

RJK60S8DPK-M0

600V - 55A - 超结场效应晶体管
快速电源开关

R07DS0644CJ0200

修订版本 2.00

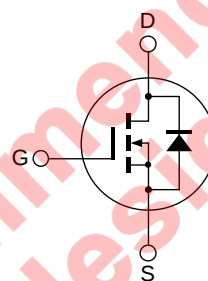
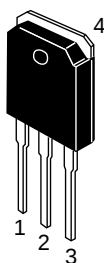
Oct 30, 2012

特点

- 超结场效应晶体管
- 低漏极/源极通态电阻
 $R_{DS(on)} = 0.045 \Omega$ 典型值 ($I_D = 27.5 \text{ A}$, $V_{GS} = 10 \text{ V}$, $T_a = 25^\circ\text{C}$)
- 快速开关时间
 $t_f = 54 \text{ ns}$ 典型值 ($I_D = 27.5 \text{ A}$, $V_{GS} = 10 \text{ V}$, $R_L = 10.9 \Omega$, $R_g = 10 \Omega$, $T_a = 25^\circ\text{C}$)

封装形式

RENESAS 封装代码: PRSS0004ZH-A
(封装名称: TO-3PSG)



1. 栅极
2. 漏极
3. 源极
4. 漏极

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	V_{DSS}	600	V
栅极/源极电压	V_{GSS}	+30, -20	V
漏极电流	I_D 注1	55	A
	I_D 注1	34.8	A
脉冲漏极电流	I_D (pulse) 注1	110	A
体二极管反向漏极电流	I_{DR} 注1	55	A
体二极管反向脉冲漏极电流	I_{DR} (pulse) 注1	110	A
雪崩电流	I_{AP} 注2	9.2	A
雪崩能量	E_{AR} 注2	4.61	mJ
沟道最大容许损耗	P_{ch} 注3	416.6	W
沟道-外壳间热阻	θ_{ch-c}	0.3	°C/W
沟道温度	T_{ch}	150	°C
储存温度	T_{stg}	-55 to +150	°C

- 注:
1. 限于 T_{ch} 的最大值
 2. $ST_{ch} = 25^\circ\text{C}$, $T_{ch} \leq 150^\circ\text{C}$
 3. 在 $T_c = 25^\circ\text{C}$ 的容许值

电特性

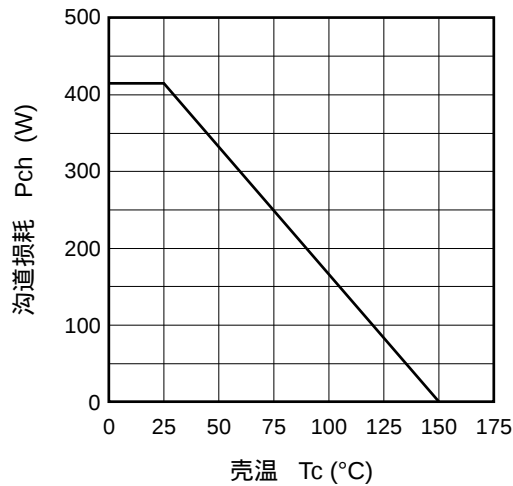
(Ta = 25°C)

