

# RJK4014DPK

400V - 24A - 场效应晶体管  
快速电源开关

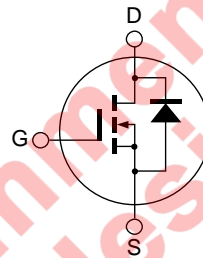
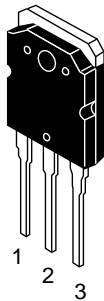
R07DS0461CJ0200  
修订版本 2.00  
Sep 25, 2012

## 特点

- 低漏极/源极通态电阻  
 $R_{DS(on)} = 0.20 \Omega$  典型值 ( $I_D = 12 \text{ A}$ ,  $V_{GS} = 10 \text{ V}$ ,  $T_a = 25^\circ\text{C}$ )
- 低漏泄电流
- 快速开关时间

## 封装形式

RENESAS 封装代码: PRSS0004ZE-A  
(封装名称: TO-3P)



1. 栅极
2. 漏极 (凸缘)
3. 源极

## 绝对最大额定值

( $T_a = 25^\circ\text{C}$ )

参数	符号	额定值	单位
漏极/源极电压	$V_{DSS}$	400	V
栅极/源极电压	$V_{GSS}$	$\pm 30$	V
漏极电流	$I_D$	24	A
脉冲漏极电流	$I_D$ (pulse) <sup>注1</sup>	72	A
体二极管反向漏极电流	$I_{DR}$	24	A
体二极管反向脉冲漏极电流	$I_{DR}$ (pulse) <sup>注1</sup>	72	A
雪崩电流	$I_{AP}$ <sup>注3</sup>	8	A
雪崩能量	$E_{AR}$ <sup>注3</sup>	3.65	mJ
沟道容许最大损耗	$P_{ch}$ <sup>注2</sup>	150	W
沟道-外壳间热阻	$\theta_{ch-c}$	0.833	$^\circ\text{C}/\text{W}$
沟道温度	$T_{ch}$	150	$^\circ\text{C}$
储存温度	$T_{stg}$	-55 to +150	$^\circ\text{C}$

- 注:
1. 在  $PW \leq 10 \mu\text{s}$ , 工作周期  $\leq 1\%$  的容许值
  2. 在  $T_c = 25^\circ\text{C}$  的容许值
  3.  $ST_{ch} = 25^\circ\text{C}$ ,  $T_{ch} \leq 150^\circ\text{C}$

## 电特性

(Ta = 25°C)

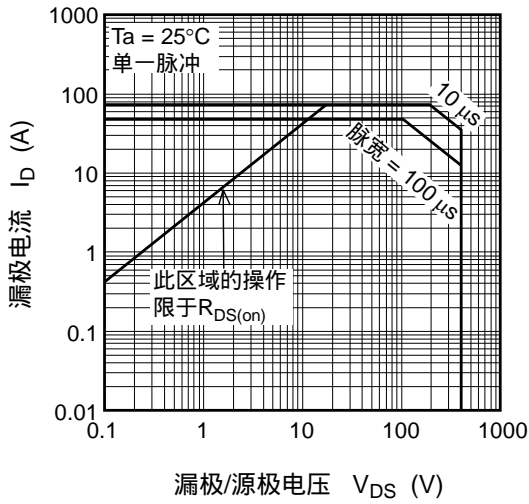
参数	符号	最小值	典型值	最大值	单位	测定条件
漏极/源极破坏电压	$V_{(BR)DSS}$	400	—	—	V	$I_D = 10 \text{ mA}$ , $V_{GS} = 0$
漏极截止电流	$I_{DSS}$	—	—	1	$\mu\text{A}$	$V_{DS} = 400 \text{ V}$ , $V_{GS} = 0$
栅极截止电流	$I_{GSS}$	—	—	$\pm 0.1$	$\mu\text{A}$	$V_{GS} = \pm 30 \text{ V}$ , $V_{DS} = 0$
栅极/源极截止电压	$V_{GS(off)}$	3.0	—	4.5	V	$V_{DS} = 10 \text{ V}$ , $I_D = 1 \text{ mA}$
静态漏极/源极通态电阻	$R_{DS(on)}$	—	0.20	0.24	$\Omega$	$I_D = 12 \text{ A}$ , $V_{GS} = 10 \text{ V}$ <sup>注4</sup>
输入电容	$C_{iss}$	—	1800	—	pF	$V_{DS} = 25 \text{ V}$
输出电容	$C_{oss}$	—	220	—	pF	$V_{GS} = 0$
反向传输电容	$C_{rss}$	—	29	—	pF	$f = 1 \text{ MHz}$
接通延迟时间	$t_{d(on)}$	—	35	—	ns	$I_D = 12 \text{ A}$
上升时间	$t_r$	—	63	—	ns	$V_{GS} = 10 \text{ V}$
关断延迟时间	$t_{d(off)}$	—	93	—	ns	$R_L = 16.7 \Omega$
下降时间	$t_f$	—	49	—	ns	$R_g = 10 \Omega$
栅极充电电荷量	$Q_g$	—	47	—	nC	$V_{DD} = 320 \text{ V}$
栅极/源极充电电荷量	$Q_{gs}$	—	10	—	nC	$V_{GS} = 10 \text{ V}$
栅极/漏极充电电荷量	$Q_{gd}$	—	21	—	nC	$I_D = 24 \text{ A}$
体二极管正向电压	$V_{DF}$	—	0.95	1.60	V	$I_F = 24 \text{ A}$ , $V_{GS} = 0$ <sup>注4</sup>
体二极管反向恢复时间	$t_{rr}$	—	310	—	ns	$I_F = 24 \text{ A}$ , $V_{GS} = 0$ $di_F/dt = 100 \text{ A}/\mu\text{s}$

