

RJK60S3DPD

600V - 12A - 超结场效应晶体管
快速电源开关

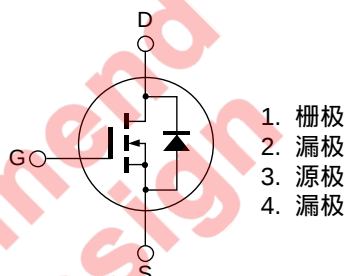
R07DS0731CJ0300
修订版本 3.00
Nov 19, 2012

特点

- 超结场效应晶体管
- 低漏极/源极通态电阻
 $R_{DS(on)} = 0.35 \Omega$ 典型值 ($I_D = 6 A$, $V_{GS} = 10 V$, $T_a = 25^\circ C$)
- 快速开关时间
 $t_f = 21 ns$ 典型值 ($I_D = 6 A$, $V_{GS} = 10 V$, $R_L = 50 \Omega$, $R_g = 10 \Omega$, $T_a = 25^\circ C$)

封装形式

RENESAS 封装代码: PRSS0004ZG-A
(封装名称: MP-3A)



绝对最大额定值

($T_a = 25^\circ C$)

参数	符号	额定值	单位
漏极/源极电压	V_{DSS}	600	V
栅极/源极电压	V_{GSS}	+30, -20	V
漏极电流	$T_c = 25^\circ C$ I_D 注1,2	12.0	A
	$T_c = 100^\circ C$ I_D 注1,2	7.6	A
脉冲漏极电流	I_D (pulse) 注1	24	A
体二极管反向漏极电流	I_{DR} 注1	12	A
体二极管反向脉冲漏极电流	I_{DR} (pulse) 注1	24	A
雪崩电流	I_{AP} 注3	3	A
雪崩能量	E_{AR} 注3	0.49	mJ
沟道最大容许损耗	P_{ch} 注4	73.5	W
沟道-外壳间热阻	θ_{ch-c}	1.7	$^\circ C/W$
沟道温度	T_{ch}	150	$^\circ C$
储存温度	T_{stg}	-55 to +150	$^\circ C$

- 注:
- 限于 T_{ch} 的最大值
 - 最大工作周期为 $D = 0.75$
 - $ST_{ch} = 25^\circ C$, $T_{ch} \leq 150^\circ C$
 - 在 $T_c = 25^\circ C$ 的容许值

电特性

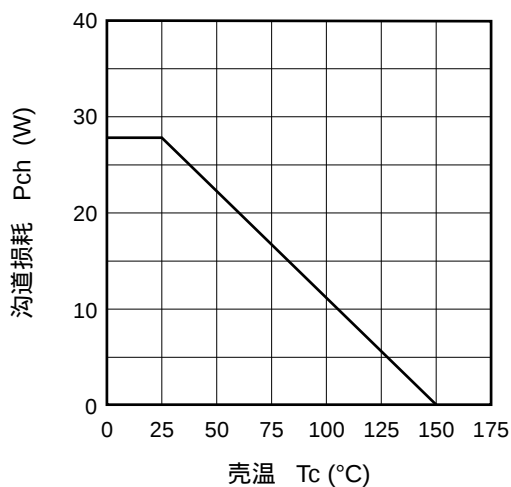
(Ta = 25°C)

