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2013 年 11 月

FFP30S60S
30 A、 600 V STEALTH™ II 代二极管

特性

- Stealth 恢复 t_{rr} = 40 ns (@ I_F = 30 A)
- 最大正向电压 , V_F = 2.6 V (@ T_C = 25°C)
- 600 V 反向电压和高可靠性
- 雪崩能量额定值
- 符合 RoHS 标准

应用

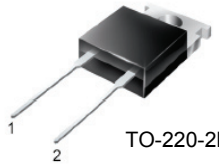
- 一般用途
- SMPS, 功率开关电路
- 用于连续模式功率因数校正器中的升压二极管

说明

FFP30S60S 为带软恢复特性的 STEALTH™ II 代二极管。它采用氮化硅钝化的离子布植式外延平面结构。

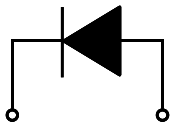
此器件在开关电源及其他电源开关应用中用作续流或升压二极管。其低存储电荷和超高速软恢复特性可最大程度降低多种电源开关电路中的振铃和电气噪声，由此降低开关晶体管中的功耗。

引脚分配



TO-220-2L

1. 阴极　2. 阳极



1. 阴极　2. 阳极

绝对最大额定值 T_C = 25°C 除非另有说明

符号	参数	额定值	单位
V_{RRM}	重复反向峰值电压	600	V
V_{RWM}	反向峰值工作电压	600	V
V_R	直流阻断电压	600	V
$I_{F(AV)}$	正向平均整流电流　@ T_C = 103°C	30	A
I_{FSM}	非重复浪涌峰值电流 60 Hz 单侧半正弦波	300	A
T_J, T_{STG}	工作和存储温度范围	-65 至 +150	°C

热性能

符号	参数	最大值	单位
$R_{\theta JC}$	结点 - 壳体的最大热阻	1.1	°C/W

封装标识与定购信息

器件编号	正面标记	封装	包装方法	卷尺寸	带宽	数量
FFP30S60STU	FFP30S60S	TO-220-2L	塑料管	不适用	不适用	50

电气特性 T_C = 25°C 除非另有说明

符号	参数		最小值	典型值	最大值	单位
V_{FM}1	I_F = 30 A I_F = 30 A	T_C = 25°C T_C = 125°C	- -	2.1 1.6	2.6 -	V
I_{RM}1	V_R = 600 V V_R = 600 V	T_C = 25°C T_C = 125°C	- -	- -	100 500	μA
t_{rr}	I_F = 1 A, di_F/dt = 100 A/μs, V_R = 30 V	T_C = 25°C	-	25	35	ns
t_{rr} I_{rr} 软度因子 S Q_{rr}	I_F = 30 A, di_F/dt = 200 A/μs, V_R = 390 V	T_C = 25°C	- - - -	28 2.4 0.9 34	40 - - -	ns A nC
t_{rr} I_{rr} 软度因子 S Q_{rr}	I_F = 30 A, di_F/dt = 200 A/μs, V_R = 390 V	T_C = 125°C	- - - -	75 6.3 0.9 236	- - - -	ns A nC
W_{AVL}	雪崩能量 （L = 40 mH）		20	-	-	mJ

