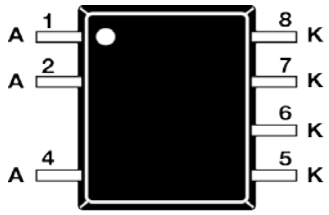
LXA03D530
Qspeed™产品系列

530 V/3 A X系列二极管

产品概览

$I_{F(AVG)}$	3	A
V_{RRM}	530	V
Q_{RR}（125°C下典型值）	75	nC
I_{RRM}（125°C下典型值）	3.2	A
软度t_B/t_A（125°C下典型值）	0.34	

引脚分配



D封装(SO-8C)

LXA03D530

符合RoHS标准

封装采用无铅电镀和
符合IEC 61249-2-21指令的
“绿色环保”无卤模封料。

概述

该器件是一款极低反向恢复530 V硅二极管。其恢复特性能提高效率、降低EMI并省去缓冲电路。

应用

- 高压功率整流管
- 功率因数校正(PFC)升压二极管
- 电机驱动电路
- DC-AC逆变器

特性

- 低QRR、低IRRM、低tRR
- 可实现高dIF/dt值
- 软恢复

优势

- 降低反向峰值电压
- 提高效率
  - 无需缓冲电路
  - 缩减EMI滤波元件的尺寸和数目
- 实现极快速开关

绝对最大额定值

绝对最大额定值是指一旦超过就可能使器件受损或缩短其使用寿命的极限值。不建议在此类条件下进行功能性工作。

符号	参数	条件	额定值	单位
V_{RRM}	峰值重复反向电压	T_J = 25 °C	530	V
$I_{F(AVG)}$	平均前馈电流	T_J = 150 °C，T_L = 29 °C	3	A
I_{FSM}	非重复峰值浪涌电流	60 Hz，½周期，T_C = 25 °C	25	A
I_{FSM}	非重复峰值浪涌电流	t = 28 µs正弦的½周期，T_C = 25 °C	350	A
$T_{J(MAX)}$	最大结温		150	°C
T_{STG}	贮存温度		-55至150	°C
P_D	功耗	T_L = 25 °C	4.6	W

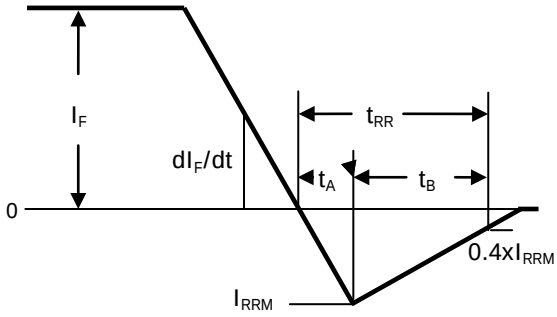
热阻

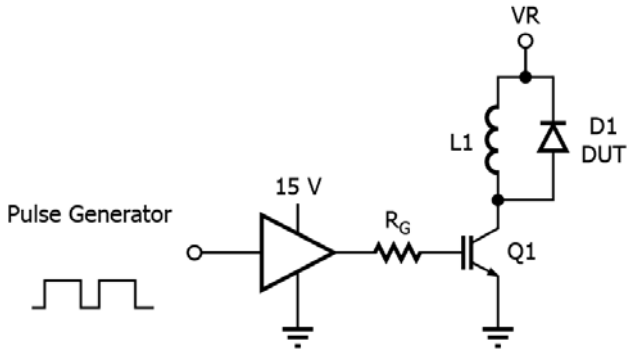
符号	电阻	条件	额定值	单位
$R\theta_{JA}$	结到环境	焊在1平方英寸(645 mm^2)、2盎司铜箔区域	80	°C/W
$R\theta_{JL}$	结到引脚	在引脚7测得的温度	27	°C/W

