N6008NZ

N-沟道场效应晶体管
600V, 8A, 0.75Ω

R07DS1045CC0100
Rev.1.00
2013 年 2 月 18 日

概述

N6008NZ 一款为大电流开关应用而设计的 N-沟道场效应晶体管。

特性

- 低漏极/源极通态电阻

  $R_{DS(on)}$ = 0.75Ω 最大值(V_{GS} = 10 V, I_D = 4.0 A)

- 低输入电容值

  C_{iss} = 2145pF 典型值 (V_{DS} = 10V, V_{GS} = 0 V)

- 大电流

  $I_{D(DC)}$ = ±8.0 A

- 符合 RoHS 规定

订购信息

订购型号	引脚镀层	包装	封装
N6008NZ-S17-AY *1	纯锡（锡制）	管装 50 片/管	全塑封 TO-220 1.95g 典型值

注释: *1. 无铅 (本产品在外部电极不含有铅.)

绝对最大额定值

（Ta = 25°C）

参数	符号	额定值	单位
漏极/源极电压(VGS = 0 V)	V_{DSS}	600	V
栅极/源极电压(V_{DS} = 0 V)	V_{GSS}	±30	V
漏极电流(DC)	$I_{D(DC)}$	±8.0	A
脉冲漏极电流 注1	$I_{D(pulse)}$	±32.0	A
总耗散功率(T_C = 25°C)	P_{T1}	40	W
总耗散功率(T_a = 25°C)	P_{T2}	2.0	W
容许沟道温度	T_{ch}	150	°C
储存温度	T_{stg}	-55 至 150	°C
单脉冲雪崩电流 注2	I_{AS}	8.0	A
单脉冲雪崩能量 注2	E_{AS}	42	mJ

热阻值

沟道-外壳间热阻	$R_{th(ch-c)}$	3.13	°C/W
沟道与周围环境之间的热阻抗值	$R_{th(ch-a)}$	62.5	°C/W

注释: *1. PW ≤ 10 μs, 占空比 ≤ 1%
*2. 起动 T_{ch} = 25°C, R_G = 25 Ω, V_{DD} = 150 V, V_{GS} = 20 → 0 V, L = 1mH