注意：
1：脉冲：测试脉宽 = 300 μs, 占空比 = 2%

测试电路与波形

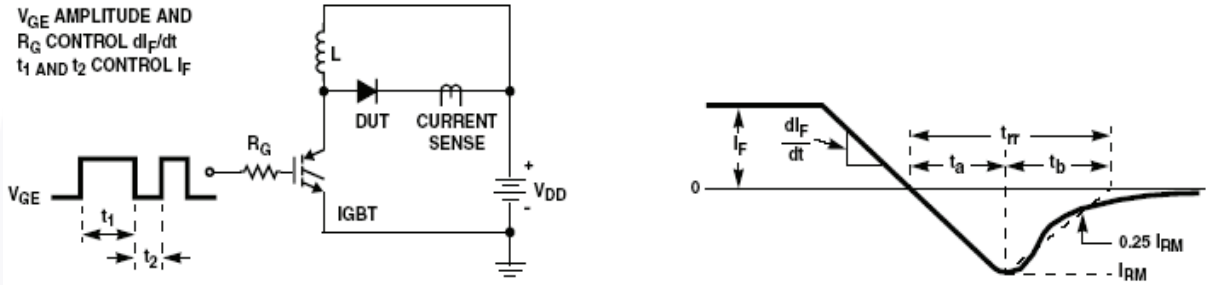


图 1. 二极管反向恢复测试电路与波形

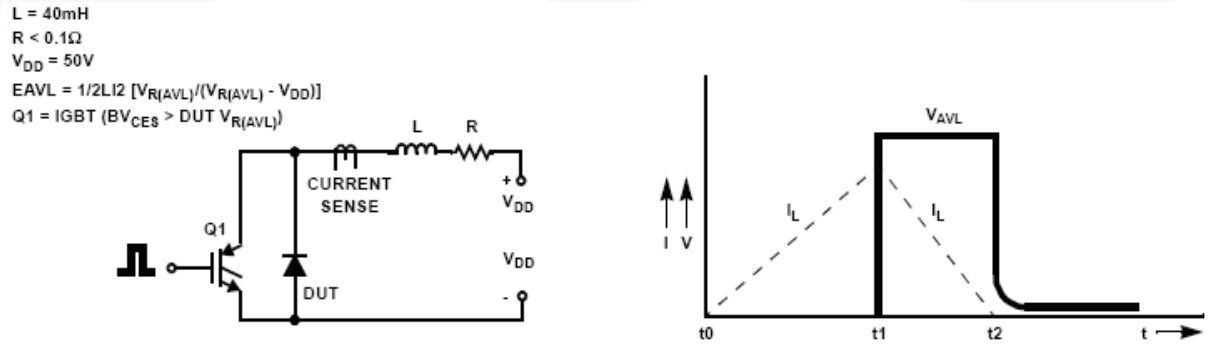


图 2. 非箝位感性开关测试电路与波形

典型性能特征

图 3. 典型正向电压降与正向电流的关系

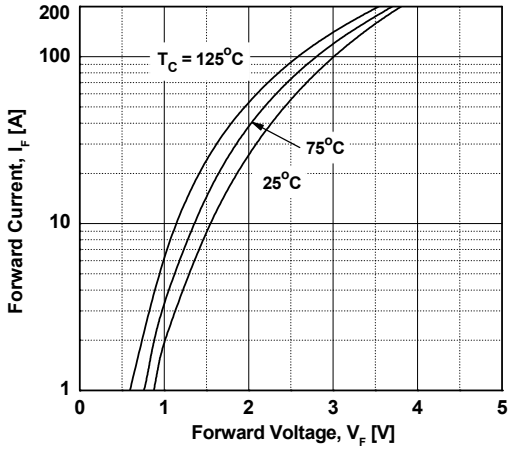


图 4. 典型反向电流与反向电压的关系

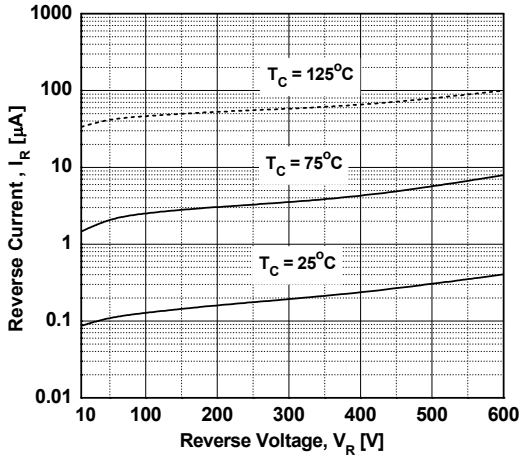


