

快恢复二极管/Fast Recovery Diode

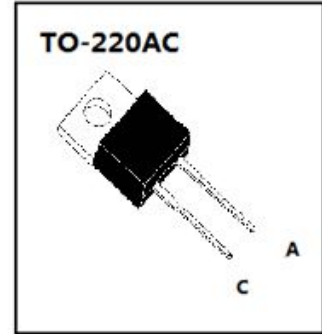
特点:

- 超快反向恢复 trr=25ns
- 最高工作温度 175℃
- 600V 反向耐压
- 额定雪崩耐量高

Features

- Fast Recovery trr=25ns
- Max Operating Temperature 175℃
- Reverse Voltage 600V
- Avalanche Energy Rated

Package



应用:

- 开关电源
- 硬开关 PFC 升压
- 不间断电源续流管
- 电机驱动续流管

Applications

- SMPS
- Hard Switched PFC Boost Diode
- UPS Free Wheeling Diode
- Motor Drive FWD

●最大极限参数 (T<sub>J</sub>=25℃)

●Absolute Maximum Ratings (T<sub>J</sub>=25℃)

TO-220AC

符号 Symbol	参数 Parameter	额定值 Value	单位 Units
V <sub>RRM</sub>	最大直流阻断电压 DC Blocking Voltage	600	V
I <sub>F(AV)</sub>	正向平均整流电流 Average Rectified Forward Current	8	A
I <sub>FRM</sub>	可重复峰值浪涌电流 (20kHz 方波) Repetitive Peak Surge Current (20kHz Square Wave)	16	A
I <sub>FSM</sub>	单脉冲正向峰值浪涌电流 Nonrepetitive Peak Surge Current@8.3ms	80	A
T <sub>J</sub>	最高工作结温 Operating Junction Temperature	175	℃
T <sub>STG</sub>	存储温度 Storage Temperature Range	-55~175	℃

●电特性 (T<sub>J</sub>=25℃)

●Electronic Characteristics (T<sub>J</sub> = 25℃)

符号 Symbol	参数名称 Parameter	测试条件 Test Conditions	最小值 Min.	典型值 Typ.	最大值 Max.	单位 Units
V <sub>RB</sub>	反向击穿电压 Reverse Breakdown Voltage	I <sub>R</sub> =50μA	600	670		V
V <sub>F</sub>	正向压降 Diode Forward Voltage	I <sub>F</sub> =8A T <sub>J</sub> =25℃		1.30	1.55	V
		I <sub>F</sub> =8A T <sub>J</sub> =125℃		1.20	1.45	V
		I <sub>F</sub> =4A T <sub>J</sub> =25℃		1.18	1.45	V
		I <sub>F</sub> =4A T <sub>J</sub> =125℃		1.10	1.35	V
I <sub>R</sub>	反向漏电流 Reverse leakage current	V <sub>R</sub> =600V T <sub>J</sub> =25℃			2	uA
		V <sub>R</sub> =600V T <sub>J</sub> =125℃		2		uA

●动态反向恢复参数 (T<sub>J</sub>=25°C)

●DYNAMIC RECOVERY CHARACTERISTICS(T<sub>J</sub> = 25 °C)

符号 Symbol	参数名称 Parameter	测试条件 Test Conditions	最小值 Min.	典型值 Typ.	最大值 Max.	单位 Units
I <sub>RRM</sub>	二极管反向峰值恢复电流 Diode Peak Reverse Recovery Current	V <sub>DD</sub> =30V; I <sub>F</sub> =1A; dif/dt=100A/μs; See Fig.4		1.45	1.6	A
Q <sub>rr</sub>	反向恢复电荷 (由 I <sub>RRM</sub> 和 trr 定义的面积) Reverse recovery charge (Area Under the Curve Defined by I <sub>RRM</sub> and trr).			25	30	nc
trr	反向恢复时间 Diode Reverse Recovery Time			25	35	ns
S	反向恢复软度 S= t <sub>b</sub> /t <sub>a</sub>			0.8		
I <sub>RRM</sub>	二极管反向峰值恢复电流 Diode Peak Reverse Recovery Current	V <sub>DD</sub> =400V; I <sub>F</sub> =8A ; dif/dt=500A/μs; See Fig.4		7.8	9	A
Q <sub>rr</sub>	反向恢复电荷 (I <sub>RRM</sub> 和 trr 定义的面积) Reverse recovery charge (Area Under the Curve Defined by I <sub>RRM</sub> and trr).			300	350	nc
trr	反向恢复时间 Diode Reverse Recovery Time			80	90	ns
S	反向恢复软度 S= t <sub>b</sub> /t <sub>a</sub>			3.3		

●订单信息/ORDERING INFORMATION:

包装形式/PACKING	订货编码/ORDERING CODE	
	普通塑封料/ Normal Package Material	无卤塑封料/Halogen Free
TO-220AC 条管装/TUBE PACKING	FD8U60 TO-220AC-TU	FD8U60 TO-220AC-TU-HF

