

H5N2512FP-E0-E

250V - 18A - 场效应晶体管
快速电源开关

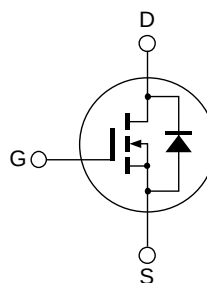
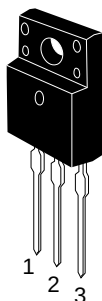
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修订版本 1.00
Oct 30, 2012

特点

- 低漏极/源极通态电阻
 $R_{DS(on)} = 0.082 \Omega$ 典型值 ($I_D = 9 A$, $V_{GS} = 10 V$, $T_a = 25^\circ C$)
- 低漏泄电流
- 快速开关时间
- 内置快速恢复二极管

封装形式

RENESAS 封装代码: PRSS0003AG-A
(封装名称: TO-220FP)



1. 栅极
2. 漏极
3. 源极

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}	250	V
栅极/源极电压	V_{GSS}	± 30	V
漏极电流	I_D	18	A
脉冲漏极电流	$I_{D(pulse)}$ 注1	72	A
体二极管反向漏极电流	I_{DR}	18	A
体二极管反向脉冲漏极电流	$I_{DR(pulse)}$ 注1	72	A
雪崩电流	I_{AP} 注3	18	A
沟道最大容许损耗	P_{ch} 注2	35	W
沟道-外壳间热阻	θ_{ch-c}	3.57	$^\circ C/W$
沟道温度	T_{ch}	150	$^\circ C$
储存温度	T_{stg}	-55 to +150	$^\circ C$

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

电特性

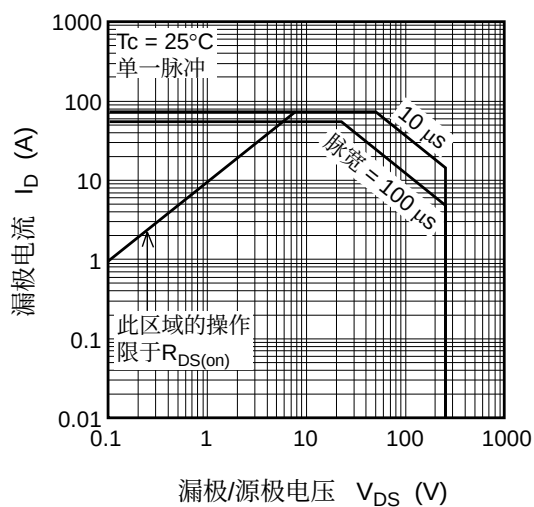
(Ta = 25°C)

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	$V_{(BR)DSS}$	250	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
漏极截止电流	I_{DSS}	—	—	10	μA	$V_{DS} = 250 \text{ V}$, $V_{GS} = 0$
栅极截止电流	I_{GSS}	—	—	± 0.1	μA	$V_{GS} = \pm 30 \text{ V}$, $V_{DS} = 0$
栅极/源极截止电压	$V_{GS(off)}$	1.5	—	4.0	V	$V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ mA}$
静态漏极/源极通态电阻	$R_{DS(on)}$	—	0.082	0.105	Ω	$I_D = 9 \text{ A}$, $V_{GS} = 10 \text{ V}$ ^{注4}
输入电容	C_{iss}	—	2200	—	pF	$V_{DS} = 25 \text{ V}$ $V_{GS} = 0$, $f = 1 \text{ MHz}$
输出电容	C_{oss}	—	300	—	pF	
反向传输电容	C_{rss}	—	85	—	pF	
接通延迟时间	$t_{d(on)}$	—	32	—	ns	$I_D = 9 \text{ A}$ $V_{GS} = 10 \text{ V}$ $R_L = 13.9 \Omega$ $R_g = 10 \Omega$
上升时间	t_r	—	60	—	ns	
关断延迟时间	$t_{d(off)}$	—	160	—	ns	
下降时间	t_f	—	60	—	ns	
栅极充电电荷量	Q_g	—	81	—	nC	$V_{DD} = 200 \text{ V}$ $V_{GS} = 10 \text{ V}$ $I_D = 18 \text{ A}$
栅极/源极充电电荷量	Q_{gs}	—	10	—	nC	
栅极/漏极充电电荷量	Q_{gd}	—	38	—	nC	
体二极管正向电压	V_{DF}	—	0.9	1.4	V	$I_F = 18 \text{ A}$, $V_{GS} = 0$ ^{注4}
体二极管反向恢复时间	t_{rr}	—	110	—	ns	$I_F = 18 \text{ A}$, $V_{GS} = 0$ $diF/dt = 100 \text{ A}/\mu\text{s}$
体二极管反向恢复电荷	Q_{rr}	—	0.39	—	μC	