电气规格，T_J = 25 °C（除非另有指定）

符号	参数	条件		最小值	典型值	最大值	单位
DC特性							
I_R	反向电流	V_R = 530 V，T_J = 25 °C		-	0.4	250	μA
		V_R = 530 V，T_J = 125 °C		-	0.275	-	mA
V_F	正向电压	I_F = 3 A，T_J = 25 °C		-	1.55	1.71	V
		I_F = 3 A，T_J = 150 °C		-	1.33	-	V
C_J	结电容	V_R = 10 V，1 MHz		-	15	-	pF
动态特性							
t_{RR}	反向恢复时间	dI/dt = 200 A/μs V_R = 400 V，I_F = 3 A	T_J = 25 °C	-	25	34.3	ns
			T_J = 125 °C	-	33	-	ns
Q_{RR}	反向恢复电荷	dI/dt = 200 A/μs V_R = 400 V，I_F = 3 A	T_J = 25 °C	-	39	55	nC
			T_J = 125 °C	-	75	-	nC
I_{RRM}	最大反向恢复电流	dI/dt = 200 A/μs V_R = 400 V，I_F = 3 A	T_J = 25 °C	-	2.2	-	A
			T_J = 125 °C	-	3.2	-	A
S	软度系数 = $\frac{t_B}{t_A}$	dI/dt = 200 A/μs V_R = 400 V，I_F = 3 A	T_J = 25 °C	-	0.7	-	
			T_J = 125 °C	-	0.34	-	

元件工程师请注意：X系列二极管的设计和结构采用肖特基技术。因此，元件工程师应规划其测试装置，使其与传统的肖特基测试装置类似。（详细信息请参考应用指南AN-300。）





