

RJH60F6DPQ-A0

硅 N 沟道绝缘栅双极晶体管
快速电源开关

R07DS0327CJ0100

修订版本 1.00

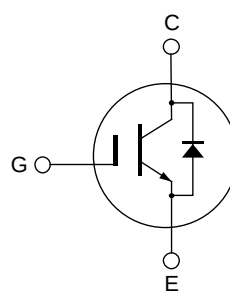
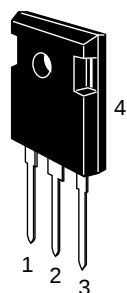
Sep 01, 2011

特点

- 低集电极 / 发射极饱和电压
 $V_{CE(sat)} = 1.35 \text{ V}$ 典型值 ($I_C = 45 \text{ A}$, $V_{GE} = 15 \text{ V}$, $T_a = 25^\circ\text{C}$)
- 单一封装内置快速恢复二极管
- 沟槽栅与薄晶圆技术
- 快速开关时间
 $t_f = 74 \text{ ns}$ 典型值 ($I_C = 30 \text{ A}$, $V_{CE} = 400 \text{ V}$, $V_{GE} = 15 \text{ V}$, $R_g = 5 \Omega$, $T_a = 25^\circ\text{C}$, 感性负载)

封装形式

RENESAS 封装代码: PRSS0003ZH-A
(封装名称: TO-247A)



1. 栅极
2. 集电极
3. 发射极
4. 集电极

绝对最大额定值

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

参数		符号	额定值	单位
集电极 / 发射极电压		V_{CES}	600	V
栅极 / 发射极电压		V_{GES}	± 30	V
集电极电流	$T_c = 25^\circ\text{C}$	I_C	85	A
	$T_c = 100^\circ\text{C}$	I_C	45	A
集电极脉冲电流		$i_{c(\text{peak})}$ 注1	170	A
集电极 / 发射极二极管正向脉冲电流		$i_{DF(\text{peak})}$ 注2	100	A
最大损耗		P_C	297.6	W
结壳热阻 (绝缘栅双极晶体管)		θ_{j-c}	0.42	$^\circ\text{C/W}$
结壳热阻 (二极管)		θ_{j-cd}	2.0	$^\circ\text{C/W}$
结温		T_j	150	$^\circ\text{C}$
储存温度		T_{stg}	-55 to +150	$^\circ\text{C}$

- 注: 1. 脉冲宽度限于安全工作区域。
2. 在 $PW \leq 5 \mu\text{s}$, 工作周期 $\leq 1\%$ 的容许值。

电特性

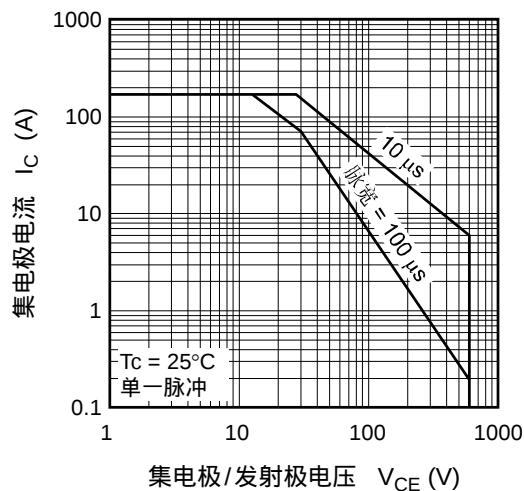
(T_j = 25°C)

参数	符号	最小值	典型值	最大值	单位	测定条件
集电极/发射极断路电流	I _{CES}	—	—	100	μA	V _{CE} = 600V, V _{GE} = 0
栅极/发射极漏泄电流	I _{GES}	—	—	±1	μA	V _{GE} = ±30 V, V _{CE} = 0
栅极/发射极截止电压	V _{GE(off)}	4	—	8	V	V _{CE} = 10V, I _C = 1 mA
集电极/发射极饱和电压	V _{CE(sat)}	—	1.35	1.75	V	I _C = 45 A, V _{GE} = 15V ^{注3}
输入电容	C _{ies}	—	3800	—	pF	V _{CE} = 25 V V _{GE} = 0 V f = 1 MHz
输出电容	C _{oes}	—	150	—	pF	
反向传输电容	C _{res}	—	65	—	pF	
接通延迟时间	t _{d(on)}	—	58	—	ns	I _C = 30 A, V _{CE} = 400 V, V _{GE} = 15 V R _g = 5 Ω ^{注3} , 感性负载
上升时间	t _r	—	80	—	ns	
断开延迟时间	t _{d(off)}	—	131	—	ns	
下降时间	t _f	—	74	—	ns	
集电极/发射极二极管正向电压	V _{ECF1}	—	1.2	2.1	V	I _F = 20 A ^{注3}
	V _{ECF2}	—	1.5	—	V	I _F = 40 A ^{注3}
集电极/发射极二极管反向恢复时间	t _{rr}	—	90	—	ns	I _F = 20 A di _F /dt = 100 A/μs