参数	符号	最小值	典型值	最大值	单位	测定条件
漏极/源极破坏电压	$V_{(BR)DSS}$	600	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
漏极截止电流	I_{DSS}	—	—	1	mA	$V_{DS} = 600 \text{ V}$, $V_{GS} = 0$
栅极截止电流	I_{GSS}	—	—	± 0.1	μA	$V_{GS} = +30\text{V}$, -20 V , $V_{DS} = 0$
栅极/源极截止电压	$V_{GS(off)}$	3	—	5	V	$V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ mA}$
静态漏极/源极通态电阻	$R_{DS(on)}$	—	0.35	0.44	Ω	$I_D = 6 \text{ A}$, $V_{GS} = 10 \text{ V}$ 注5
	$R_{DS(on)}$	—	0.87	—	Ω	Ta = 150°C $I_D = 6 \text{ A}$, $V_{GS} = 10 \text{ V}$ 注5
栅极电阻	Rg	—	2.5	—	Ω	f = 1 MHz $V_{DS} = 25 \text{ V}$, $V_{GS} = 0$
输入电容	Ciss	—	720	—	pF	$V_{DS} = 25 \text{ V}$
输出电容	Coss	—	980	—	pF	$V_{GS} = 0$
反向传输电容	Crss	—	3.7	—	pF	f = 100 kHz
接通延迟时间	$t_{d(on)}$	—	13	—	ns	$I_D = 6 \text{ A}$
上升时间	t_r	—	18	—	ns	$V_{GS} = 10 \text{ V}$
关断延迟时间	$t_{d(off)}$	—	25	—	ns	$R_L = 50 \Omega$
下降时间	t_f	—	18	—	ns	Rg = 10 Ω 注5
栅极充电电荷量	Qg	—	13.6	—	nC	$V_{DD} = 480 \text{ V}$
栅极/源极充电电荷量	Qgs	—	4.8	—	nC	$V_{GS} = 10 \text{ V}$
栅极/漏极充电电荷量	Qgd	—	3.9	—	nC	$I_D = 12 \text{ A}$ 注5
体二极管正向电压	V_{DF}	—	1.0	1.6	V	$I_F = 12 \text{ A}$, $V_{GS} = 0$ 注5
体二极管反向恢复时间	t_{rr}	—	320	—	ns	$I_F = 12 \text{ A}$
体二极管反向恢复电流	I_{rr}	—	20	—	A	$V_{GS} = 0$
体二极管反向恢复电荷	Q_{rr}	—	3.7	—	μC	$di_F/dt = 100 \text{ A}/\mu\text{s}$ 注5