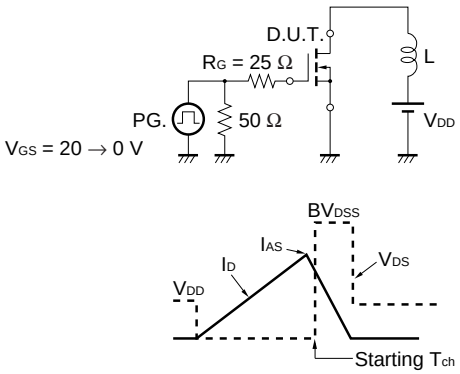
电特性

（Ta = 25°C）

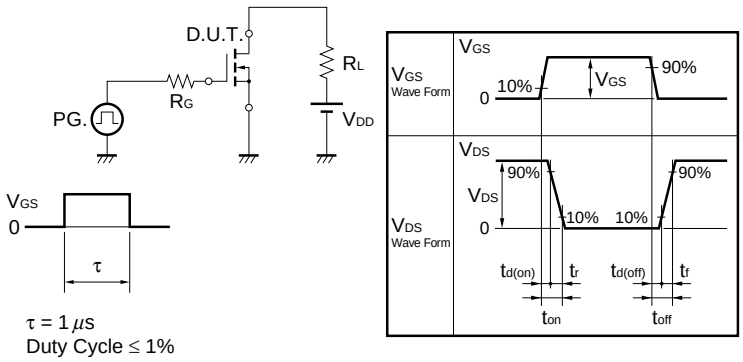
参数	符号	最小.	典型	最大	单位	测定条件
漏极截止电流	I_{DSS}			1	μA	V_{DS} = 600 V, V_{GS} = 0 V
栅极截止电流	I_{GSS}			±100	nA	V_{GS} = ± 30 V, V_{DS} = 0 V
栅极阈值电压	$V_{GS(off)}$	2.0	3.0	4.0	V	V_{DS} = 10V, I_D = 1mA
正向传输导纳[注3]	$\|y_{fs}\|$	2.5	5.0		S	V_{DS} = 10 V, I_D = 4.0 A
漏极/源极通态电阻[注3]	$R_{DS(on)}$		0.6	0.75	Ω	V_{GS} = 10 V, I_D = 4.0 A
输入电容	C_{iss}		2145		pF	V_{DS} = 10 V,
输出电容	C_{oss}		780		pF	V_{GS} = 0 V,
反向传输电容	C_{rss}		160		pF	f = 1 MHz
开启延迟时间	$t_{d(on)}$		23		ns	V_{DD} = 150 V, I_D = 4.0 A,
上升时间	t_r		8.6		ns	V_{GS} = 10 V,
关断延迟时间	$t_{d(off)}$		67		ns	R_G = 10 Ω
下降时间	t_f		9.3		ns	
栅极充电电荷量	Q_G		45		nC	V_{DD} = 450 V,
栅极/源极充电电荷量	Q_{GS}		11		nC	V_{GS} = 10 V,
栅极/漏极充电电荷量	Q_{GD}		18		nC	I_D = 8.0 A
体二极管正向电压[注3]	$V_{F(S-D)}$		0.87	1.5	V	I_F = 8.0 A, V_{GS} = 0 V
体二极管反向恢复时间	t_{rr}		400		ns	I_F = 8.0 A, V_{GS} = 0 V,
体二极管反向恢复电荷	Q_{rr}		2300		nC	di/dt = 50 A/μs

注：3. 脉冲测试

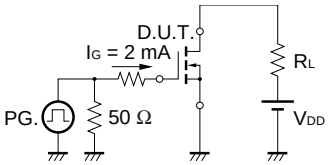
测试电路 1 抗雪崩能力



测试电路 2 开关时间

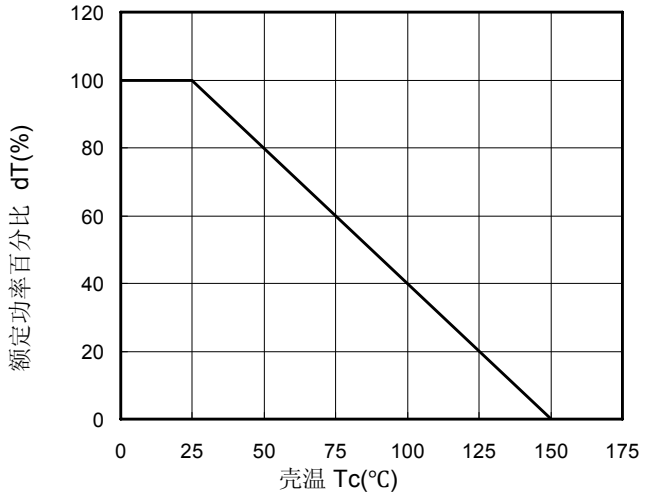


测试电路 3 栅极电荷量

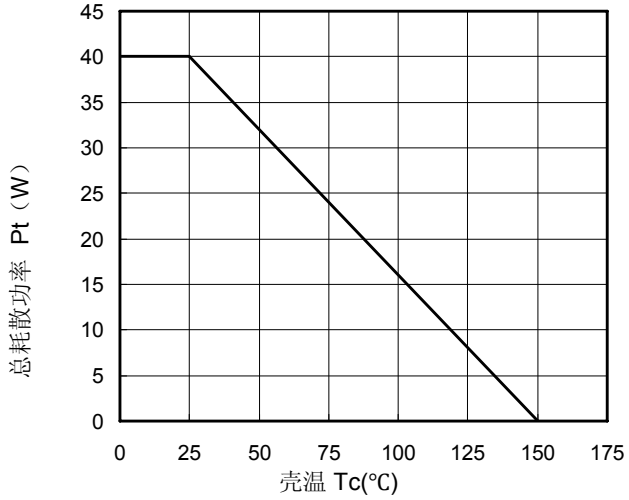


典型特性曲线(T_a = 25°C)

