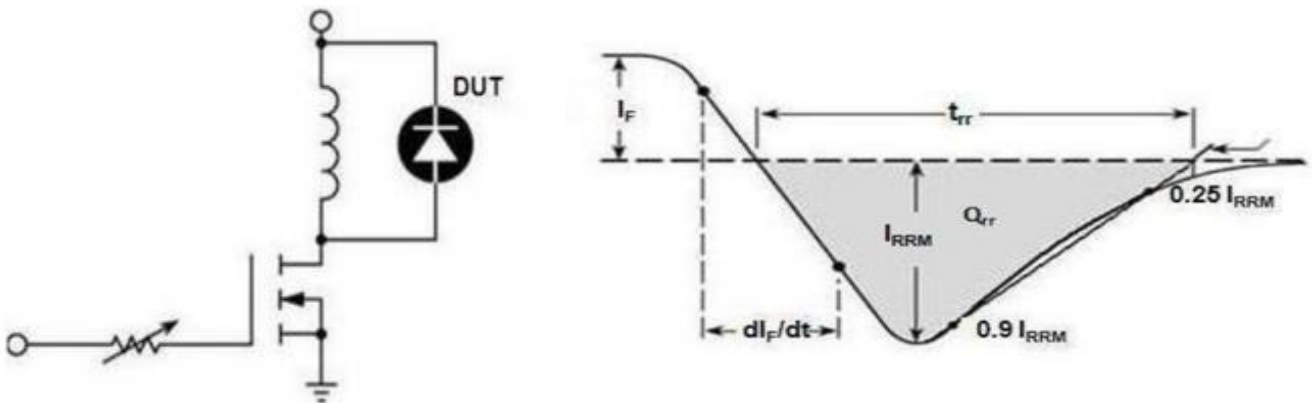
■ 电性特性 Electrical Characteristics @ Ta = 25°C unless otherwise noted

符号 SYMBOL	特征/测试条件 Characteristic / Test Conditions	典型值 TYP	最大值 MAX	单位 UNIT
TRR	反向恢复时间 Reverse Recovery Time	200	/	ns
IRRM	最大反向恢复电流 Maximum Reverse Recovery Current	8.6	/	A
QRR	反向恢复电荷 Reverse Recovery Charge	650	/	nc
TRR	反向恢复时间 Reverse Recovery Time	270	/	ns
IRRM	最大反向恢复电流 Maximum Reverse Recovery Current	14.5	/	A
QRR	反向恢复电荷 Reverse Recovery Charge	2280	/	nc

■ 热特性 Thermal Characteristics @ Ta = 25°C unless otherwise noted

特征/测试条件 Characteristic / Test Conditions	符号 SYMBOL	典型值 TYP	最大值 MAX	单位 UNIT
结到管壳的热阻, 有散热片 Junction to case Thermal Resistance, with heat sink	RθJC	0.8	/	°C/W