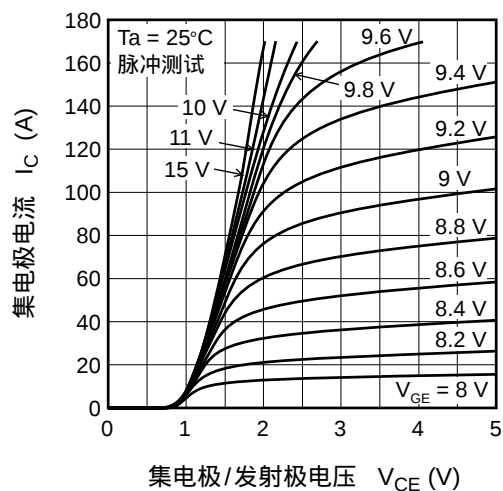
注: 3. 脉冲测试

主要特性

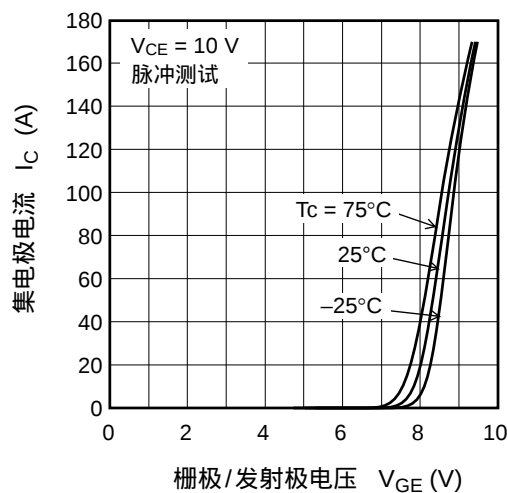
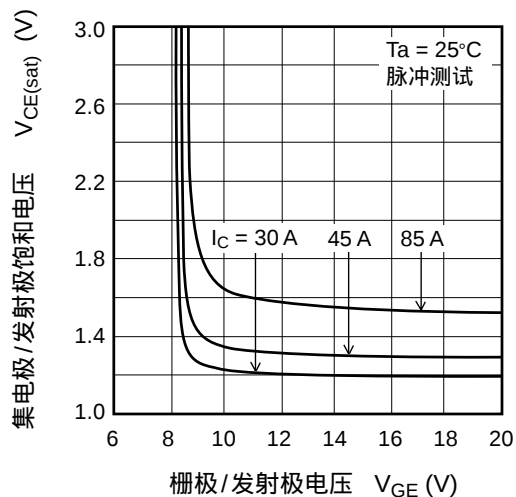
安全工作区域



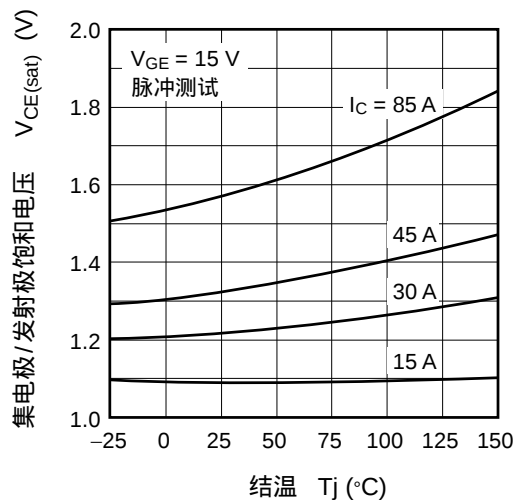
典型输出特性



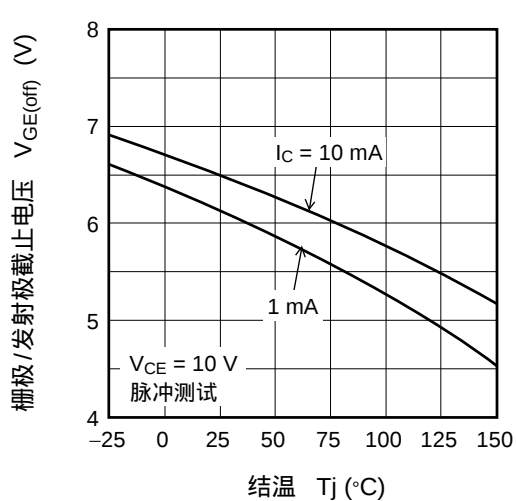
典型传输特性

集电极/发射极饱和电压-
栅极/发射极电压 (典型)