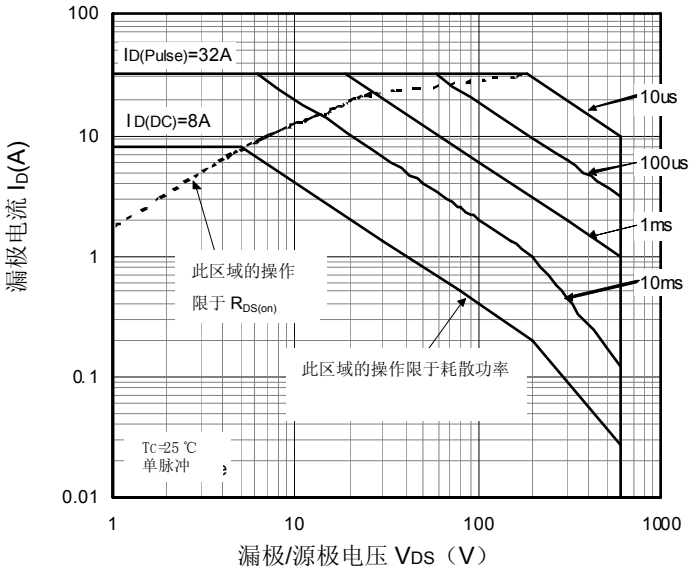
正向偏压安全工作区的降额系数



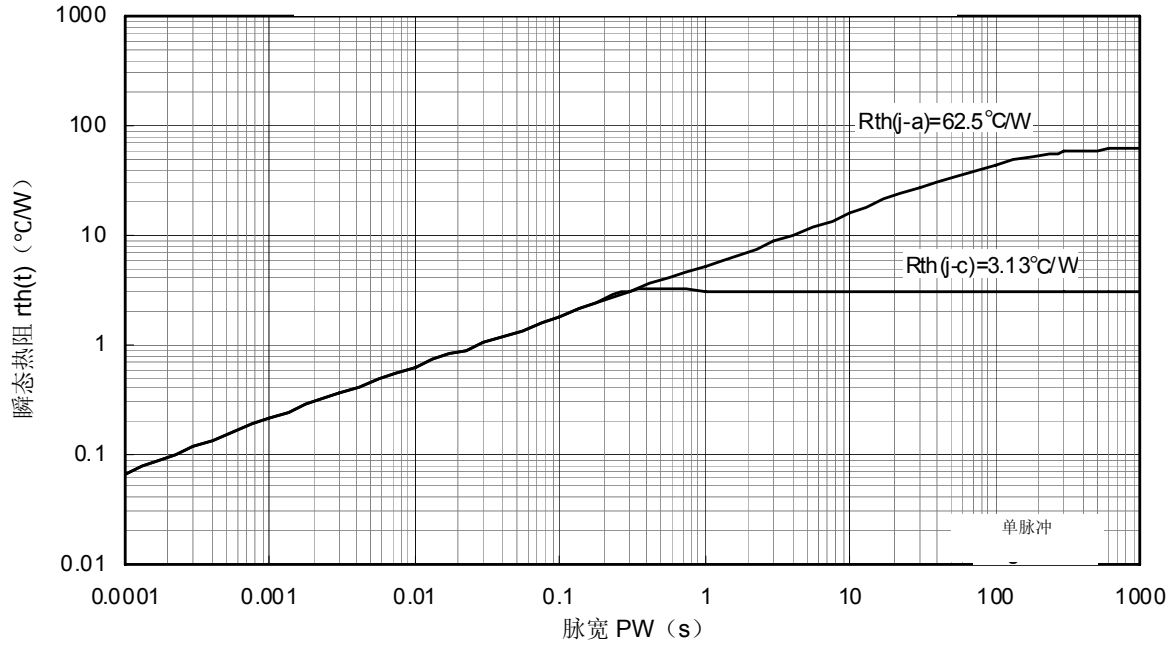
总耗散功率-壳温



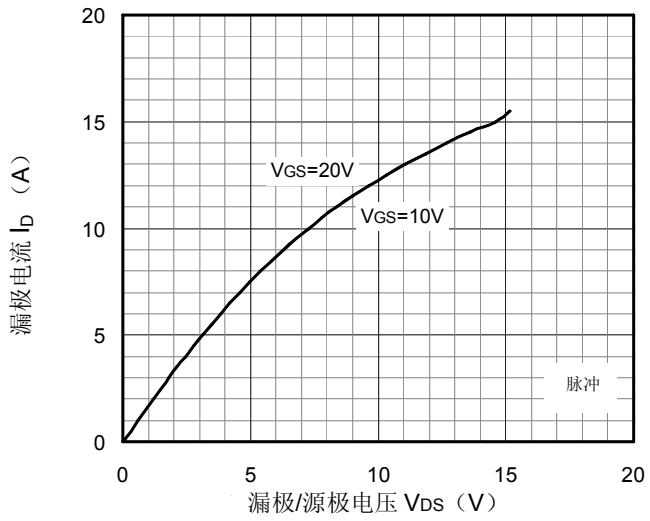
最大安全工作区域



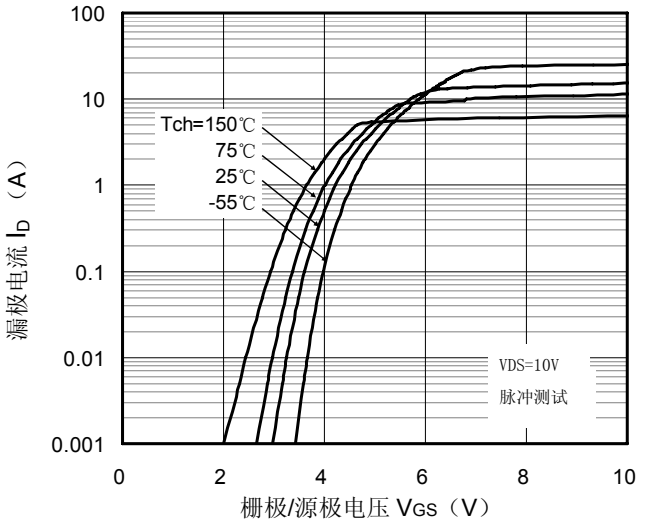
瞬态热阻值特性



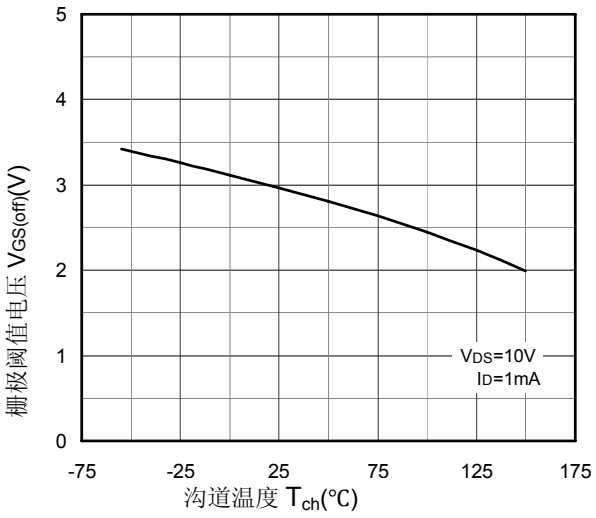