■ 反向恢复测试方法 Diode Reverse Recovery Test Circuit and Waveform



■特性曲线 Characteristic Curve

FIG.1 . Derating Curve For Output Rectified Current

图 1. 电流降额曲线

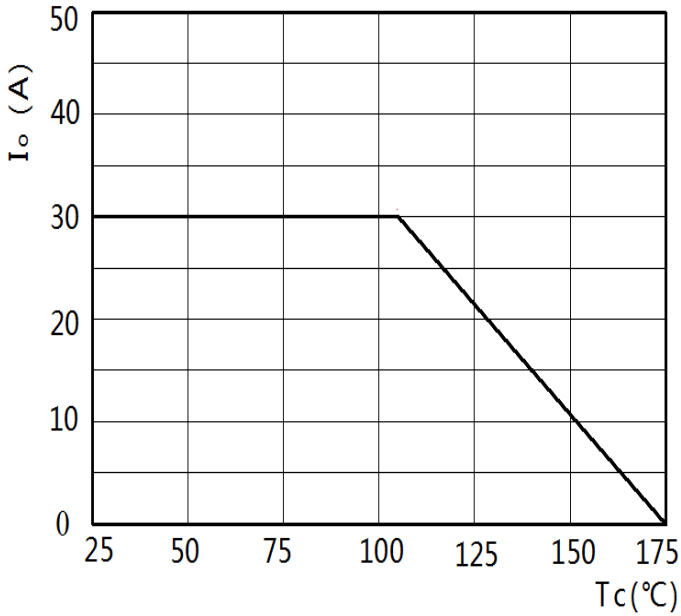


FIG.2 . Maximum Non-Repetitive Peak Forward Surge Current Per Bridge Element

图 2. 最大正向不重复峰值浪涌电流

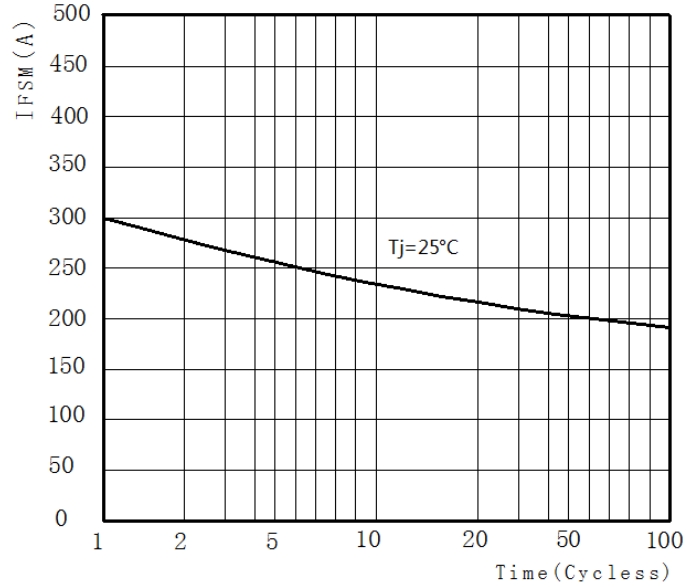


FIG3. Typical Reverse Characteristics Per Bridge Element

图 3. 典型反向特性