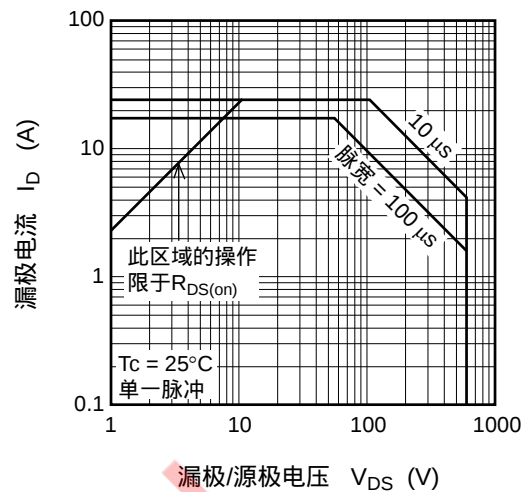
注: 5. 脉冲测试

主要特性

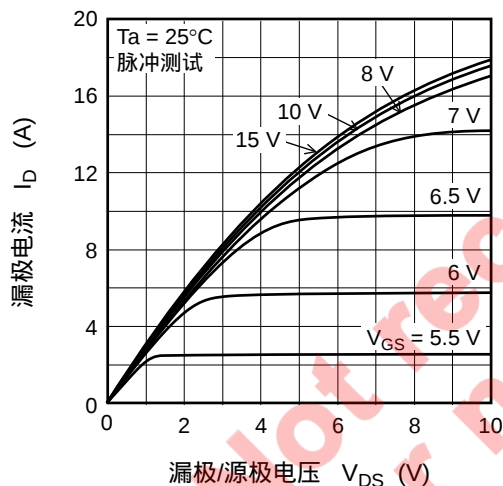
沟道损耗-壳温



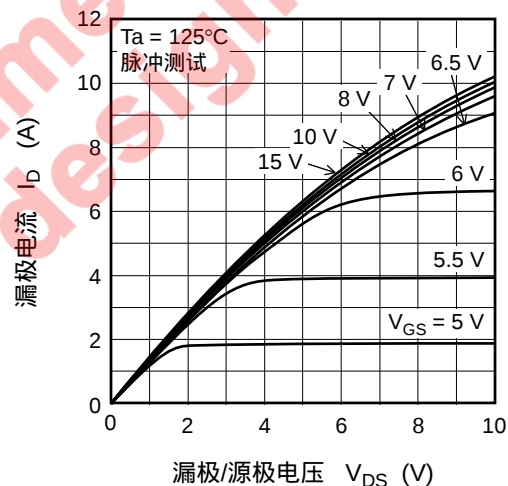
最大安全工作区域



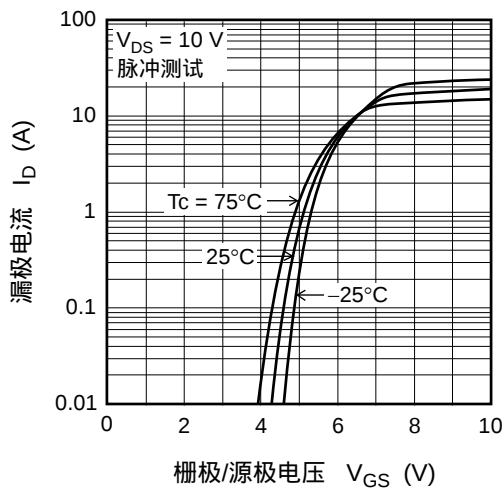
典型输出特性



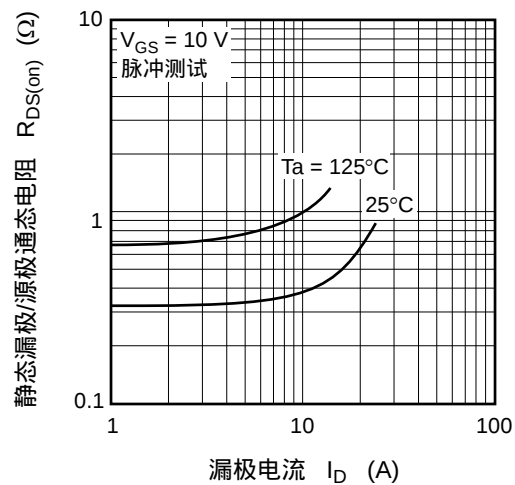
典型输出特性

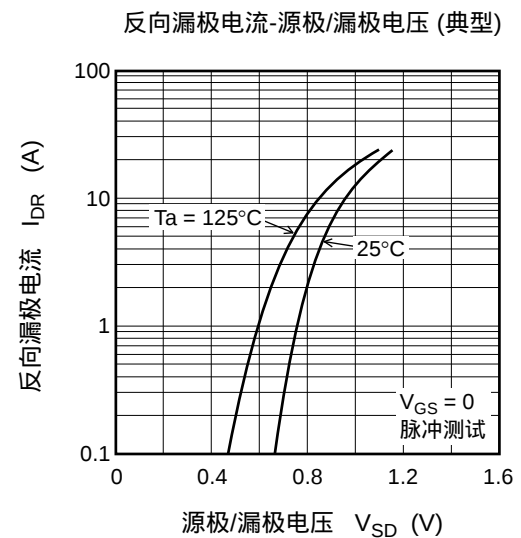
