

# RJK60S7DPK-M0

600V - 30A - 超结场效应晶体管  
快速电源开关

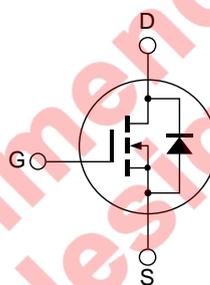
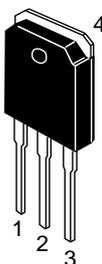
R07DS0642CJ0200  
修订版本 2.00  
Nov 26, 2012

## 特点

- 超结场效应晶体管
- 低漏极/源极通态电阻  
 $R_{DS(on)} = 0.1 \Omega$  典型值 ( $I_D = 15 \text{ A}$ ,  $V_{GS} = 10 \text{ V}$ ,  $T_a = 25^\circ\text{C}$ )
- 快速开关时间  
 $t_f = 15 \text{ ns}$  典型值 ( $I_D = 15 \text{ A}$ ,  $V_{GS} = 10 \text{ V}$ ,  $R_L = 20 \Omega$ ,  $R_g = 10 \Omega$ ,  $T_a = 25^\circ\text{C}$ )

## 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

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

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	$T_c = 25^\circ\text{C}$	$I_D$ 注1	30
	$T_c = 100^\circ\text{C}$	$I_D$ 注1	19
脉冲漏极电流	$I_D$ (pulse) 注1	60	A
体二极管反向漏极电流	$I_{DR}$ 注1	30	A
体二极管反向脉冲漏极电流	$I_{DR}$ (pulse) 注1	60	A
雪崩电流	$I_{AP}$ 注2	7.5	A
雪崩能量	$E_{AR}$ 注2	3.06	mJ
沟道最大容许损耗	$P_{ch}$ 注3	227.2	W
沟道-外壳间热阻	$\theta_{ch-c}$	0.55	$^\circ\text{C/W}$
沟道温度	$T_{ch}$	150	$^\circ\text{C}$
储存温度	$T_{stg}$	-55 to +150	$^\circ\text{C}$

- 注: 1. 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

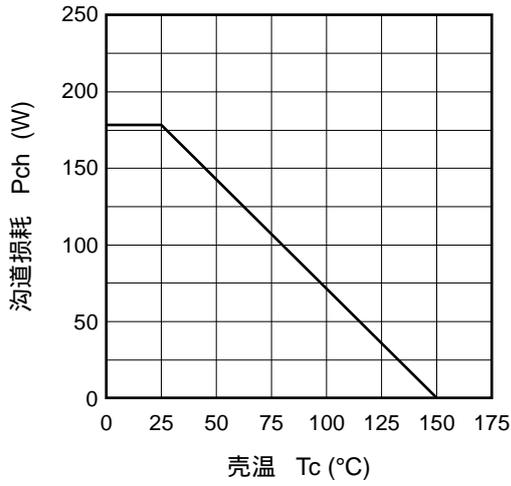
(Ta = 25°C)