●热特性 /THERMAL PARAMETERS:

Symbol	Parameter	Value		Unit
		Type	Max	
R <sub>th</sub> (J-C)	Junction to Case	1.0	1.5	°C/W

Fig.1 正向特性/Forward Current vs Forward Voltage

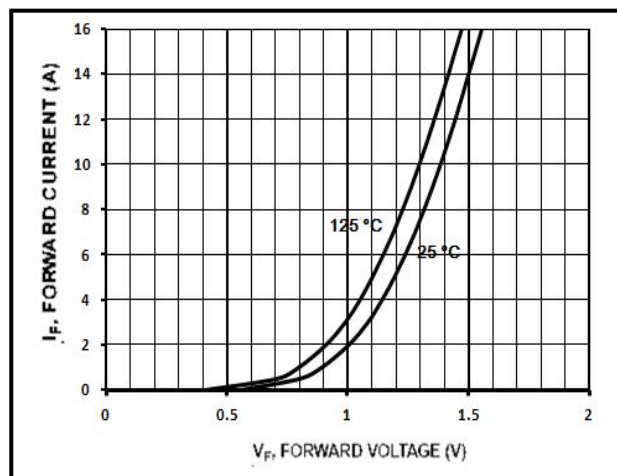


Fig.2 反向特性/Reverse Current vs Reverse Voltage

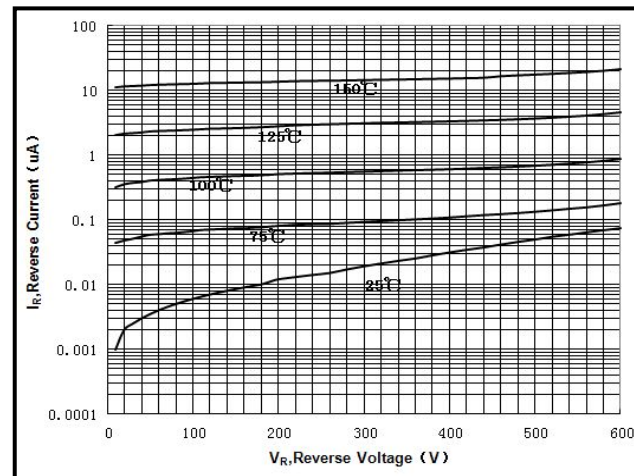


Fig.3 trr 测试电路/trr Test Circuit

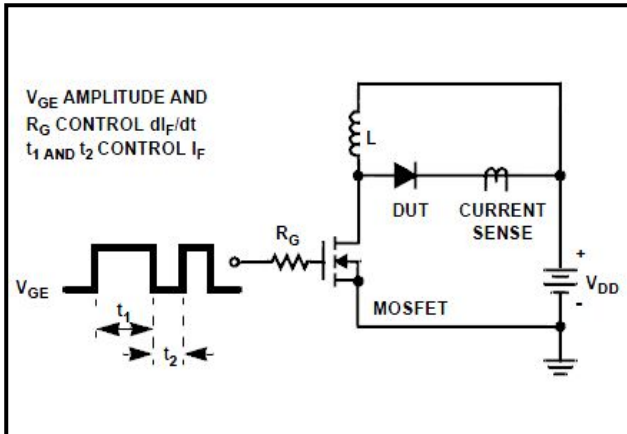
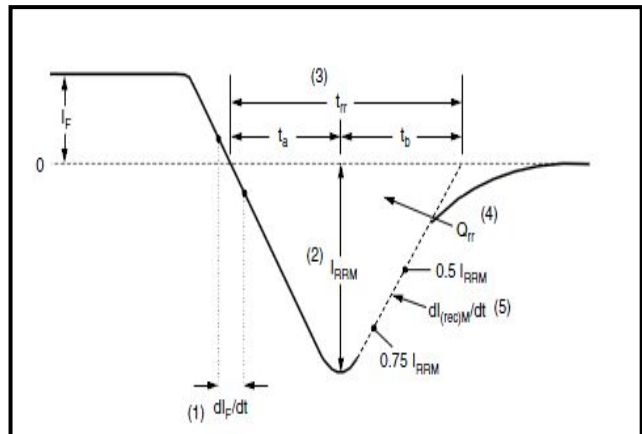


Fig.4 trr 波形与定义/trr Waveforms and Definitions



**TO-220AC 封装机械尺寸**  
**TO-220AC MECHANICAL DATA**

UNIT: mm

SYMBOL	min	max	SYMBOL	min	max
A	4.32	4.57	F	1.22	1.37
b	0.71	0.91	H1	5.97	6.47
b1	1.15	1.39	J1	2.54	2.79
c	0.36	0.53	L	13.47	13.97
D	14.99	15.49	L1(1)	3.31	3.81
E	10.04	10.41	$\phi P$	3.97	3.88
e	5.08BSC		Q	2.60	2.84