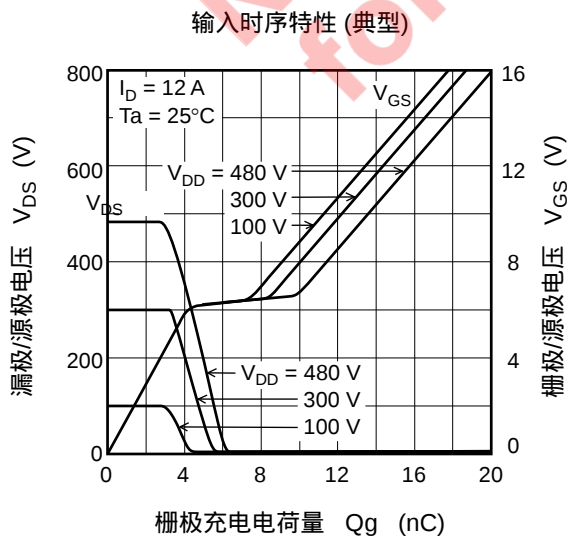
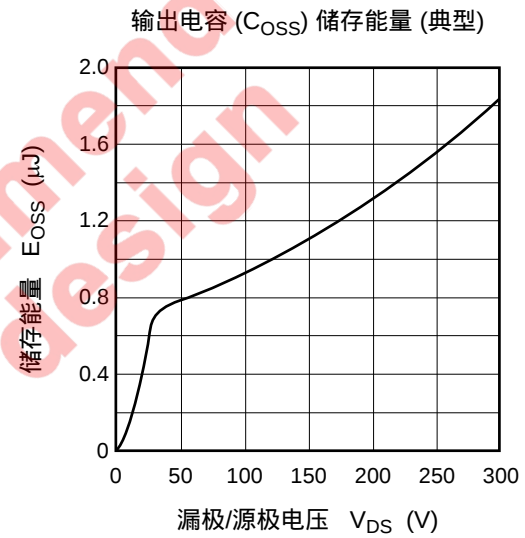
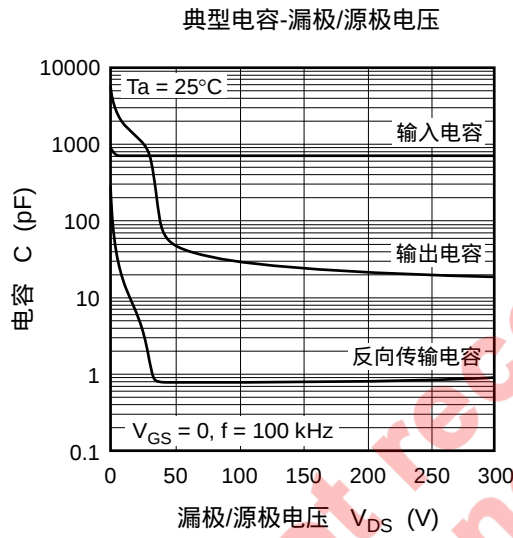
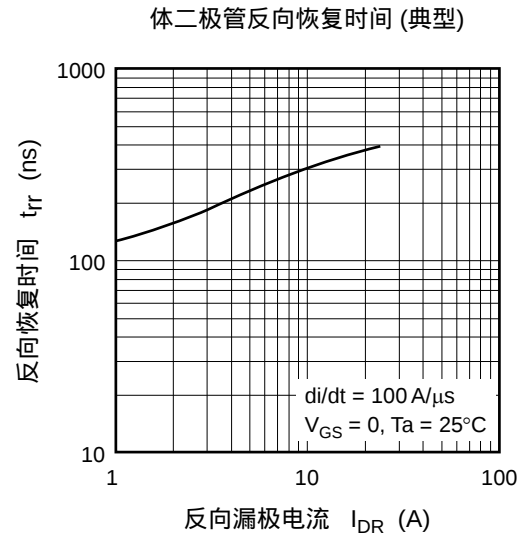
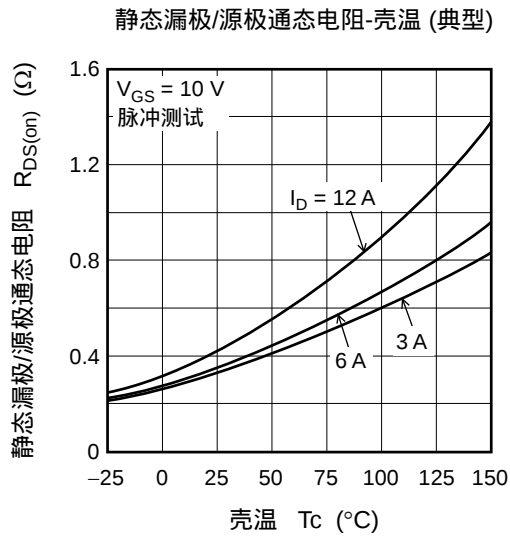


典型传输特性

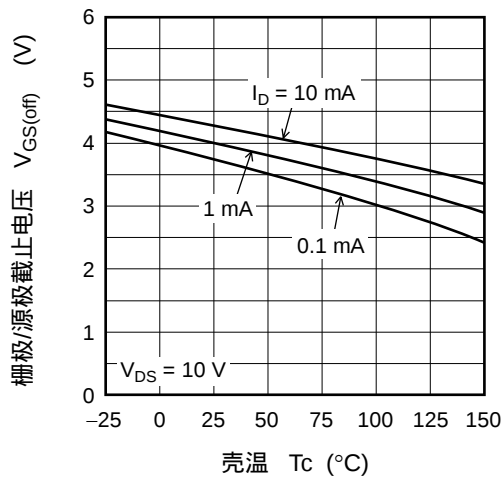


静态漏极/源极通态电阻-漏极电流 (典型)