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	$R_{DS(on)}$	—	0.045	0.056	Ω	$I_D = 27.5 \text{ A}$, $V_{GS} = 10 \text{ V}$ 注4
	$R_{DS(on)}$	—	0.117	—	Ω	Ta = 150°C $I_D = 27.5 \text{ A}$, $V_{GS} = 10 \text{ V}$ 注4
栅极电阻	Rg	—	1.0	—	Ω	f = 1 MHz $V_{DS} = 25 \text{ V}$, $V_{GS} = 0 \text{ V}$
输入电容	Ciss	—	5300	—	pF	$V_{DS} = 25 \text{ V}$
输出电容	Coss	—	7000	—	pF	$V_{GS} = 0$
反向传输电容	Crss	—	24.6	—	pF	f = 100 kHz
接通延迟时间	$t_{d(on)}$	—	58	—	ns	$I_D = 27.5 \text{ A}$
上升时间	t_r	—	56	—	ns	$V_{GS} = 10 \text{ V}$
关断延迟时间	$t_{d(off)}$	—	124	—	ns	$R_L = 10.9 \Omega$
下降时间	t_f	—	54	—	ns	Rg = 10 Ω 注4
栅极充电电荷量	Qg	—	82	—	nC	$V_{DD} = 480 \text{ V}$
栅极/源极充电电荷量	Qgs	—	31	—	nC	$V_{GS} = 10 \text{ V}$
栅极/漏极充电电荷量	Qgd	—	22	—	nC	$I_D = 55 \text{ A}$ 注4
体二极管正向电压	V_{DF}	—	1.0	1.6	V	$I_F = 55 \text{ A}$, $V_{GS} = 0$ 注4
体二极管反向恢复时间	t_{rr}	—	590	—	ns	$I_F = 55 \text{ A}$
体二极管反向恢复电流	I_{rr}	—	29	—	A	$V_{GS} = 0$
体二极管反向恢复电荷	Q_{rr}	—	11	—	μC	$di_F/dt = 100 \text{ A}/\mu\text{s}$ 注4

