

20A/300V 快恢复二极管 20A/300V 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

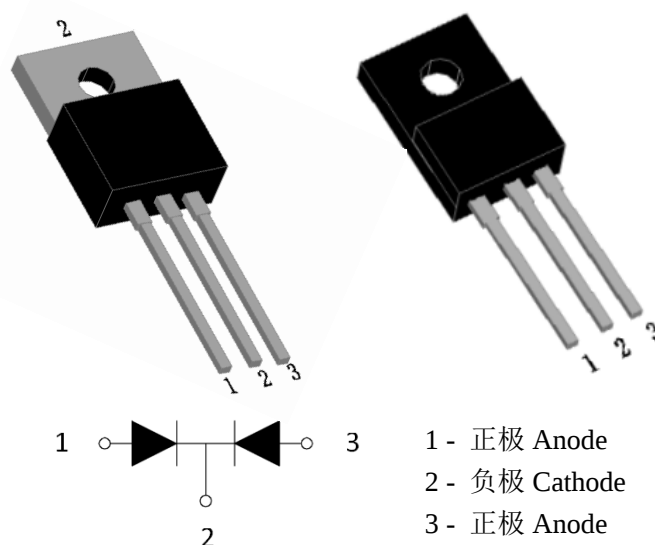
- 续流二极管
Free Wheeling Diode
- 电机控制器
Motor Controllers
- 开关式电源
Switching mode power supply
- 转换器
Converters
- 逆变器
Inverters
- 缓冲二极管
Snubber Diode
- 功率因数校正
PFC:Power Factor Correction

■机械参数 Mechanical Data

- 安装扭矩: 8.0kgf.cm
Mounting torque: 8.0kgf.cm max
- 重量: 约 2.1 克 (S2FD20C30)
Weight : About 2.1 grams
- 重量: 约 1.6 克 (S2FD20C30 F)
Weight : About 1.6 grams

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

关键参数 KEY PARAMETERS		
参数 PARAMETER	数值 VALUE	单位 UNIT
$I_{F(AV)}$	20	A
V_F	1.15	V
V_{RRM}	300	V
TRR	30	ns
Package	TO-220	



特征/测试条件 Characteristic / Test Conditions	符号 SYMBOL	典型值 TYP	单位 UNIT
反向重复峰值电压 Maximum recurrent peak reverse voltage	VRRM	300	V
最大平均正向电流 Maximum Average Forward Current	IF(AV)	20(10*2)	A
最大正向浪涌电流, 8.3ms 单半正弦波叠加在额定负载上 Peak surge forward current, 8.3ms single half sine-wave superimposed on rated load	IFSM	150	A
存储温度 Storage Temperature Range	TSTG	-55 ~ +150	℃
耐焊接热, 高温持续 10 秒 Resistance to Soldering Heat, Lead Temperature for 10 Sec	TL	260	℃
绝缘耐压, 端子与外壳之间外加交流电 1 分钟 Dielectric strength, terminals to case AC 1 minute	V _{dis}	2.5	KV

■电性特性 Electrical Characteristics @ Ta = 25℃ 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	IF=10A , Tj=25℃	VF	1.15	1.3	V
	IF=10A , Tj=150℃		0.9	1.0	V
VR=VRRM, 脉冲测试, 单个二极管的额定值 VR=VRRM, Pulse measurement Rating of per diode	Tj=25℃	IR		1	μA
	Tj=150℃			300	
反向恢复时间 Reverse Recovery Time	IF=0.5A IRR=0.25A IRM=1A TC=25℃	TRR	30	35	ns

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

特征/测试条件 Characteristic / Test Conditions	符号 SYMBOL	S2FD20C30	S2FD20C30 F	单位 UNIT
结到管壳的热阻,有散热片 Junction to case Thermal Resistance , with heat sink	RθJC	1.6	2.0	℃/W