PI-7614-041315

图1. 反向恢复定义

图2. 反向恢复测试电路

电气规格，T_J = 25 °C（除非另有指定）

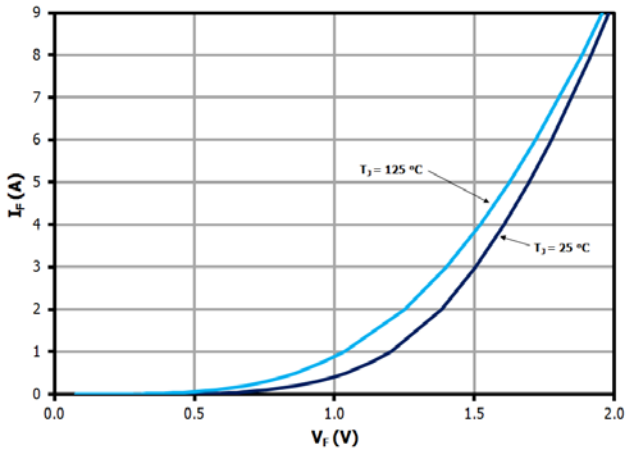


图3. 典型I_F与V_F比较

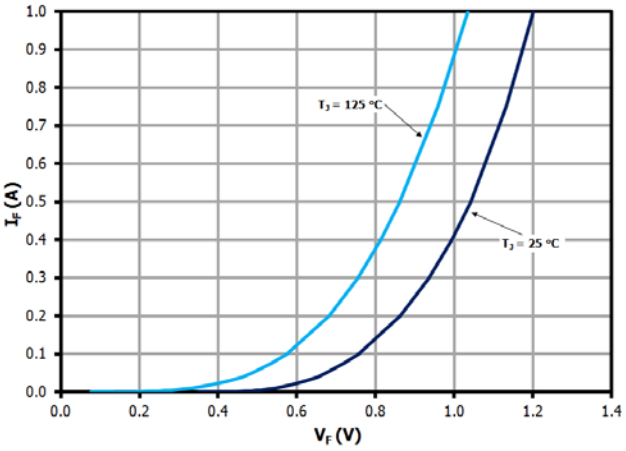


图4. 典型I_F与V_F比较

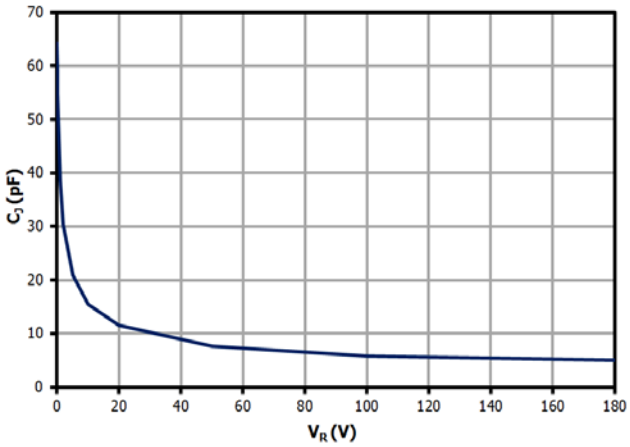


图5. 典型C_J与V_R比较

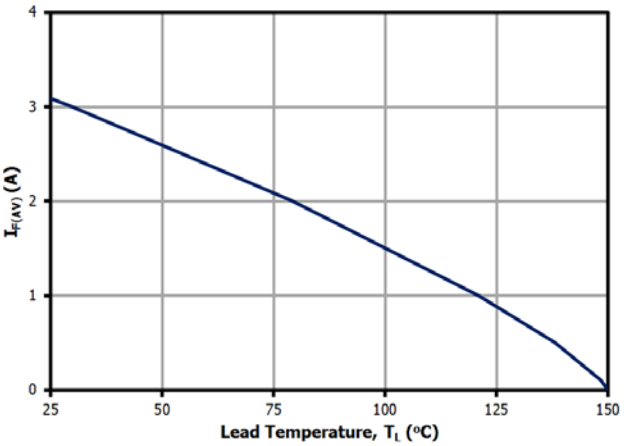


图6. DC电流降额曲线

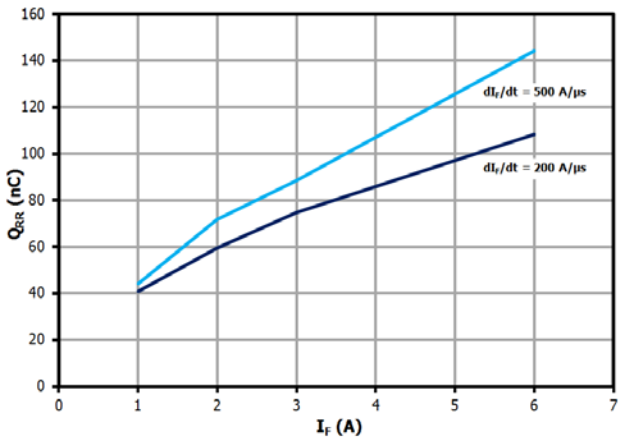


图7. 典型Q_{RR}与I_F比较，T_J = 125 °C