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	$I_{GSS}$	—	—	$\pm 0.1$	$\mu\text{A}$	$V_{GS} = +30\text{V}, -20 \text{ V}, V_{DS} = 0$
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	$R_{DS(on)}$	—	0.100	0.125	$\Omega$	$I_D = 15 \text{ A}, V_{GS} = 10 \text{ V}^{\text{注}4}$
	$R_{DS(on)}$	—	0.25	—	$\Omega$	Ta = 150°C $I_D = 15 \text{ A}, V_{GS} = 10 \text{ V}^{\text{注}4}$
栅极电阻	Rg	—	2.0	—	$\Omega$	f = 1 MHz $V_{DS} = 25 \text{ V}, V_{GS} = 0$
输入电容	Ciss	—	2300	—	pF	$V_{DS} = 25 \text{ V}$ $V_{GS} = 0$ f = 100 kHz
输出电容	Coss	—	3000	—	pF	
反向传输电容	Crss	—	10	—	pF	
接通延迟时间	$t_{d(on)}$	—	27	—	ns	$I_D = 15 \text{ A}$ $V_{GS} = 10 \text{ V}$ $R_L = 20 \Omega$ $R_g = 10 \Omega^{\text{注}4}$
上升时间	$t_r$	—	28	—	ns	
关断延迟时间	$t_{d(off)}$	—	55	—	ns	
下降时间	$t_f$	—	9	—	ns	
栅极充电电荷量	Qg	—	39	—	nC	$V_{DD} = 480 \text{ V}$ $V_{GS} = 10 \text{ V}$ $I_D = 30 \text{ A}^{\text{注}4}$
栅极/源极充电电荷量	Qgs	—	15	—	nC	
栅极/漏极充电电荷量	Qgd	—	11	—	nC	
体二极管正向电压	$V_{DF}$	—	1.0	1.6	V	$I_F = 30 \text{ A}, V_{GS} = 0^{\text{注}4}$
体二极管反向恢复时间	$t_{rr}$	—	490	—	ns	$I_F = 30 \text{ A}$ $V_{GS} = 0$ $di_F/dt = 100 \text{ A}/\mu\text{s}^{\text{注}4}$
体二极管反向恢复电流	$I_{rr}$	—	26	—	A	
体二极管反向恢复电荷	$Q_{rr}$	—	7.1	—	$\mu\text{C}$	

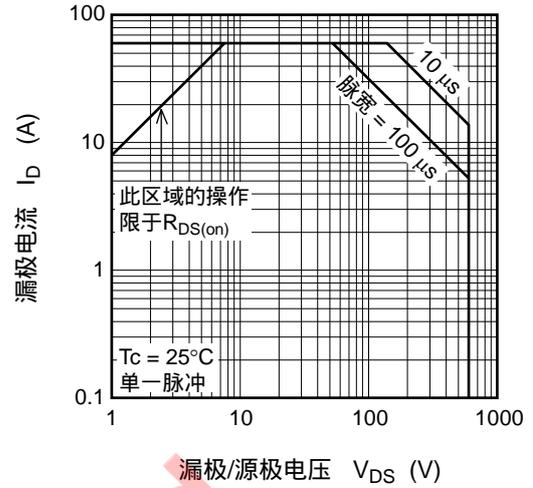
注: 4. 脉冲测试

主要特性

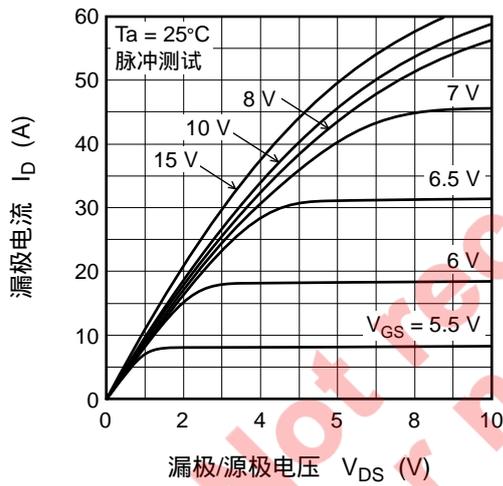
沟道损耗-壳温



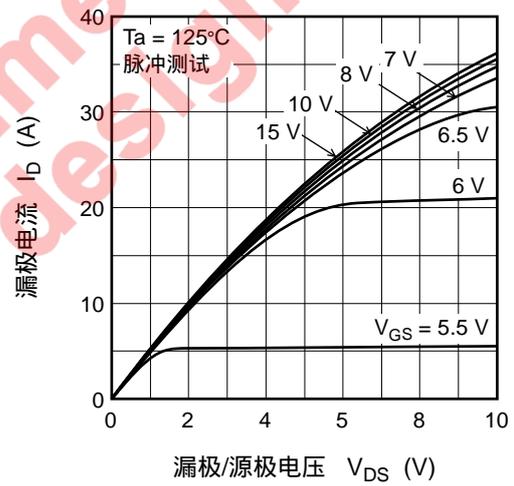
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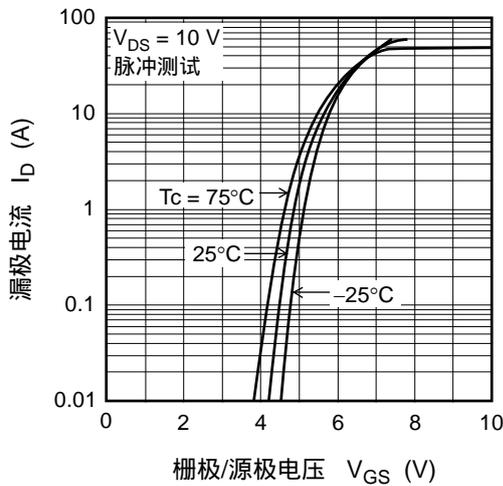
典型输出特性