■特性曲线 Characteristic Curve

FIG.1 . Derating Curve For Output Rectified Current

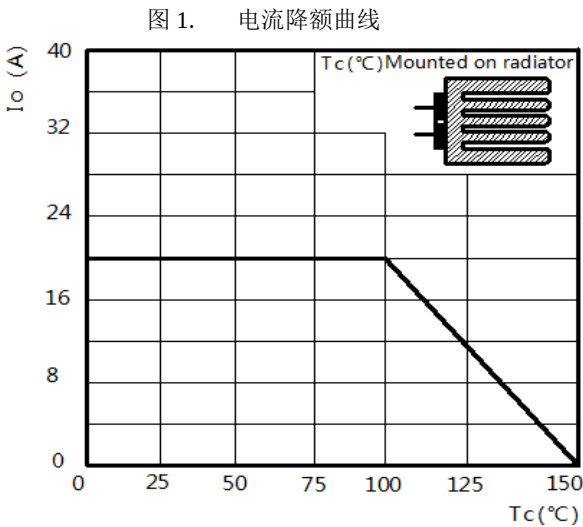


FIG3. Typical Reverse Characteristics Per Bridge Element

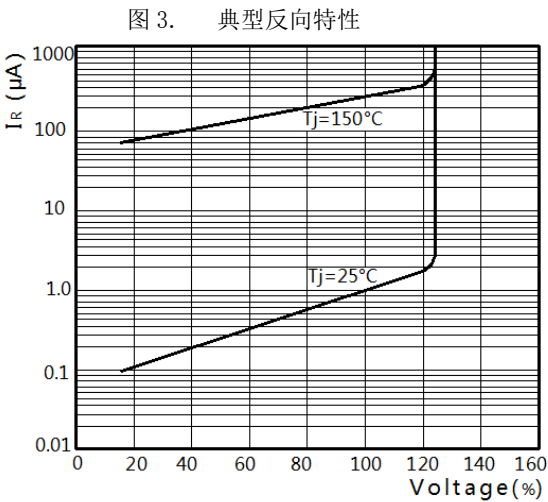


FIG.2 . Maximum Non-Repetitive Peak Forward Surge Current Per Bridge Element

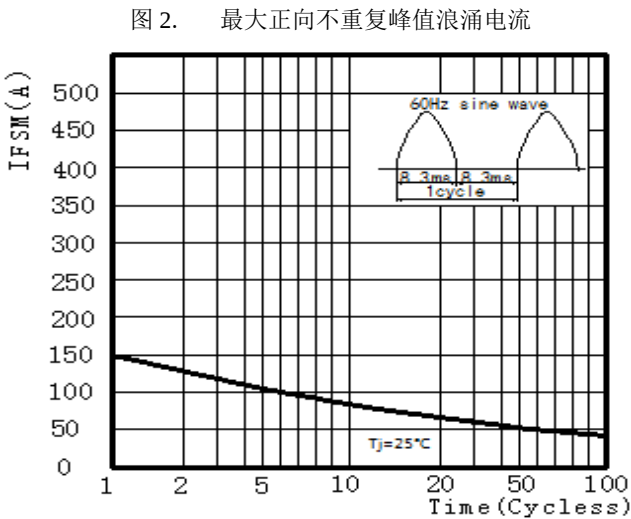
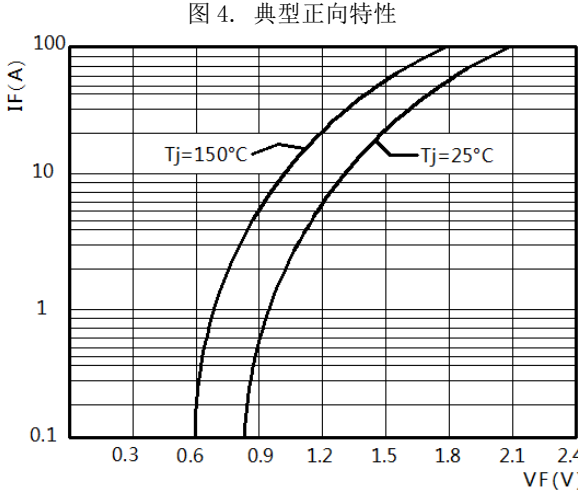
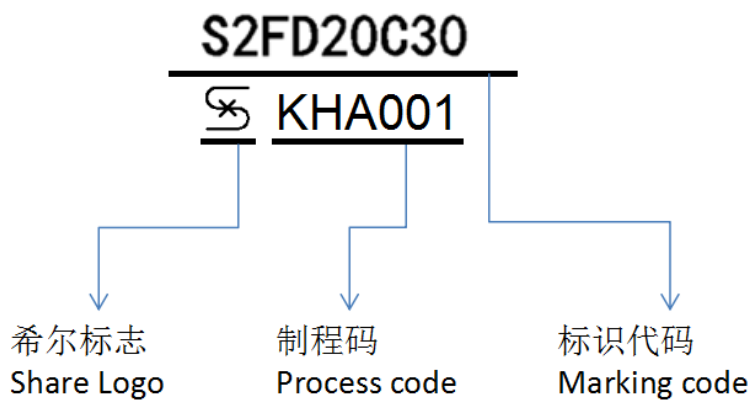