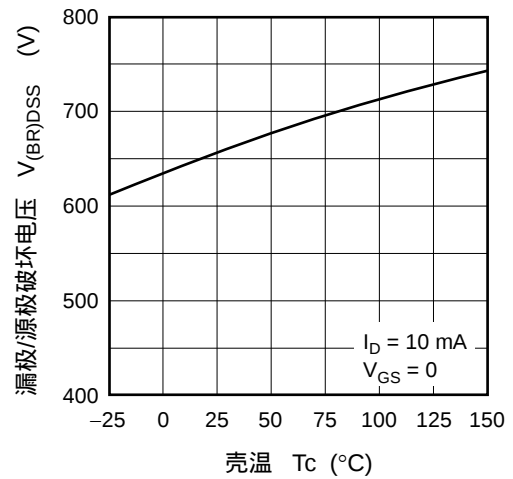




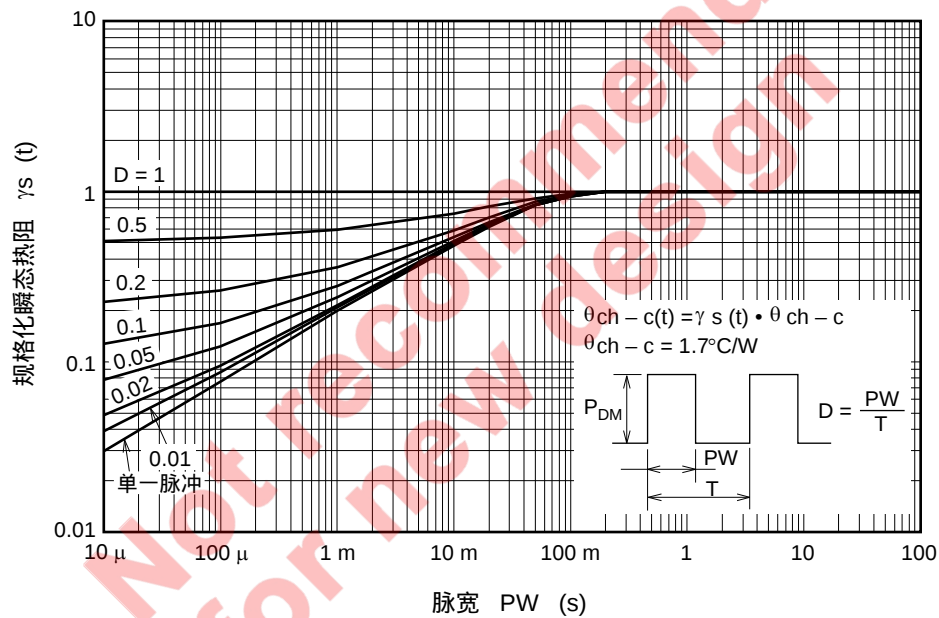
栅极/源极截止电压-壳温 (典型)



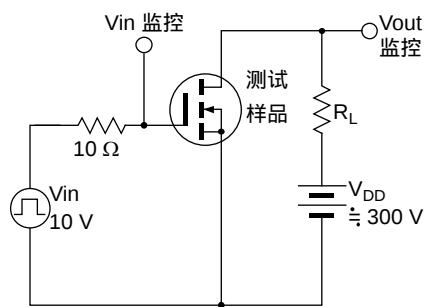
漏极/源极破坏电压-壳温 (典型)