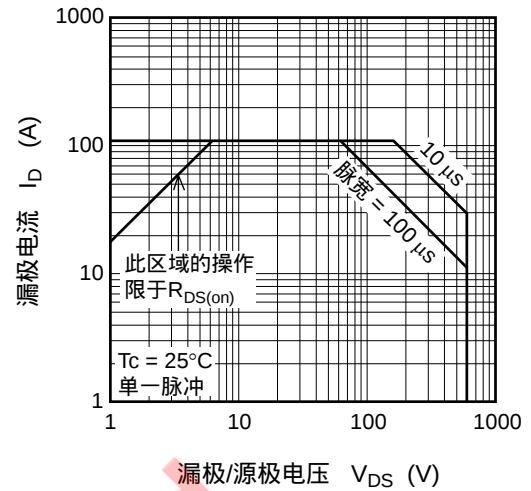
注: 4. 脉冲测试

主要特性

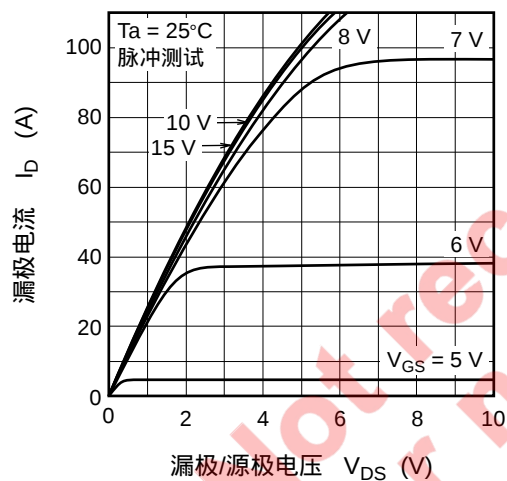
沟道损耗-壳温



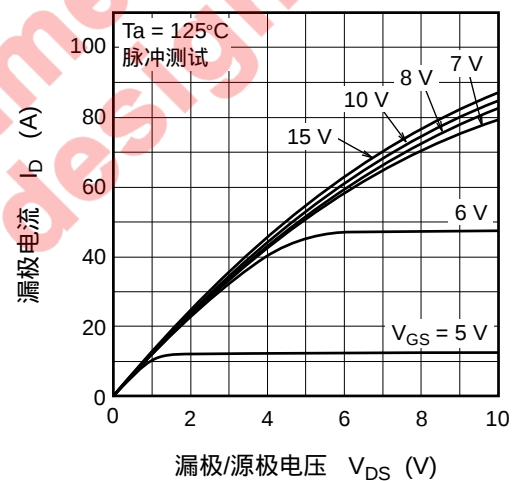
最大安全工作区域



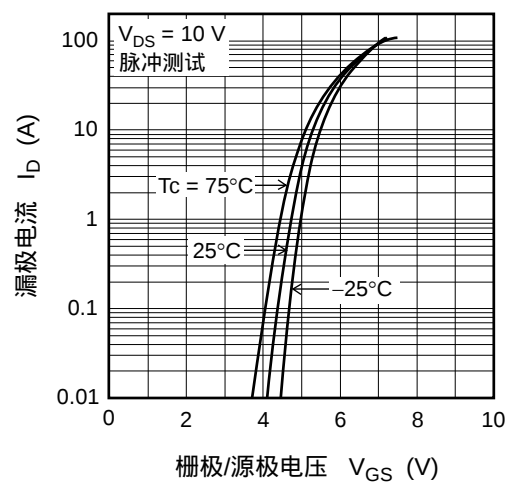
典型输出特性



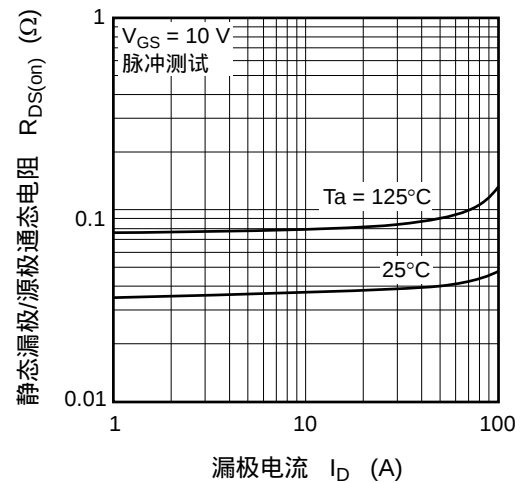
典型输出特性



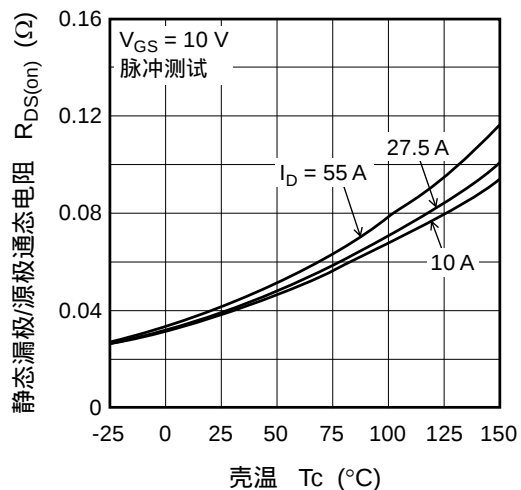
典型传输特性



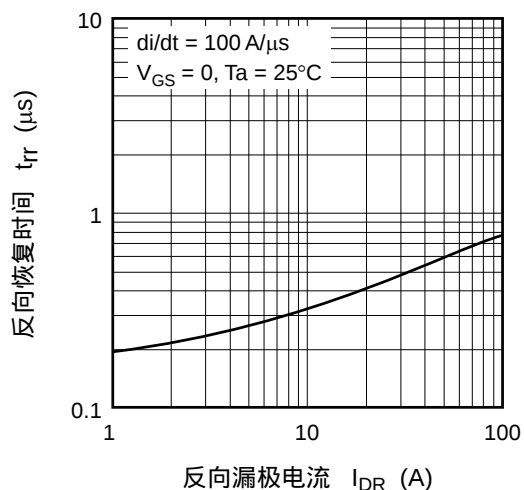
静态漏极/源极通态电阻-漏极电流 (典型)