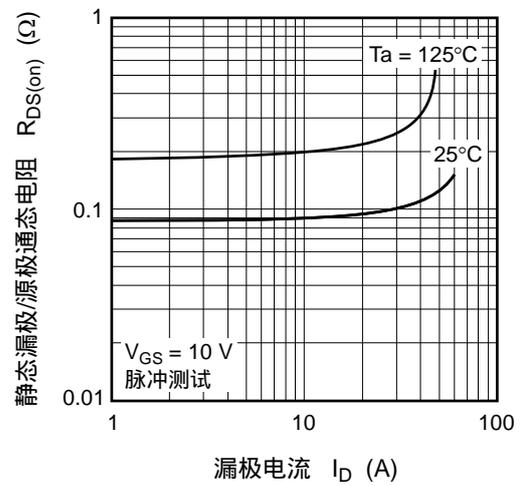
典型输出特性



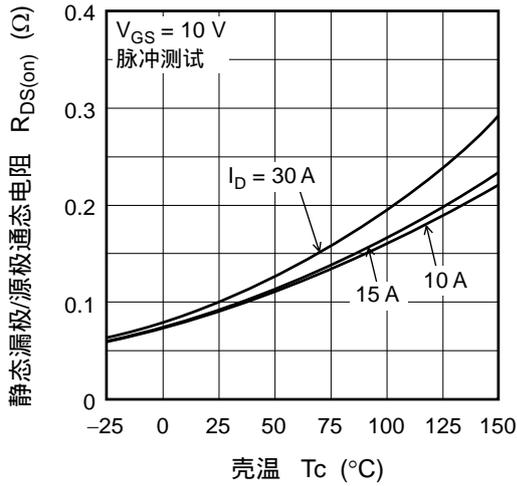
典型传输特性



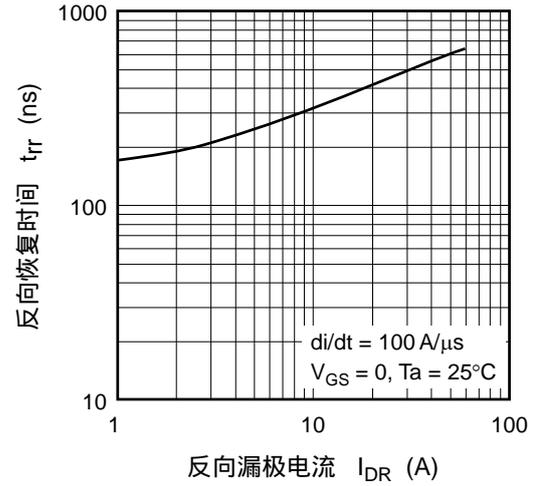
静态漏极/源极通态电阻-漏极电流 (典型)