注: 4. 脉冲测试

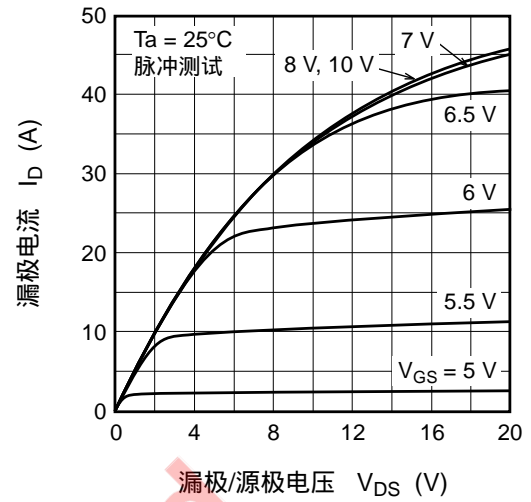
Not recommended for new design

主要特性

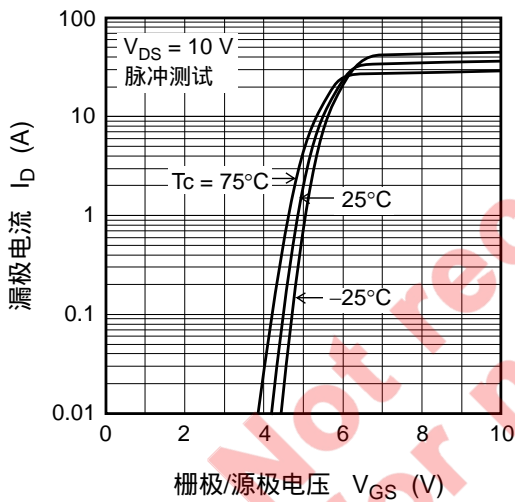
最大安全工作区域



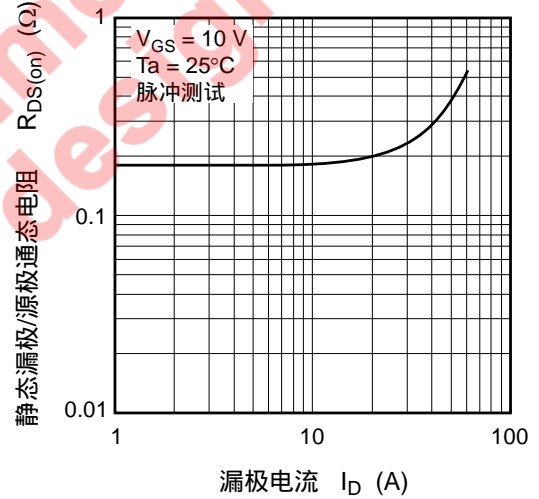
典型输出特性



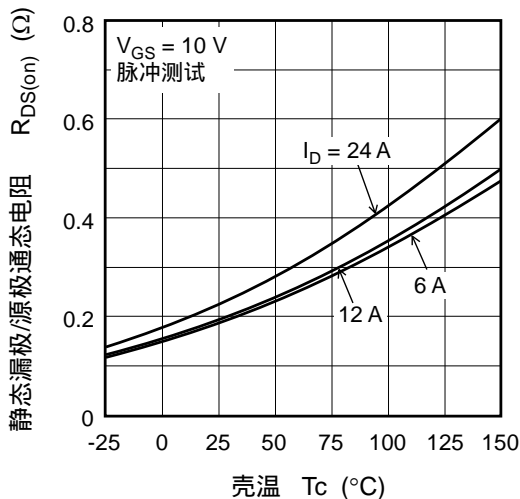