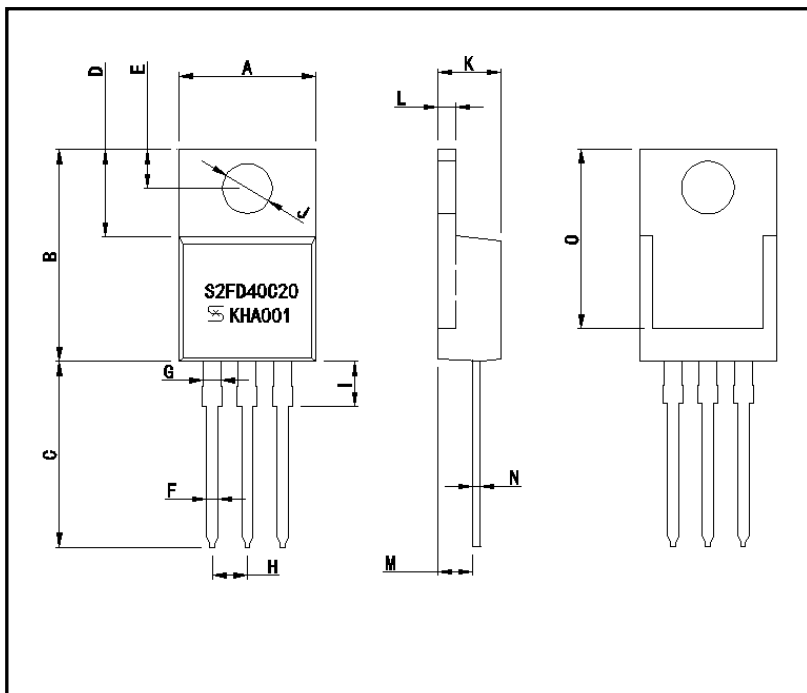
FIG4. Typical Forward Characteristics Per Bridge Element



■ 标记图 Marking Diagram

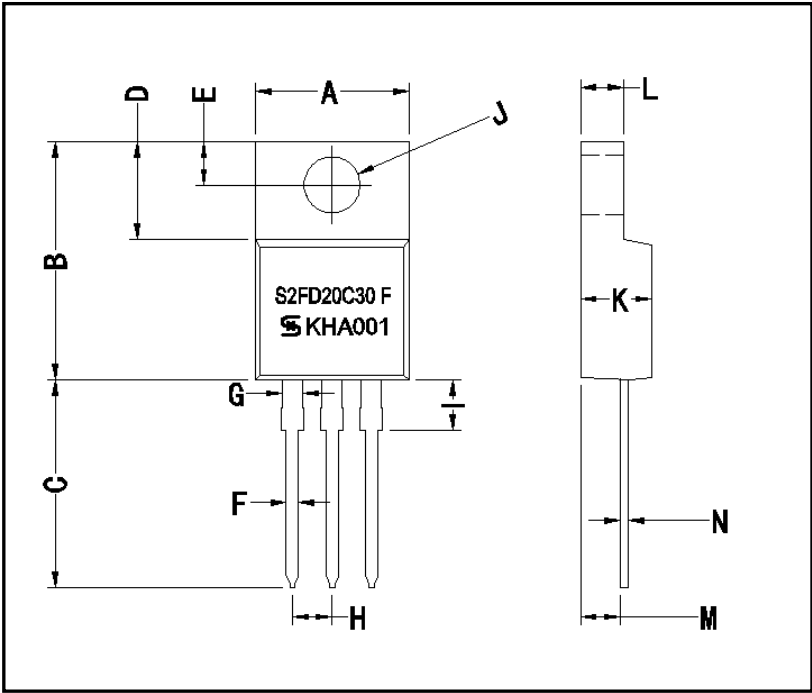


■ 尺寸图 Dimension Drawing (S2FD20C30)



Dim.	Millimeter		Inches	
	min	max	min	max
A	9.70	10.3	0.38	0.41
B	15.1	15.7	0.59	0.62
C	13	14	0.51	0.55
D	6	6.6	0.24	0.26
E	2.5	3.1	0.10	0.12
F	0.6	1	0.02	0.04
G	1.05	1.45	0.04	0.06
H	2.3	2.7	0.09	0.11
I	3.1	4.1	0.12	0.16
J	3.4	3.8	0.13	0.15
K	4.3	4.9	0.17	0.19
L	1	1.6	0.04	0.06
M	2.34	2.74	0.09	0.11
N	0.4	0.8	0.02	0.03
O	13.2	13.8	0.52	0.54

■尺寸图 Dimension Drawing (S2FD20C30 F)



Dim.	Unit(mm)		Unit(inch)	
	min	max	min	max
A	9.5	10.5	0.39	0.43
B	15.5	16.5	0.64	0.68
C	13	14	0.51	0.55
D	6.5	7.1	0.27	0.29
E	2.5	3.5	0.1	0.14
F	0.5	0.9	0.02	0.04
G	1.0	1.4	0.04	0.06
H	2.3	2.7	0.09	0.11
I	2	4	0.08	0.16
J	3.0	3.4	0.12	0.14
K	4.5	4.9	0.18	0.20
L	2.6	3.0	0.11	0.12
M	2.6	3.0	0.11	0.12
N	0.4	0.8	0.02	0.03

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