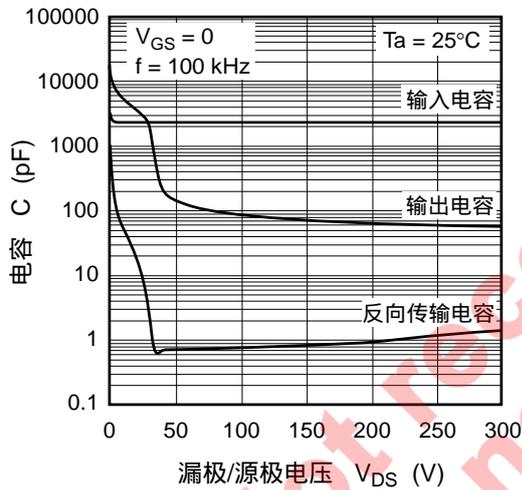
静态漏极/源极通态电阻-壳温 (典型)



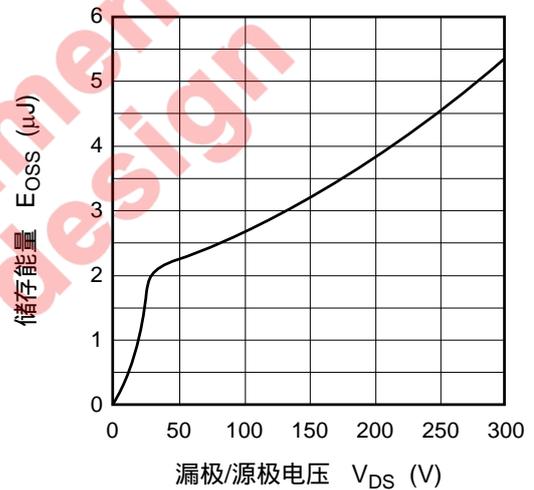
体二极管反向恢复时间 (典型)



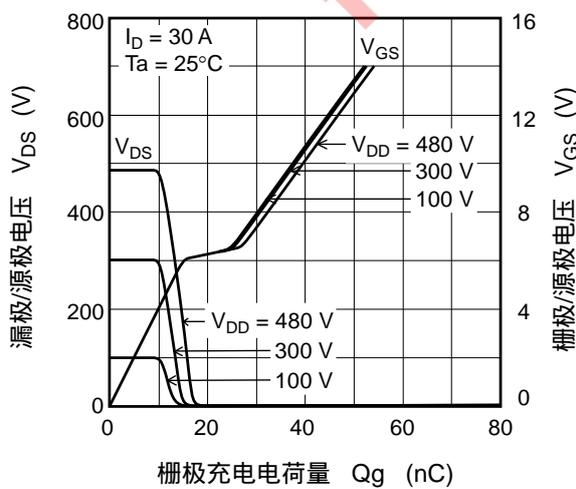
典型电容-漏极/源极电压



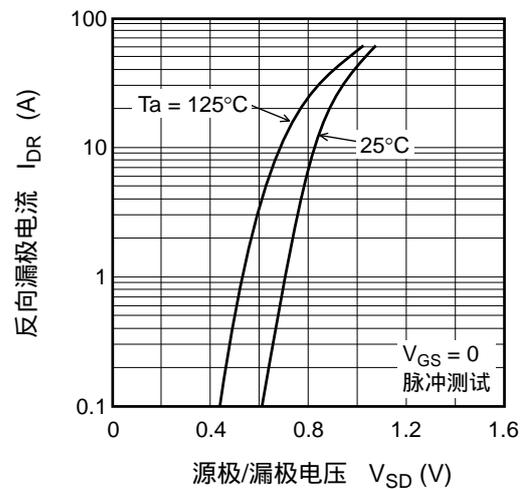
输出电容 ( $C_{OSS}$ ) 储存能量 (典型)



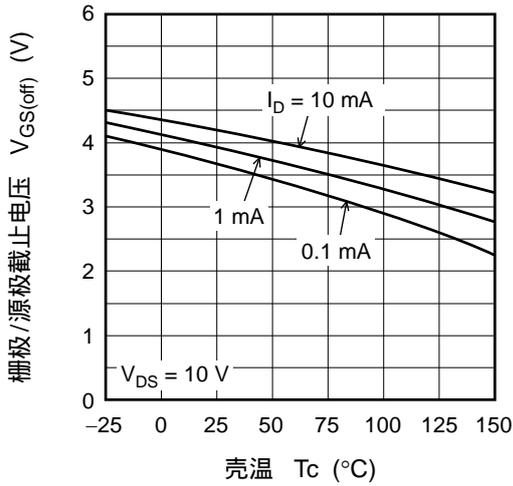
输入时序特性 (典型)