典型传输特性



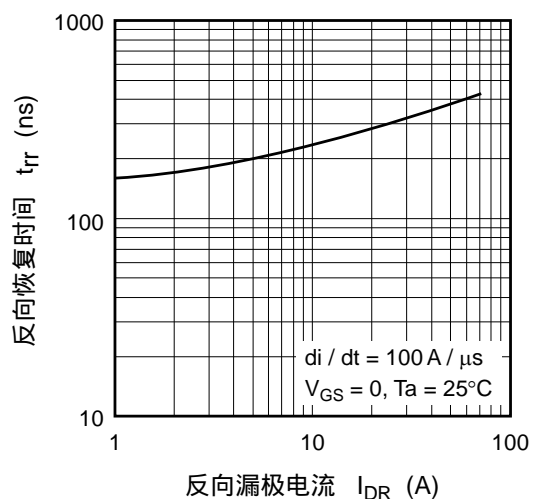
静态漏极/源极通态电阻-漏极电流 (典型)



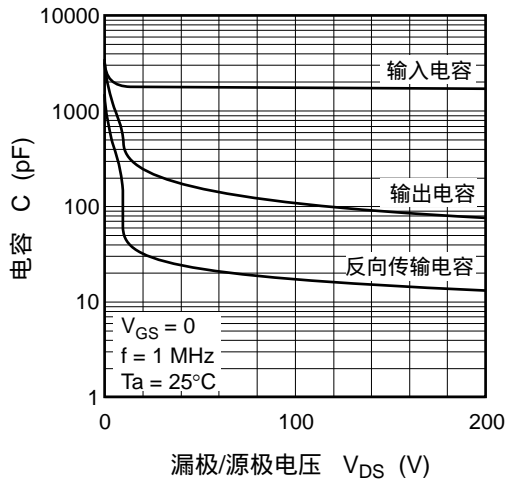
静态漏极/源极通态电阻-壳温 (典型)



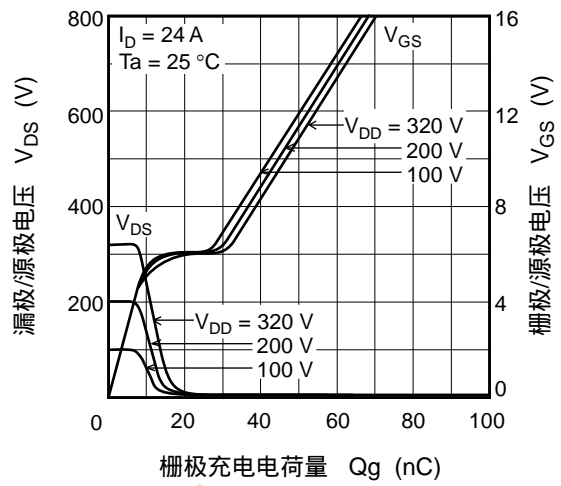
体二极管反向恢复时间 (典型)