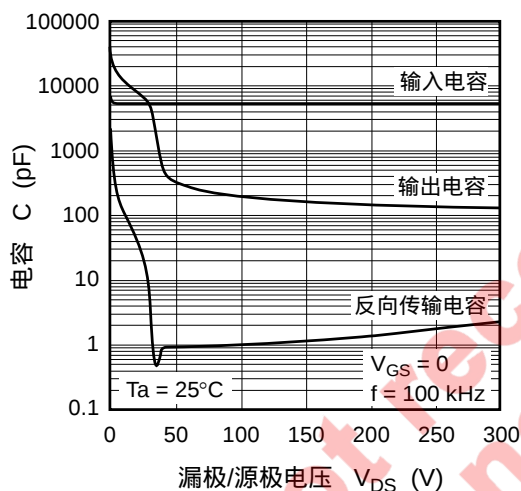
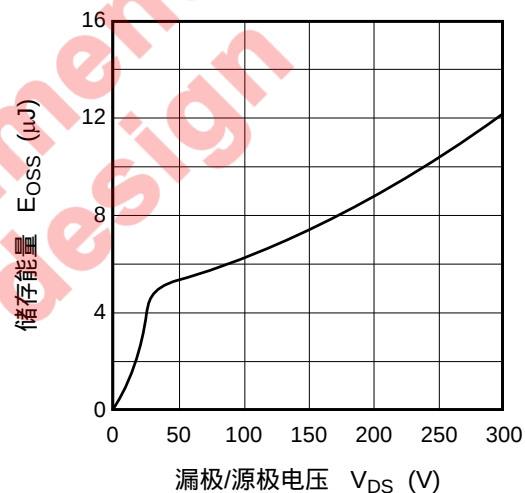
静态漏极/源极通态电阻-壳温 (典型)



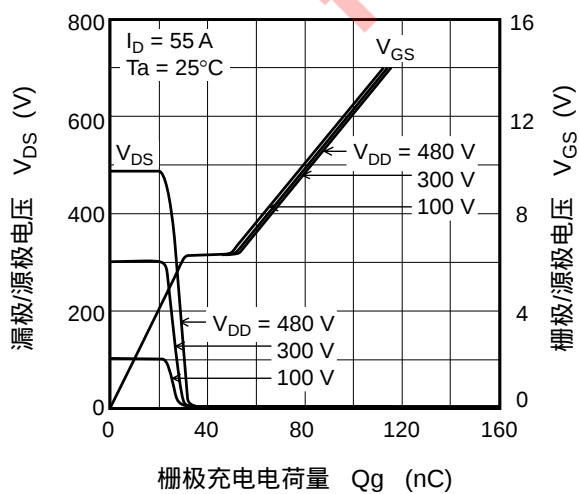
体二极管反向恢复时间 (典型)