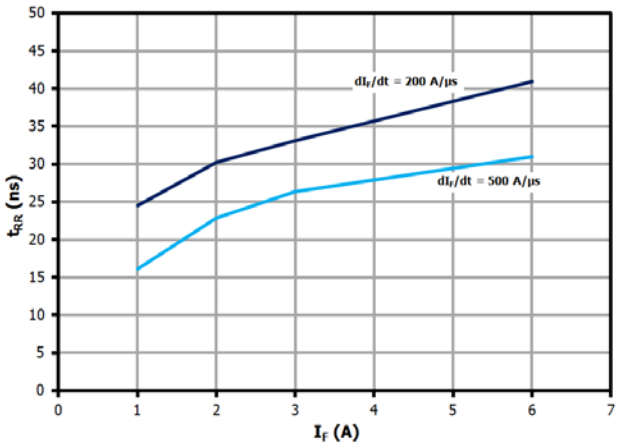


图8. 典型t_{RR}与I_F比较，T_J = 125 °C

电气规格，T_J = 25 °C（除非另有指定）

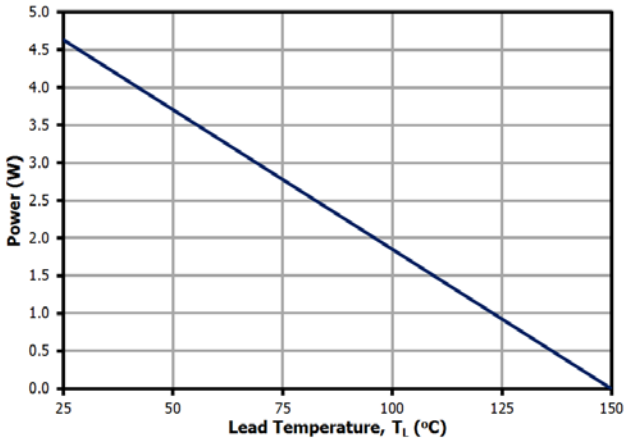


图9. 功率降额曲线

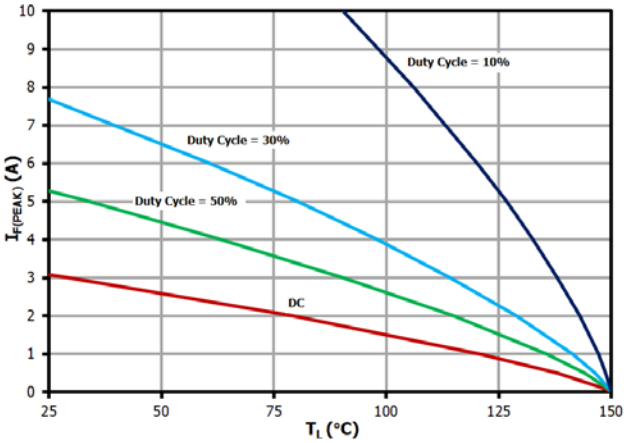


图10. I_F (Peak)与T_L比较，f = 70 kHz

LXA03D530

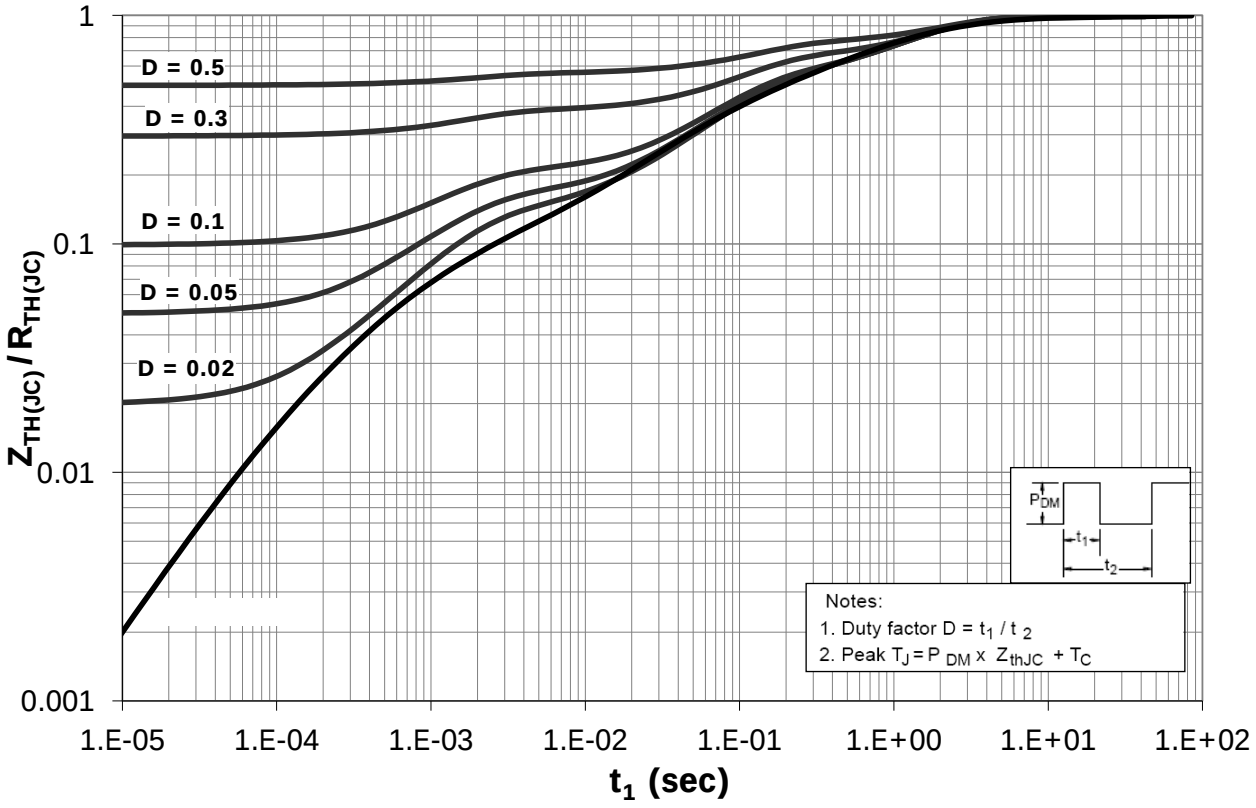
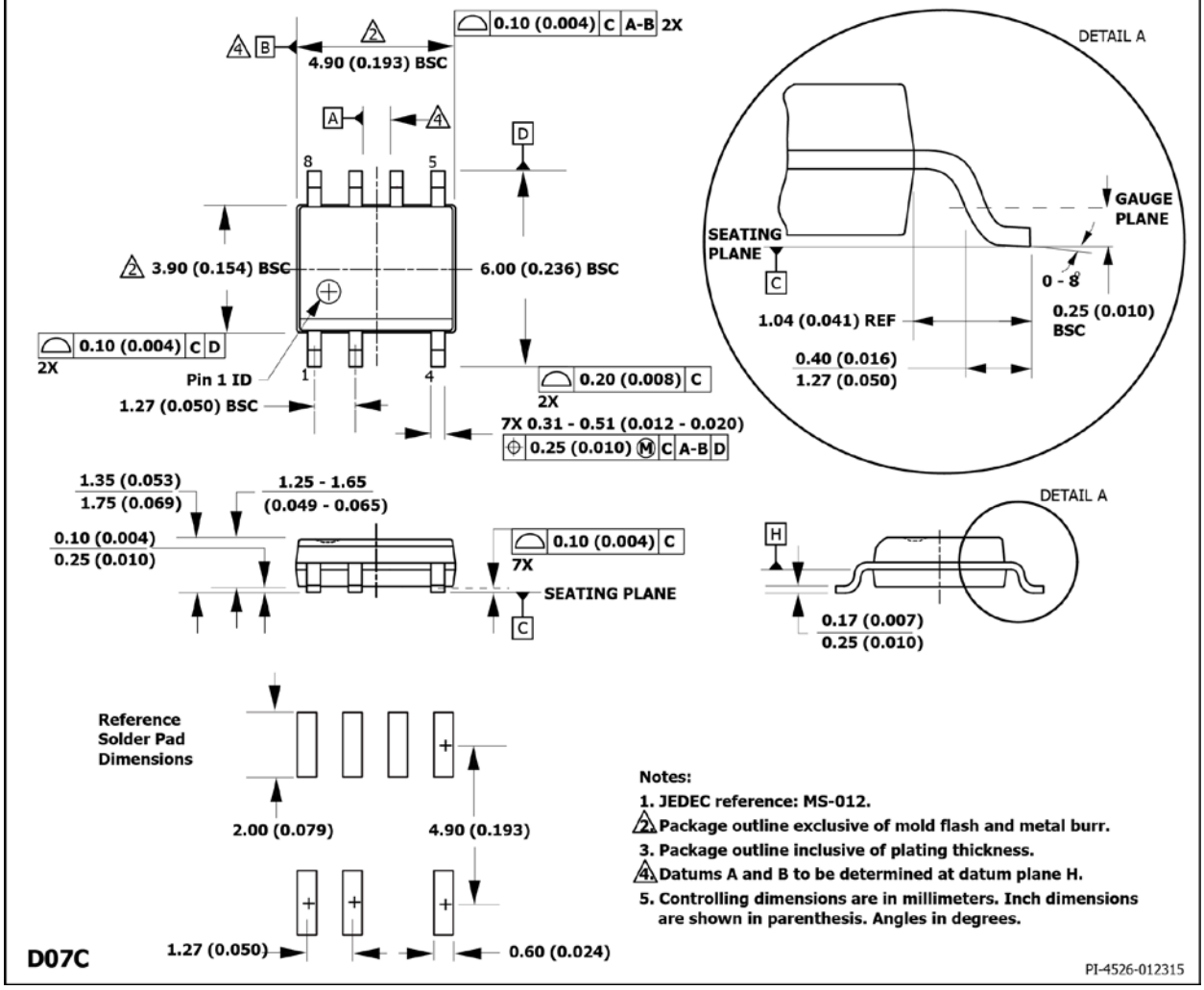


图11. 归一化最大瞬态热阻抗

SO-8C (D Package)



Notes:

1. JEDEC reference: MS-012.
2. Package outline exclusive of mold flash and metal burr.
3. Package outline inclusive of plating thickness.
4. Datums A and B to be determined at datum plane H.
5. Controlling dimensions are in millimeters. Inch dimensions are shown in parenthesis. Angles in degrees.

元件订购信息

元件编号	封装	包装
LXA03D530	SO-8C	2500件/卷

本文档所提供的信息可能会发生变更，恕不另行通知。

修订版本	注释	日期
1.0	初始版本。	04/15

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