图 5. 典型结电容

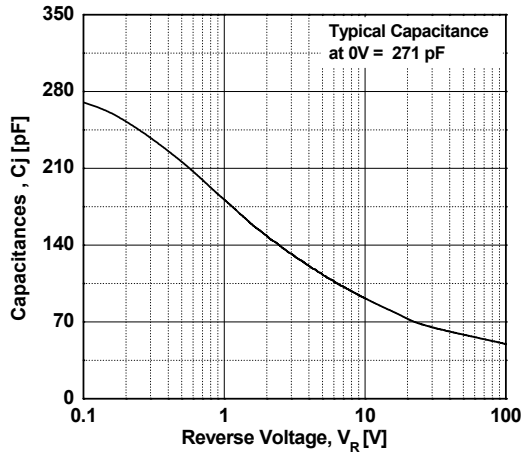


图 6. 典型反向恢复时间与 di_F/dt 的关系

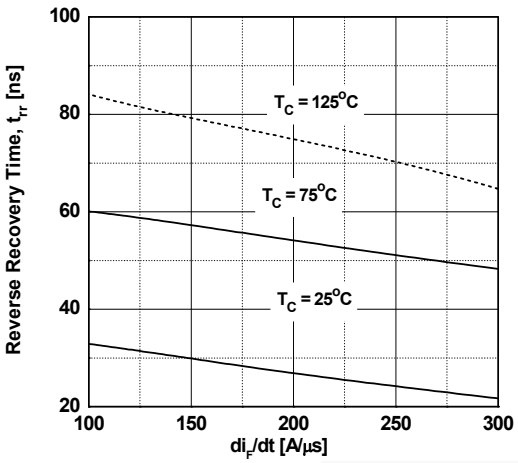


图 7. 典型反向恢复电流与 di_F/dt 的关系

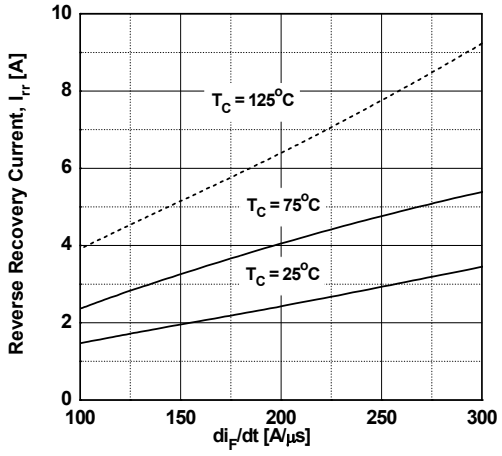
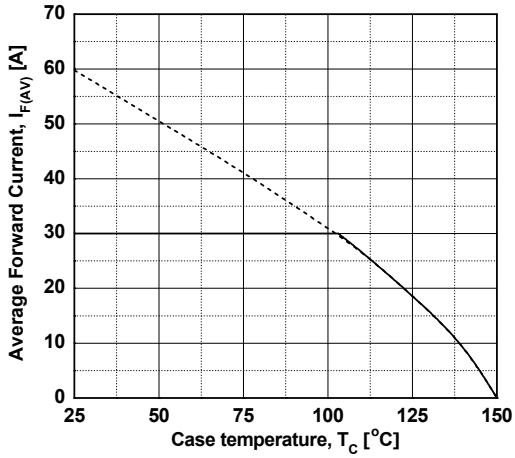
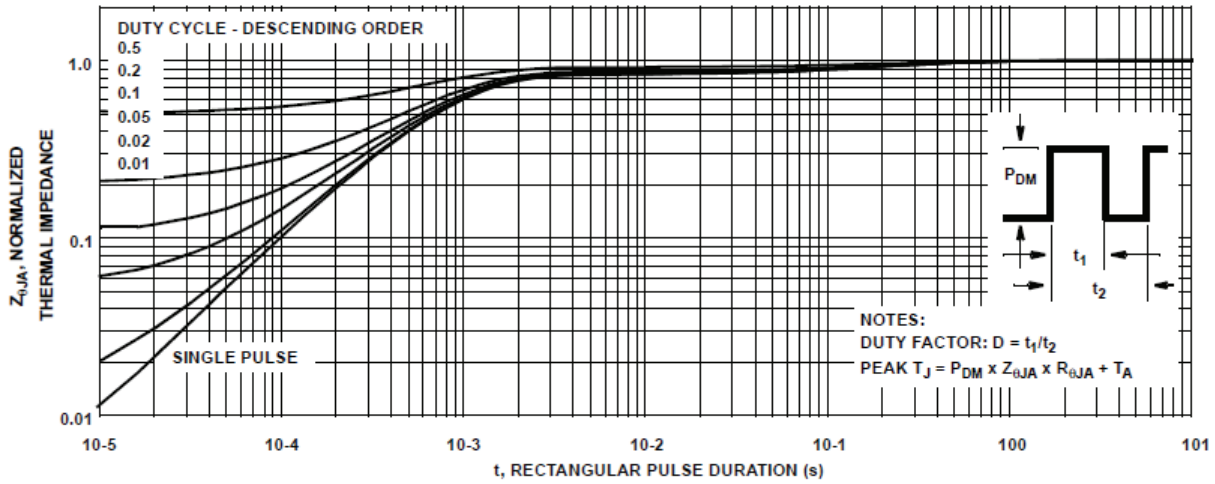