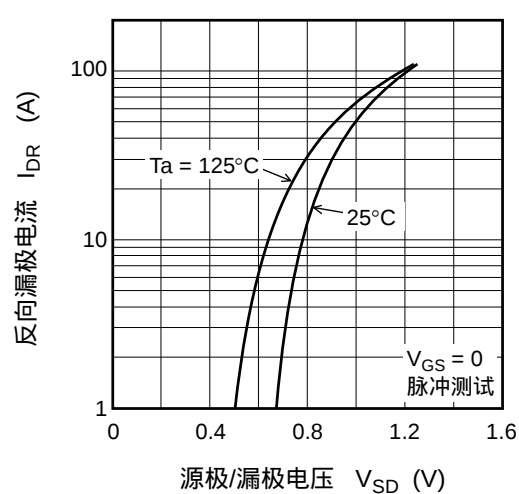
典型电容-漏极/源极电压

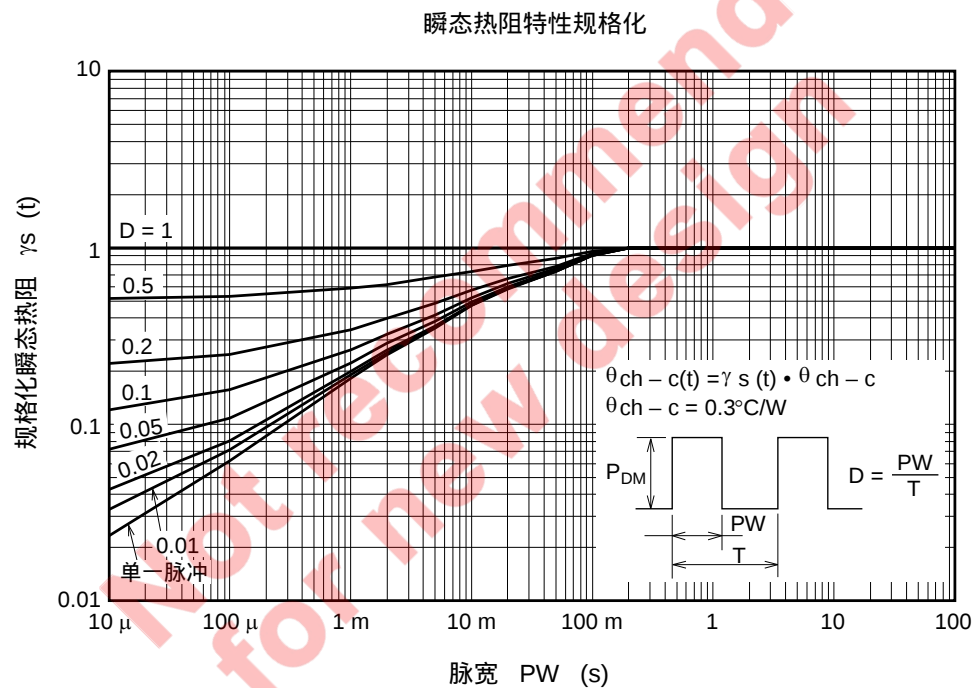
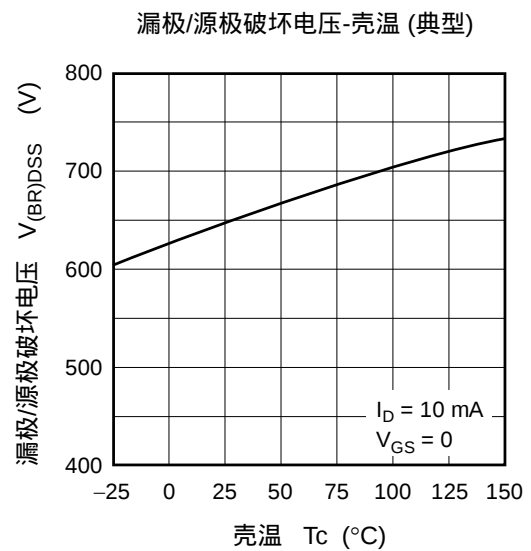
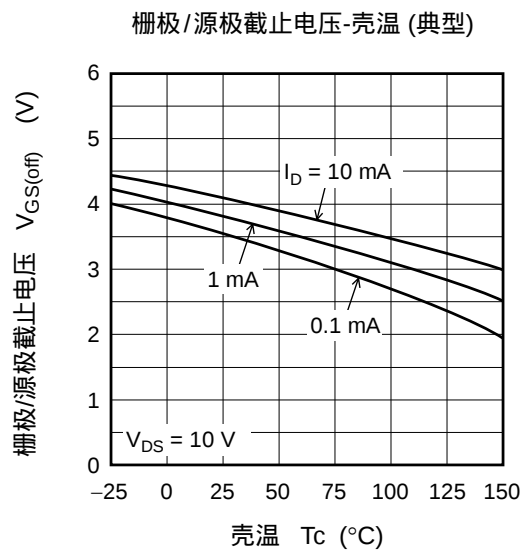
输出电容 (C_{OSS}) 储存能量 (典型)

输入时序特性 (典型)

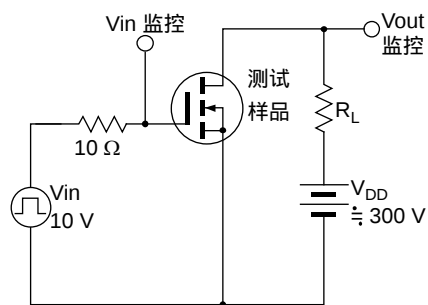


反向漏极电流-源极/漏极电压 (典型)