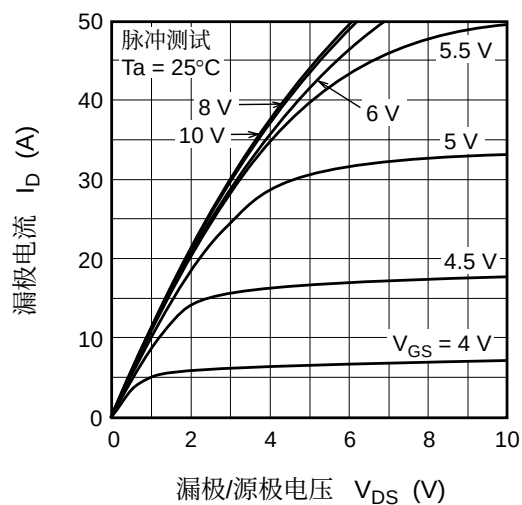
注: 4. 脉冲测试

主要特性

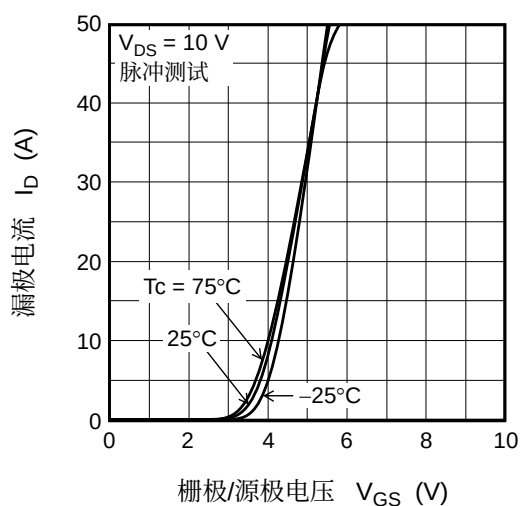
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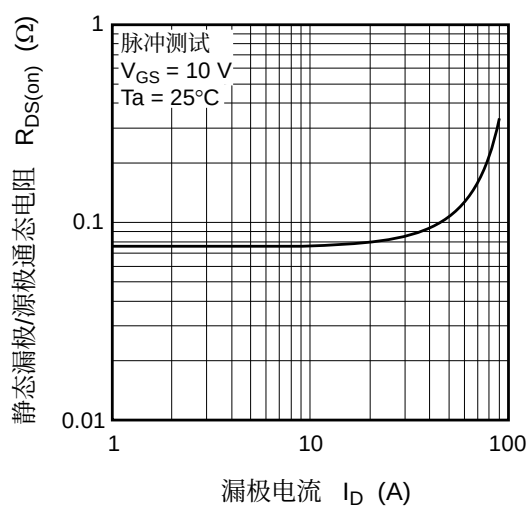
典型输出特性



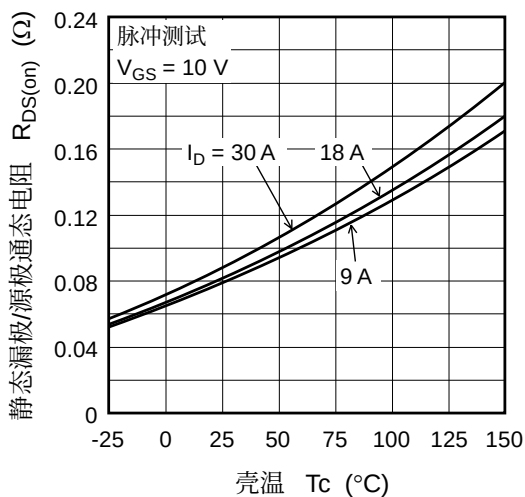
典型传输特性



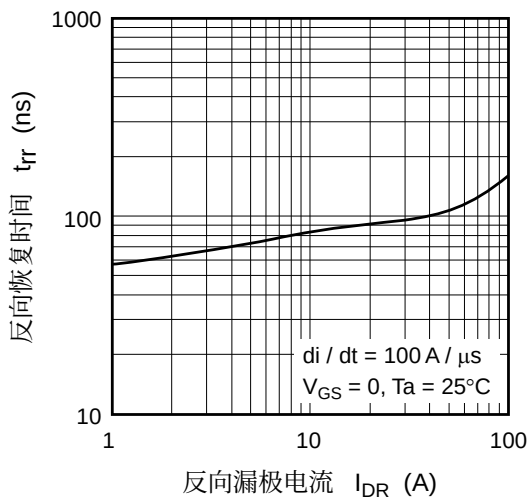
静态漏极/源极通态电阻-漏极电流 (典型)