典型输出特性



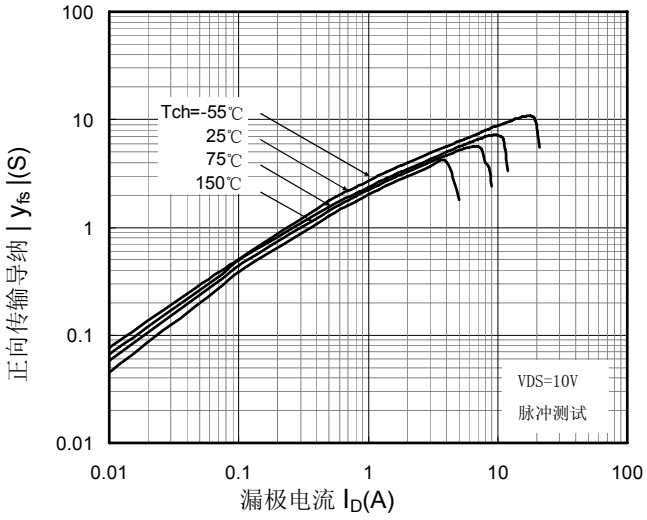
典型传输特性



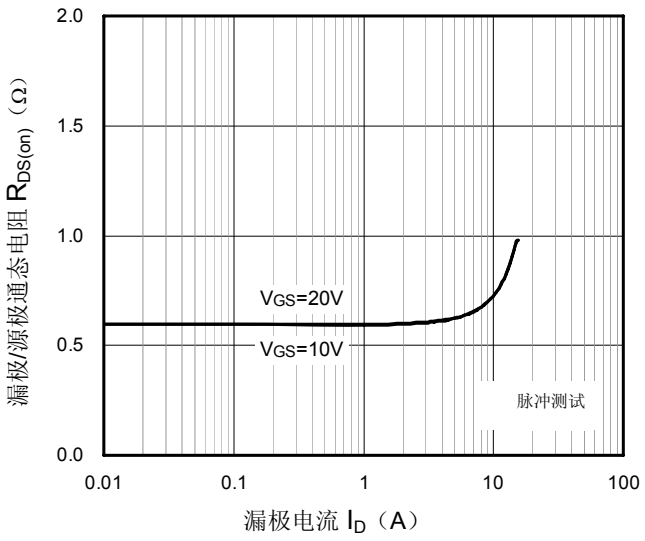
栅极阈值电压-沟道温度



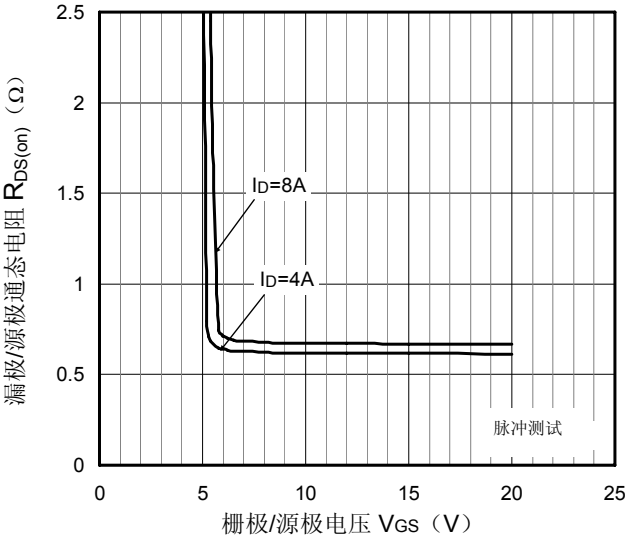
正向传输导纳-漏极电流



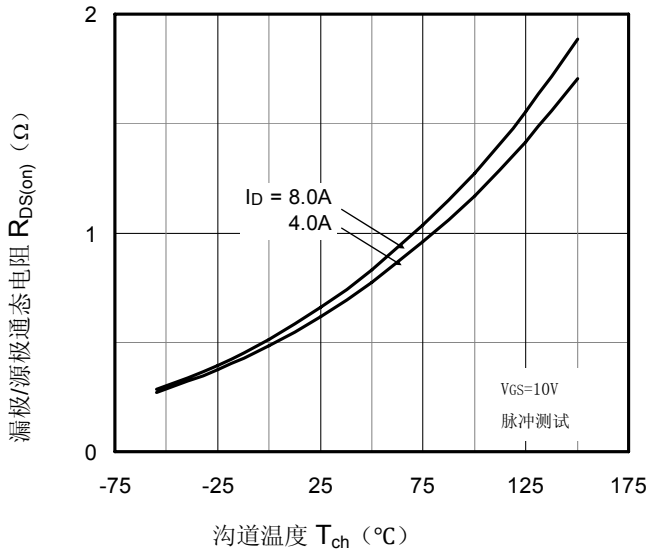
漏极/源极通态电阻-漏极电流



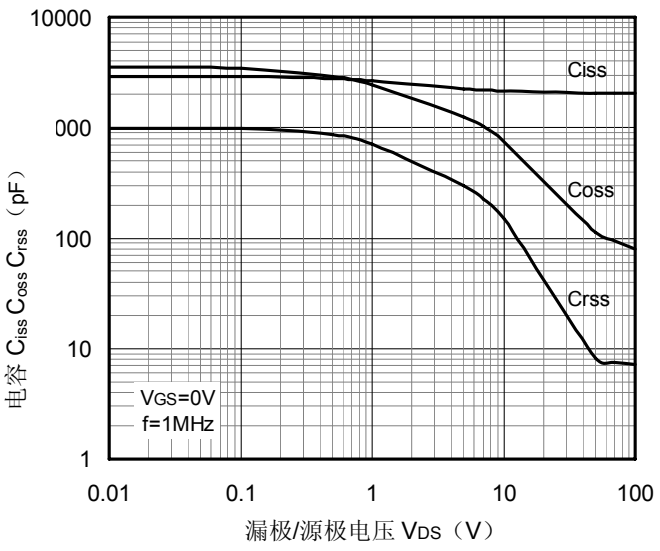