图 8. 正向电流降额曲线



典型性能特征

图 9. 归一化最大瞬态热阻抗



机械尺寸

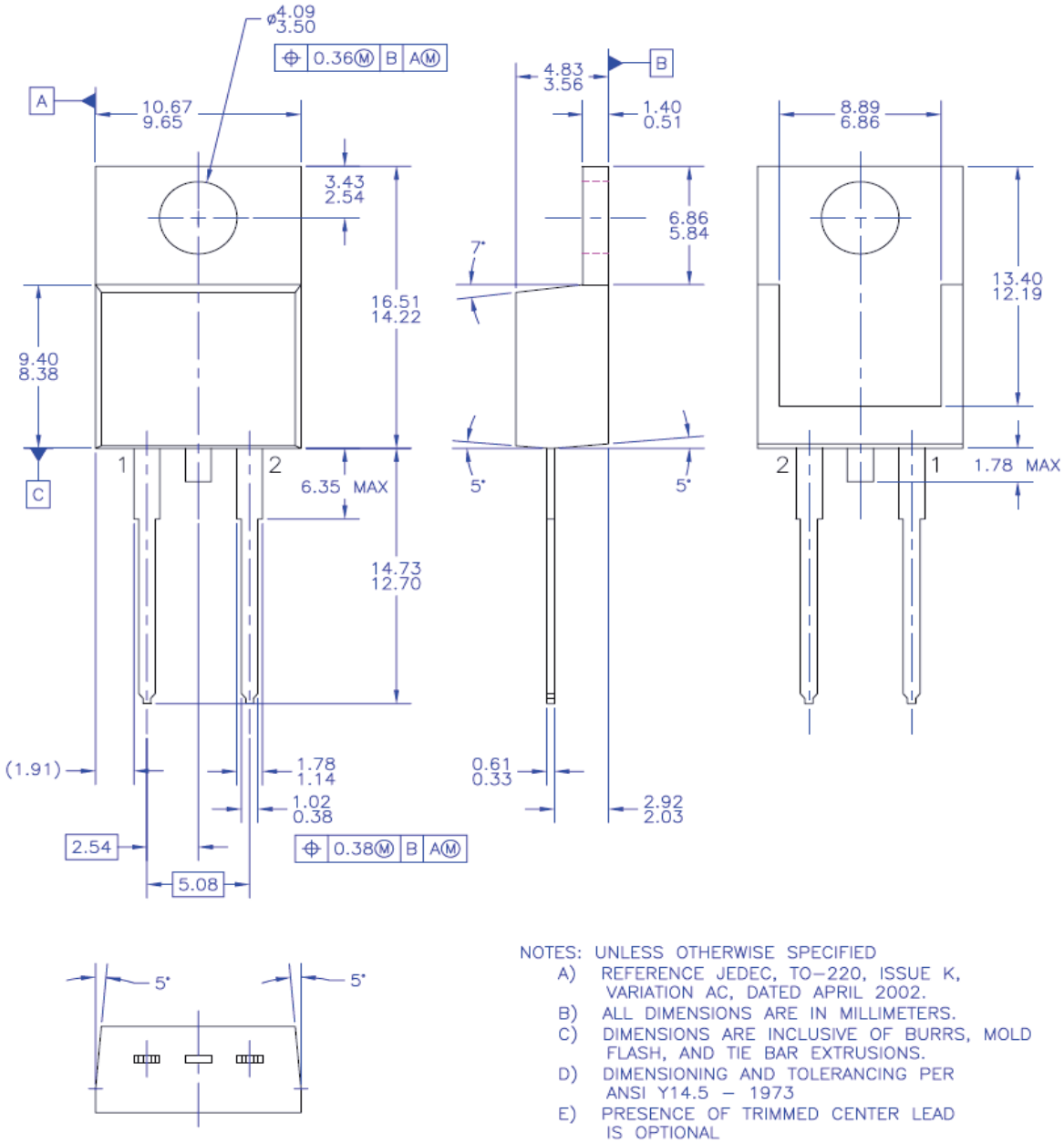


图 10. TO-220 2L - 2LD, TO220, JEDEC TO-220 VARIATION AC

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