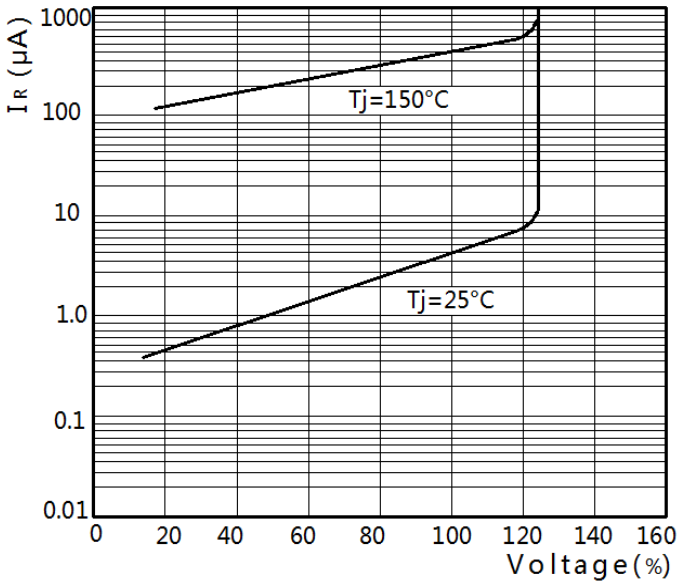


FIG4. Typical Forward Characteristics Per Bridge Element

图 4. 典型正向特性

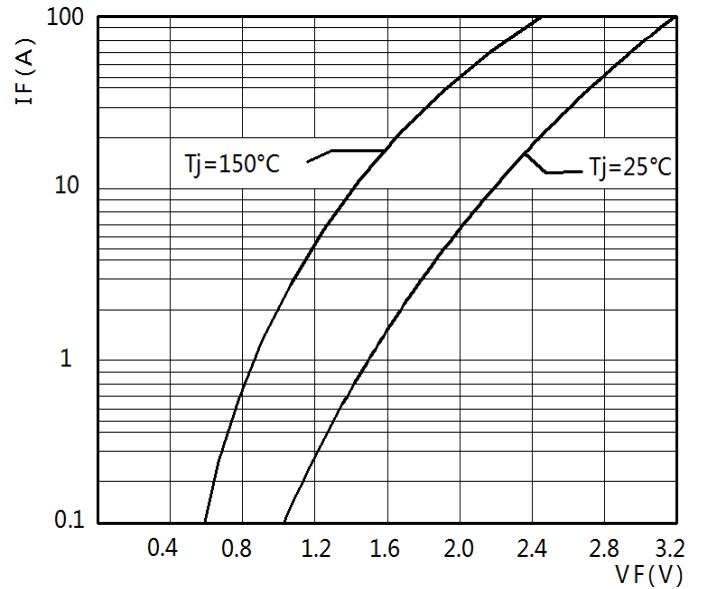


FIG.5 . Reverse Recovery Time VS diF /dt

图 5. 反向恢复时间

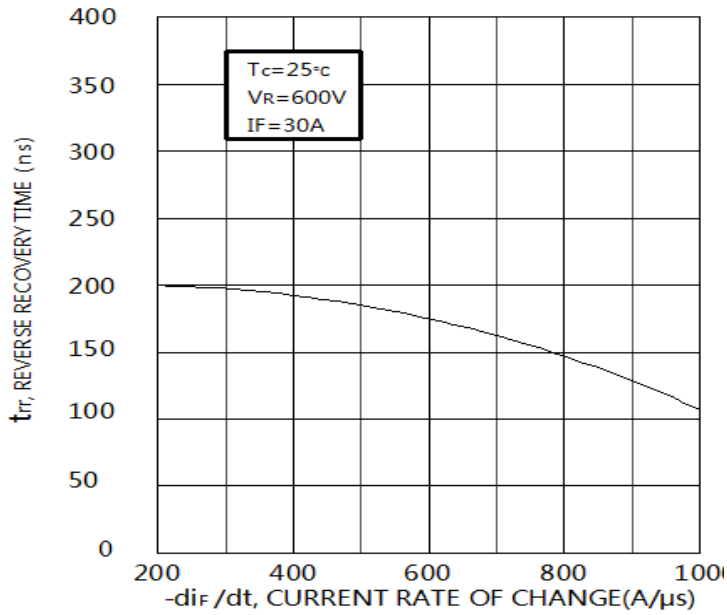


FIG.6 . Reverse Recovery Current VS diF /dt

图 6. 反向恢复电流

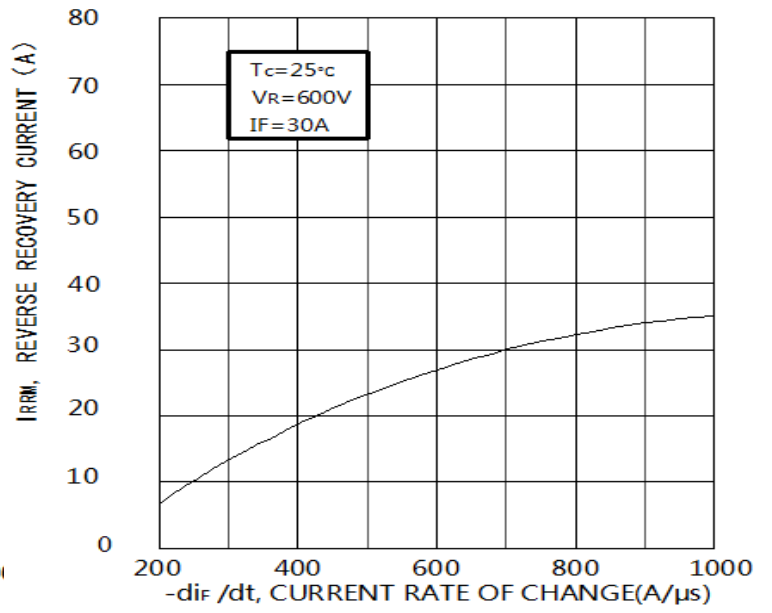
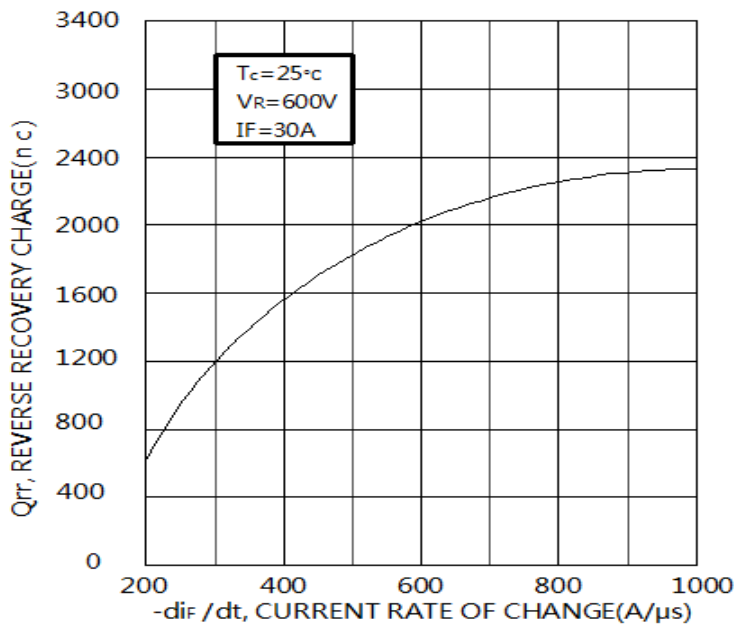
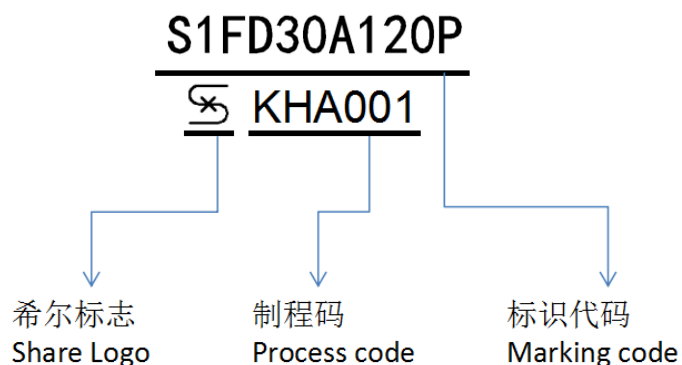