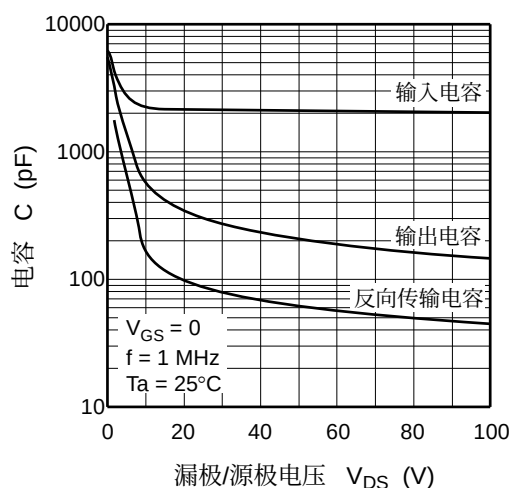
静态漏极/源极通态电阻-亮温(典型)



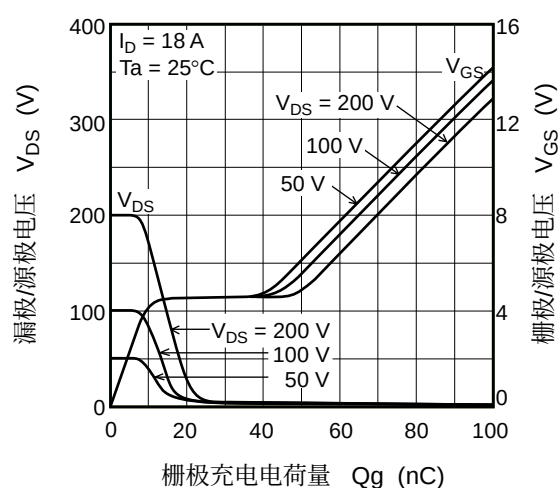
体二极管反向恢复时间 (典型)



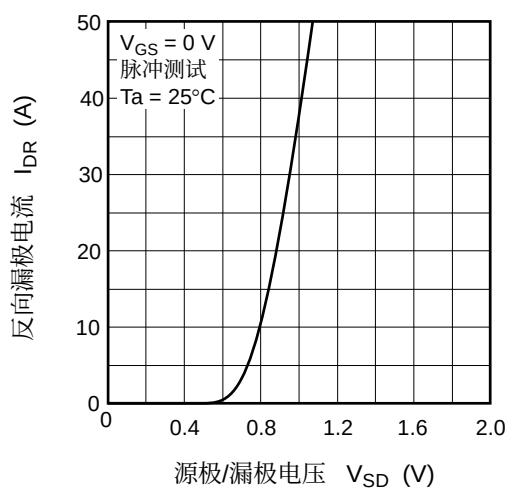
典型电容-漏极/源极电压



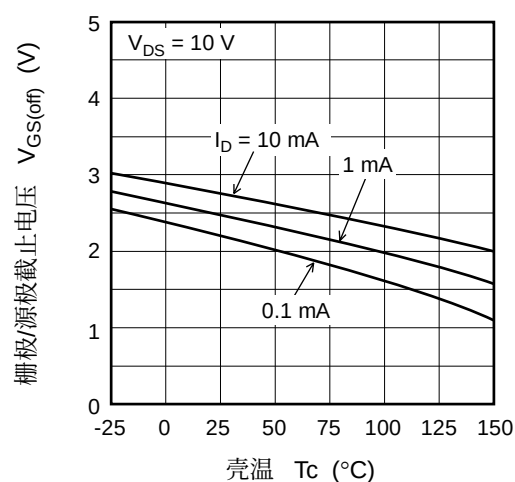
输入时序特性 (典型)



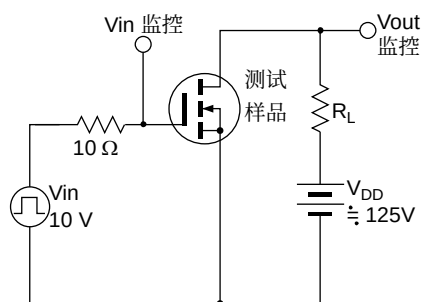
反向漏极电流-源极/漏极电压 (典型)



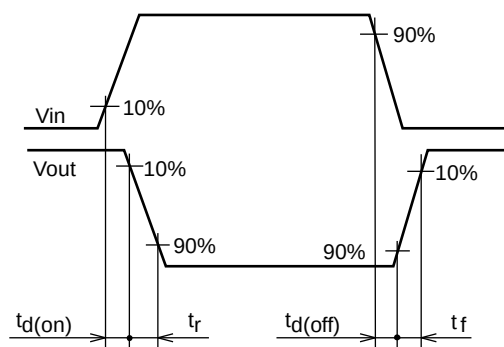
栅极/源极截止电压-亮温 (典型)



开关时间测定电路



波形



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