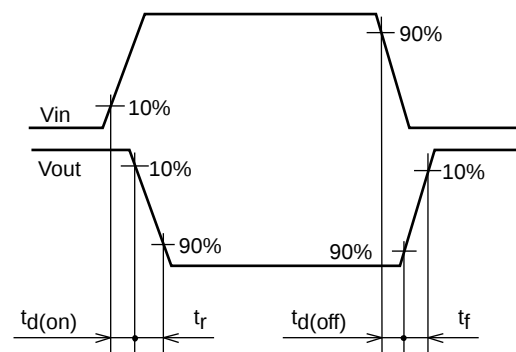
瞬态热阻特性规格化



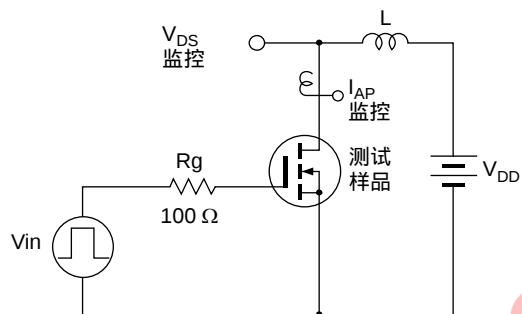
开关时间测定电路



波形

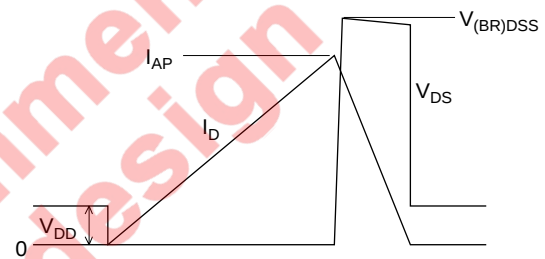


雪崩测定电路

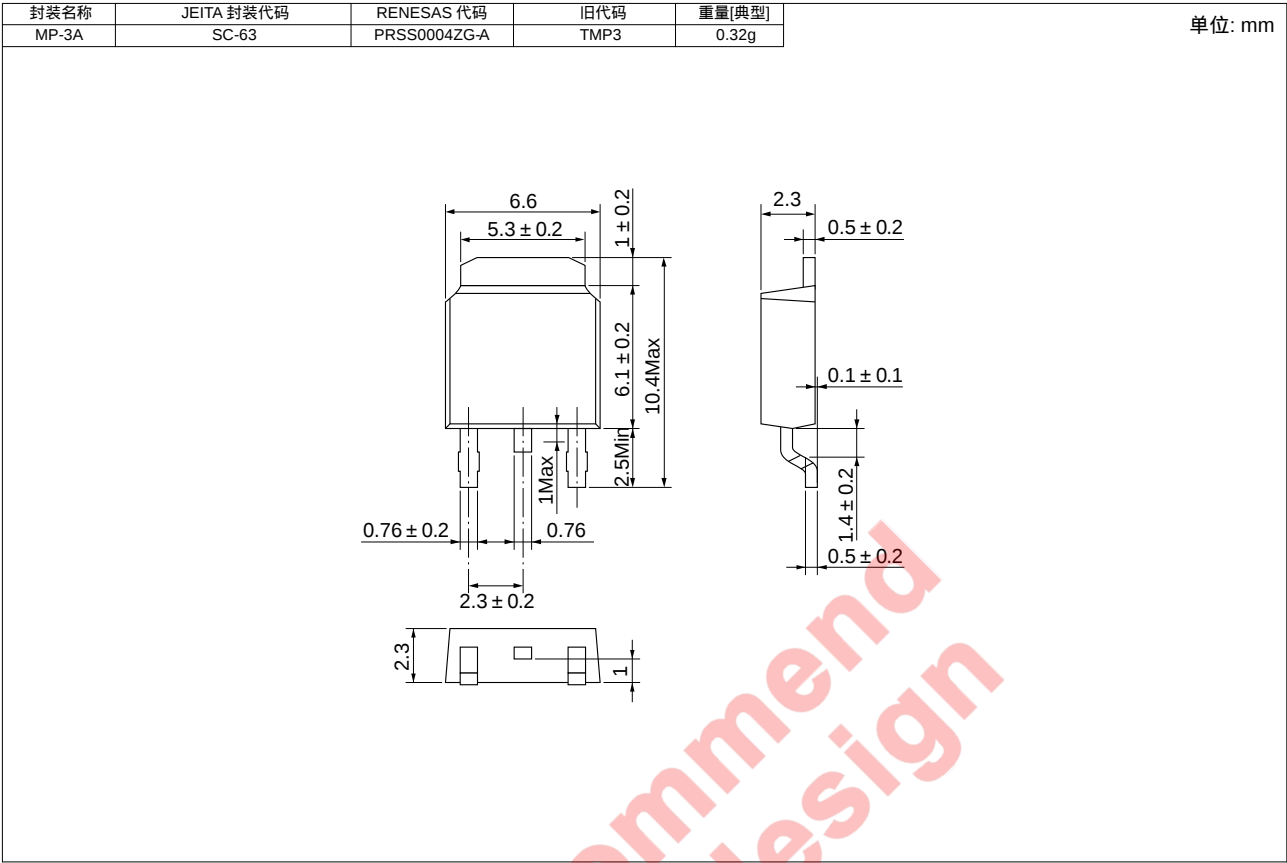


雪崩波形

$$E_{AR} = \frac{1}{2} L \cdot I_{AP}^2 \cdot \frac{V_{DSS}}{V_{DSS} - V_{DD}}$$



封装尺寸



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订购型号	数量	运输包装
RJK60S3DPD-00#J2	3000 枚	带卷包装

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