漏极/源极通态电阻-栅极/源极电压



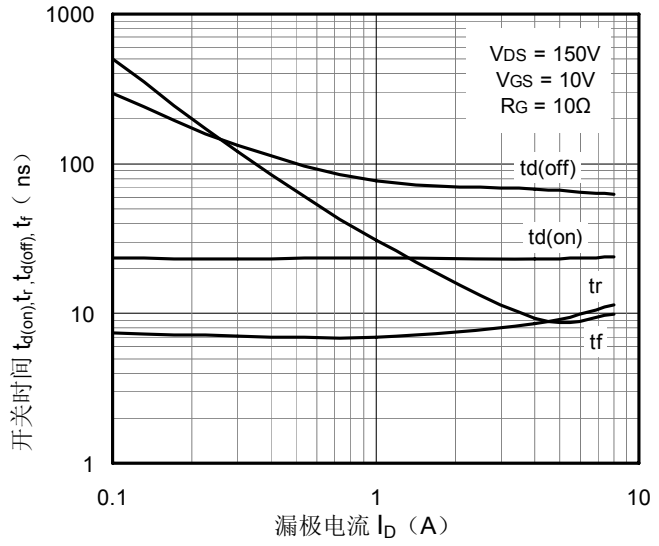
漏极/源极通态电阻-沟道温度



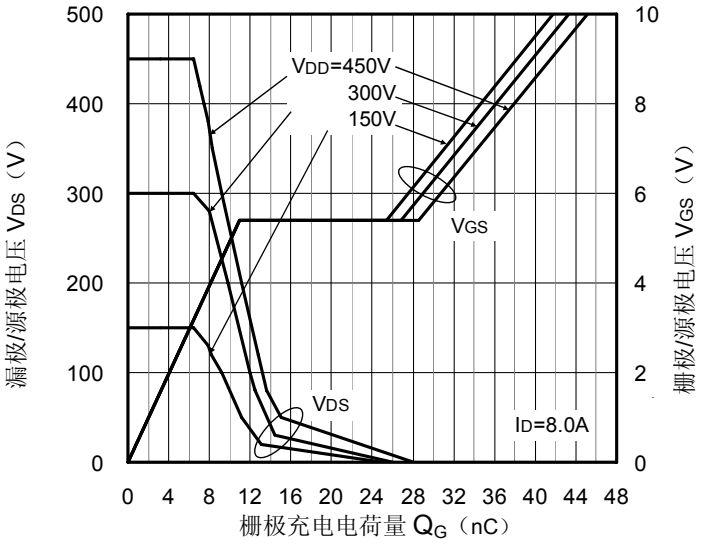
电容-漏极/源极电压



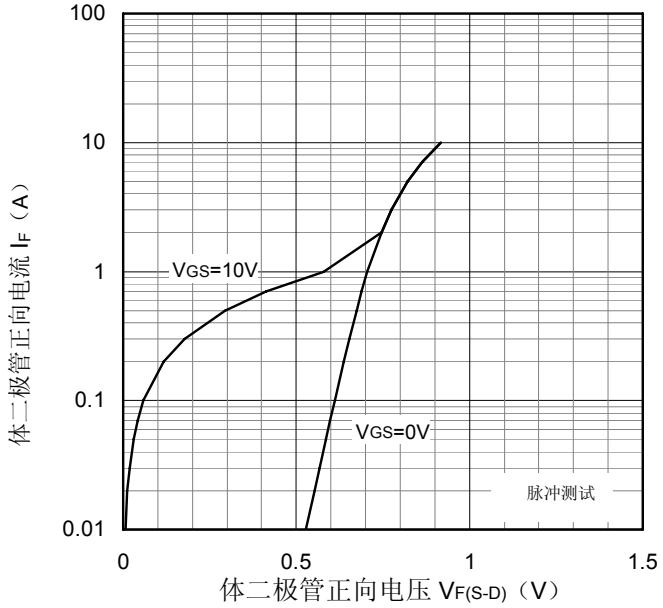
开关特性



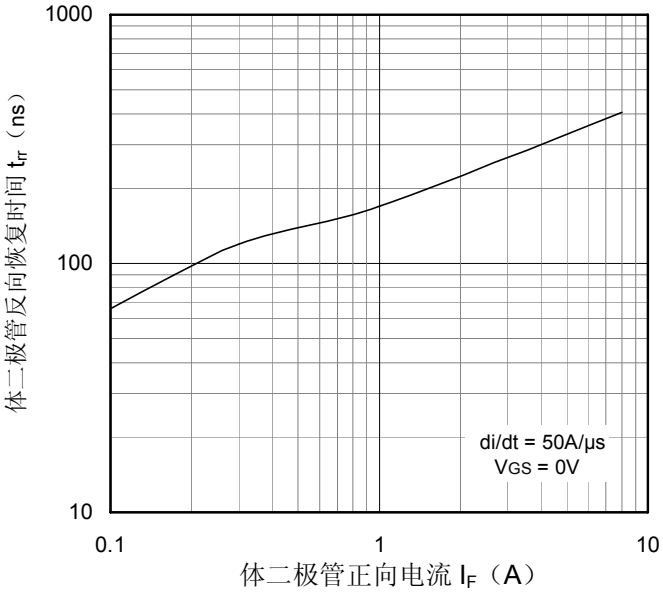
输入时序特性



体二极管正向电流-正向电压