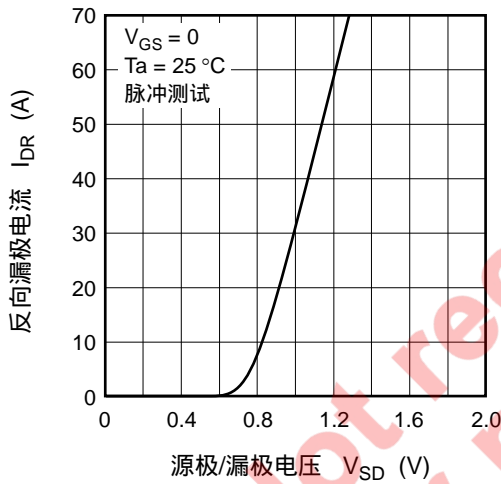
典型电容-漏极/源极电压



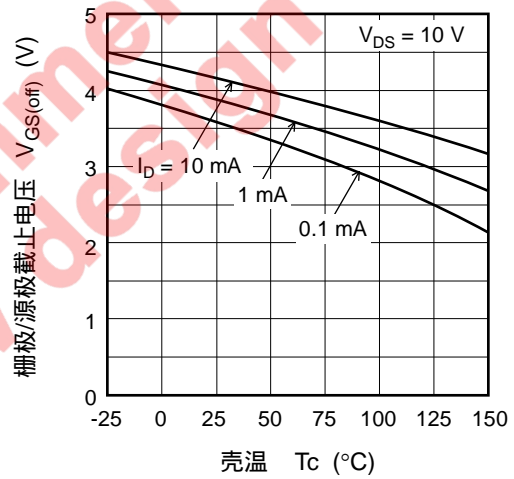
输入时序特性 (典型)



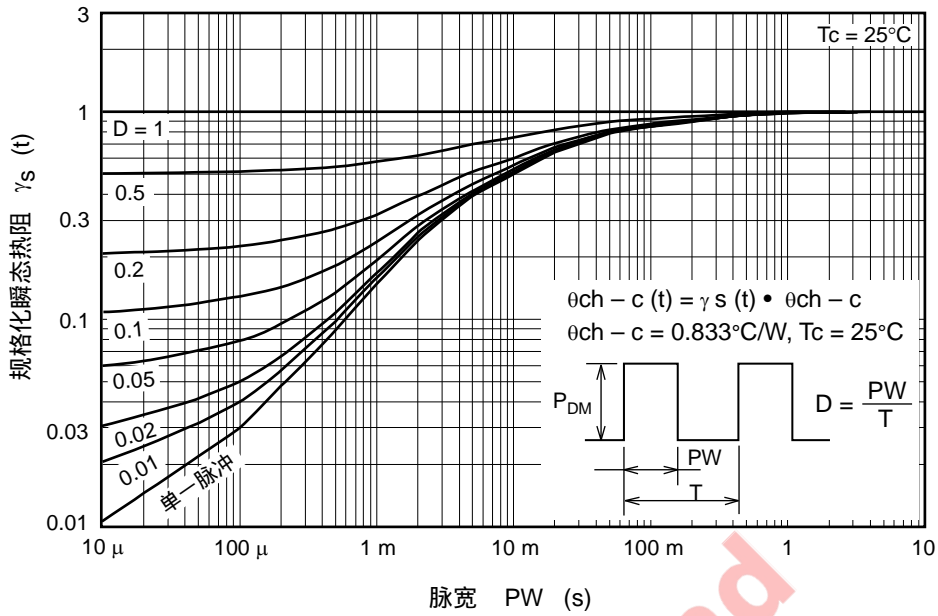
反向漏极电流-源极/漏极电压 (典型)



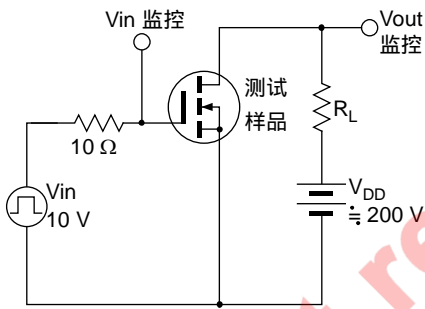
栅极/源极截止电压-壳温 (典型)