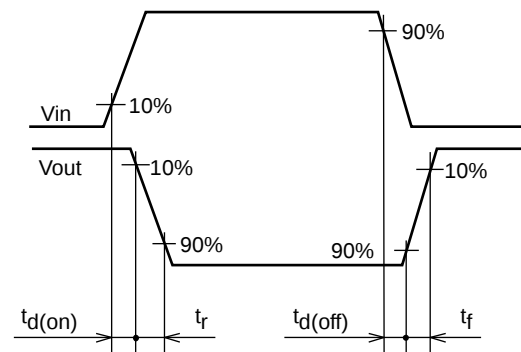




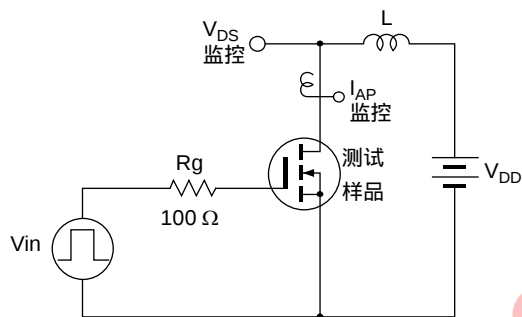
开关时间测定电路



波形

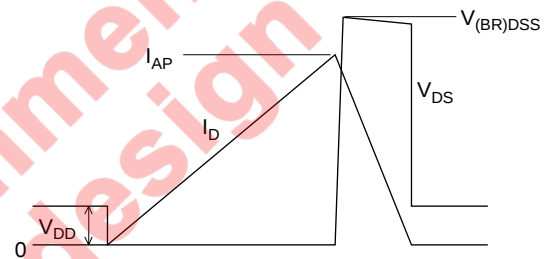


雪崩测定电路



雪崩波形

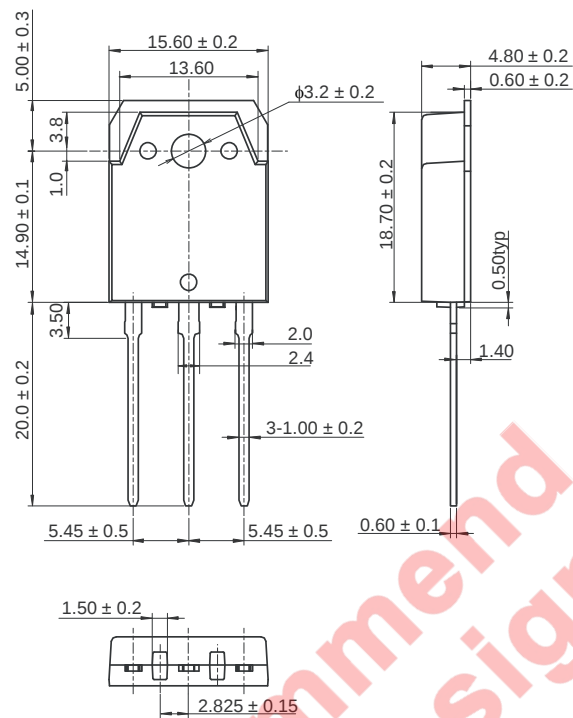
$$E_{AR} = \frac{1}{2} L \cdot I_{AP}^2 \cdot \frac{V_{DSS}}{V_{DSS} - V_{DD}}$$



封装尺寸

封装名称	JEITA 封装代码	RENESAS 代码	旧代码	重量[典型]
TO-3PSG	-	PRSS0004ZH-A	TO-3PSG/TO-3PSGV	3.7g

单位: mm



订购信息

订购型号	数量	运输包装
RJK60S8DPK-M0#T0	360 枚	纸盒包装 (管状容器)

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