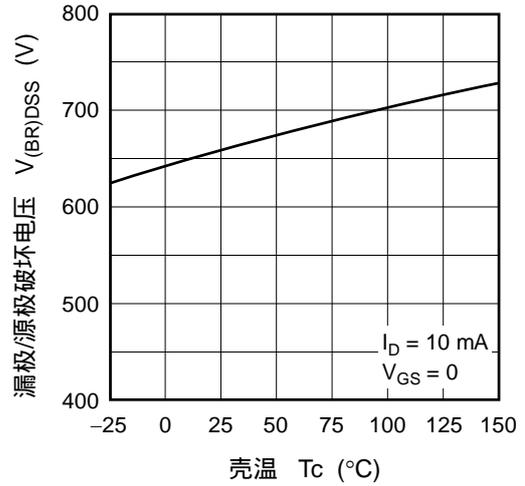
反向漏极电流-源极/漏极电压 (典型)



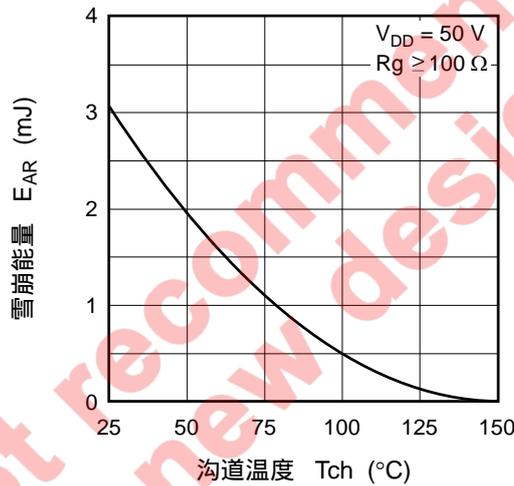
栅极/源极截止电压-壳温 (典型)



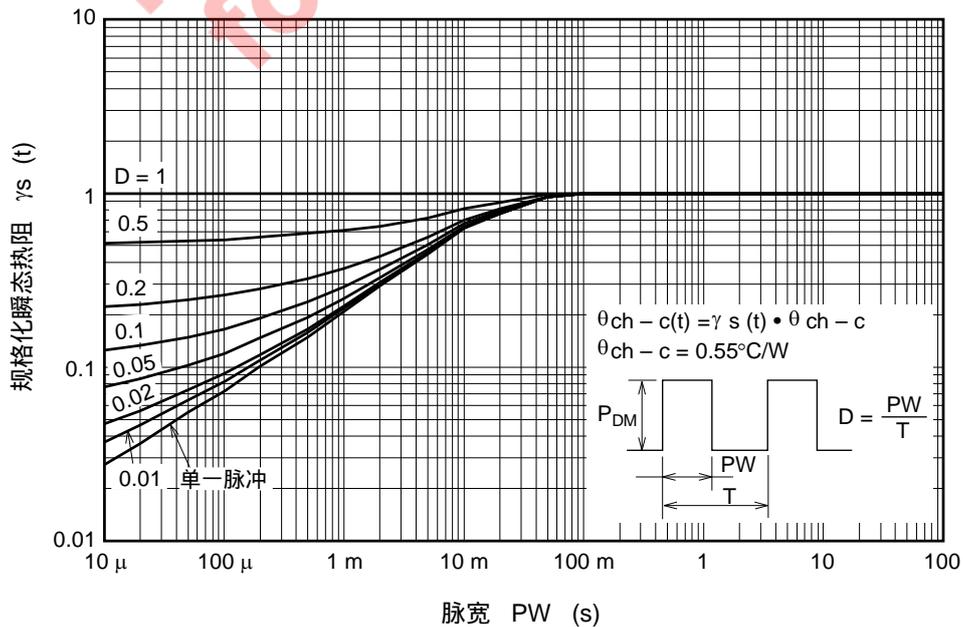
漏极/源极破坏电压-壳温 (典型)