FIG7. Reverse Recovery Charge VS diF/dt

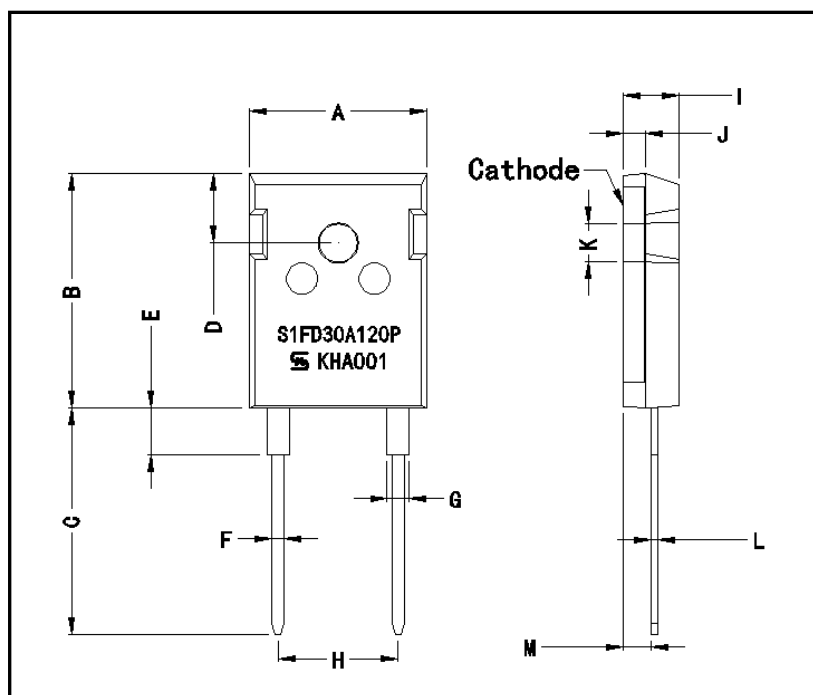
图 7. 反向重复峰值电流



■ 标记图 Marking Diagram



■ 尺寸图 Dimension Drawing



Dim.	Unit(mm)		Unit(inch)	
	min	max	min	max
A	15.70	16.30	0.62	0.64
B	20.70	21.30	0.81	0.84
C	19.50	20.50	0.77	0.81
D	5.70	6.70	0.22	0.26
E	4.00	4.40	0.16	0.17
F	1.00	1.40	0.04	0.06
G	1.70	2.30	0.07	0.09
H	10.5	11.1	0.20	0.23
I	4.70	5.30	0.19	0.21
J	1.70	2.30	0.07	0.09
K	3.20	3.80	0.13	0.15
L	0.50	0.70	0.02	0.03
M	2.20	2.60	0.09	0.10

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