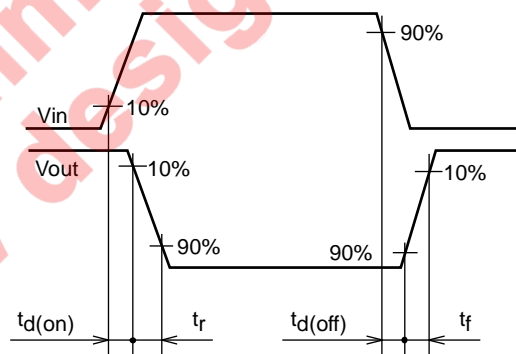
瞬态热阻特性规格化



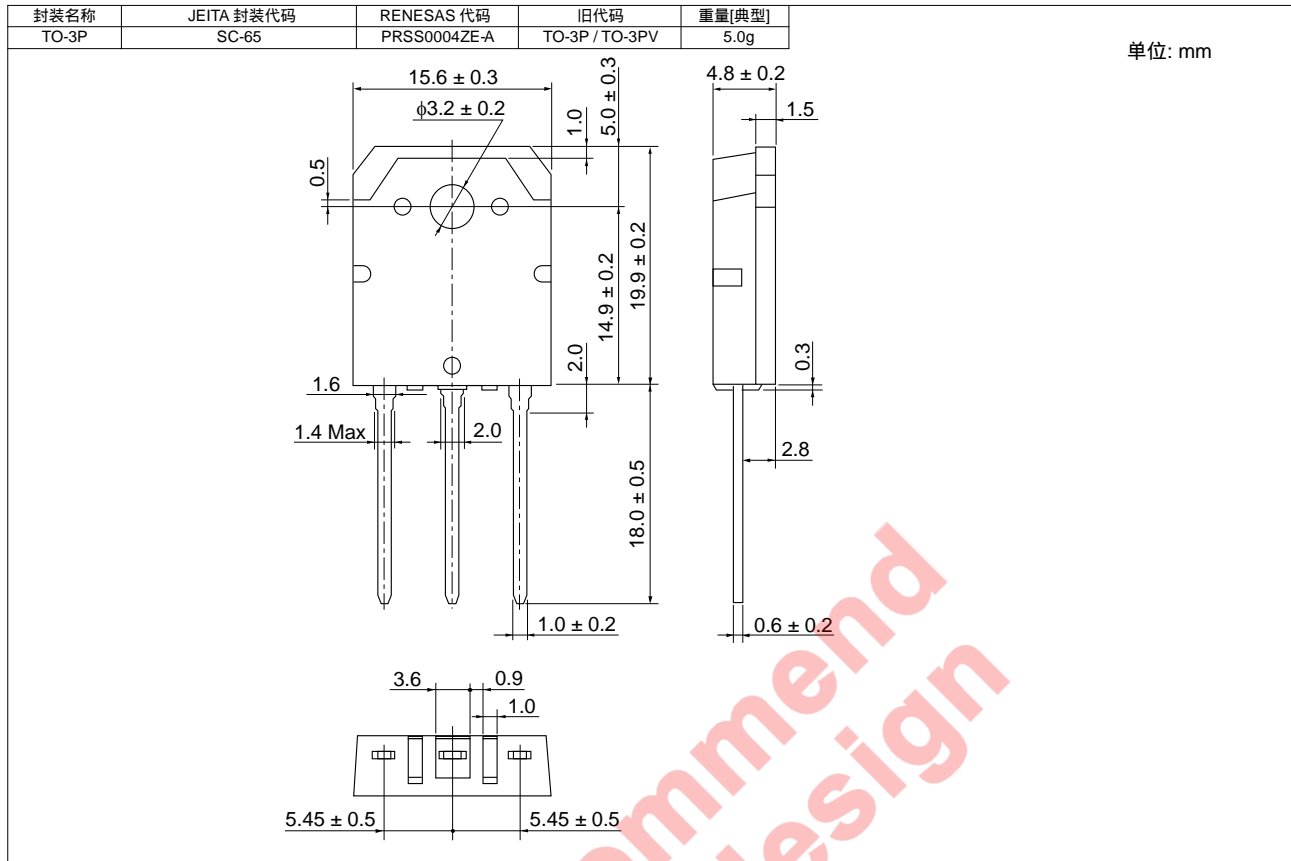
开关时间测定电路



波形



## 封装尺寸



## 订购信息

订购型号	数量	运输包装
RJK4014DPK-00#T0	360 枚	纸盒包装 (管状容器)

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