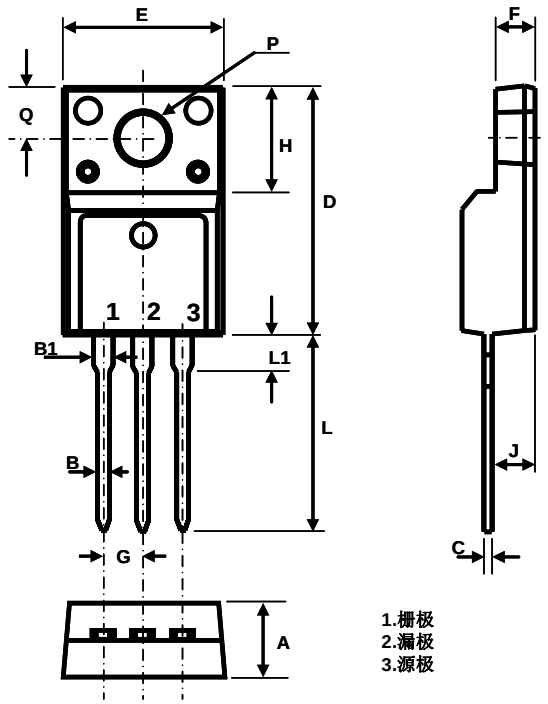


体二极管反向恢复时间-正向电流



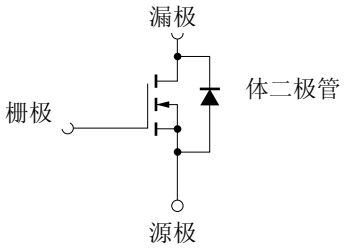
封装形式（单位：mm）

全塑封 TO-220



符号	封装规格尺寸	
	最小	最大
A	4.53	4.93
B	0.71	0.91
B1	1.15	1.39
C	0.36	0.53
D	15.67	16.07
E	9.96	10.36
F	2.34	2.74
G	2.54典型值.	
H	6.50	6.90
J	2.56	2.96
L	12.78	13.18
L1	2.90	3.30
P	2.98	3.38
Q	3.10	3.50

等效电路



注意事项 当本器件暴露到强电场时，可能会导致氧化栅极的破坏，并最终影响器件的运行。因此必须采取措施，尽可能防止静电产生。一旦有静电发生，必须立即释放。

修订版	日期	描述	
		页码	概要
1.00	2013 年 2 月 18 日	–	第一版发行

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