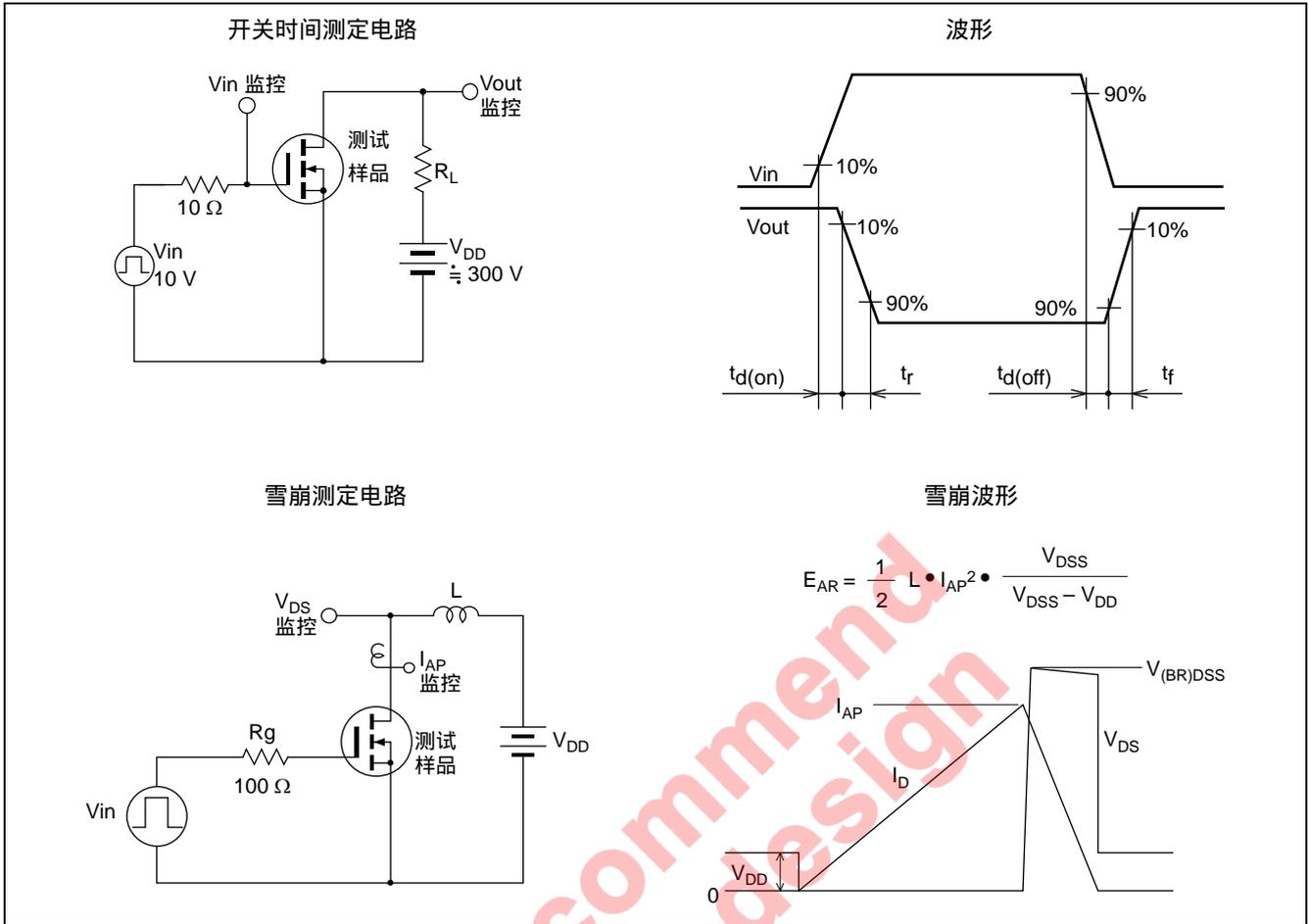


最大雪崩能量-沟道温度降额



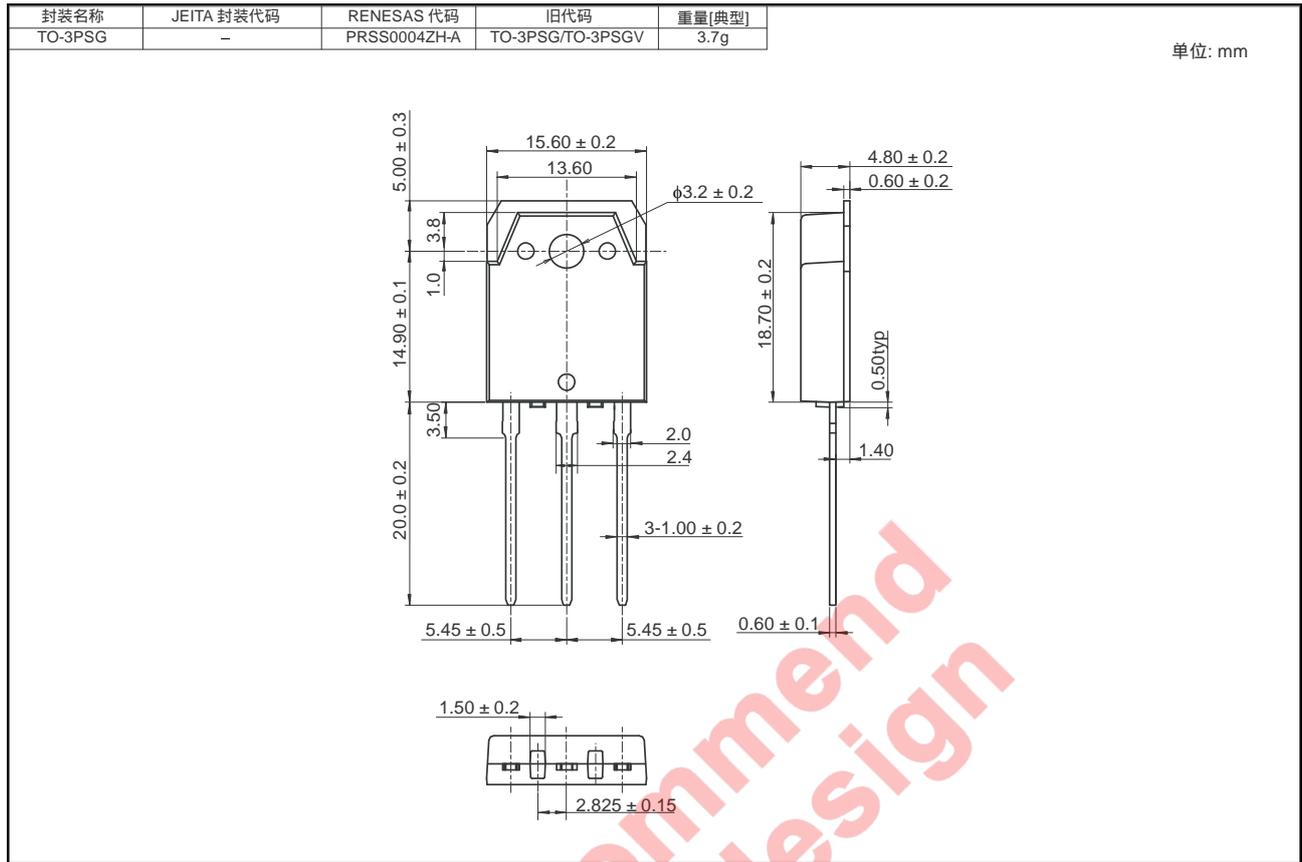
瞬态热阻特性规格化





Not recommended for new design

## 封装尺寸



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订购型号	数量	运输包装
RJK60S7DPK-M0#T0	360 枚	纸盒包装 (管状容器)

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