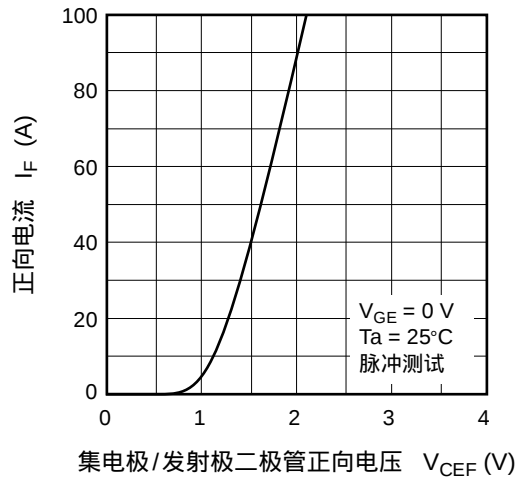
集电极/发射极饱和电压-结温 (典型)



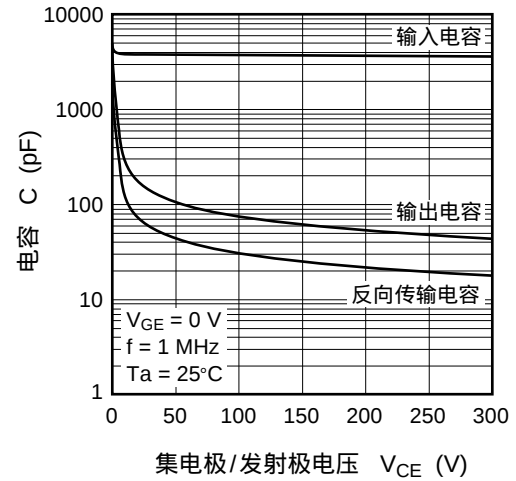
栅极/发射极截止电压-结温 (典型)



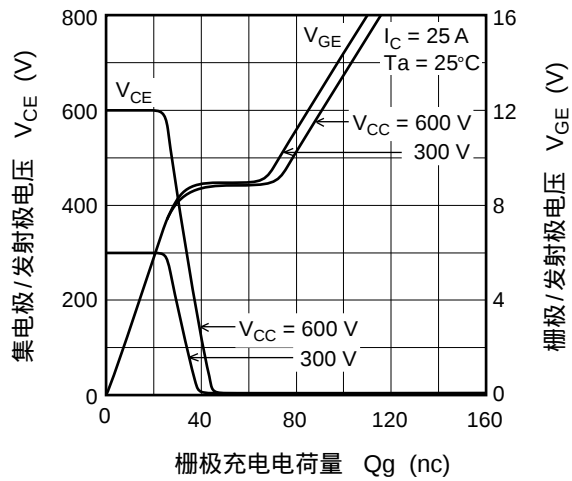
正向电流-正向电压 (典型)



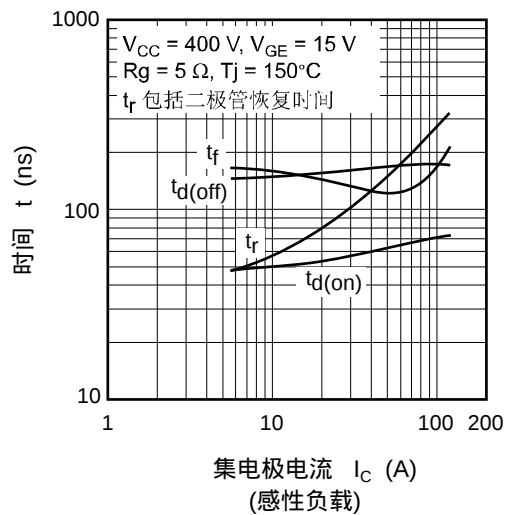
典型电容-集电极/发射极电压



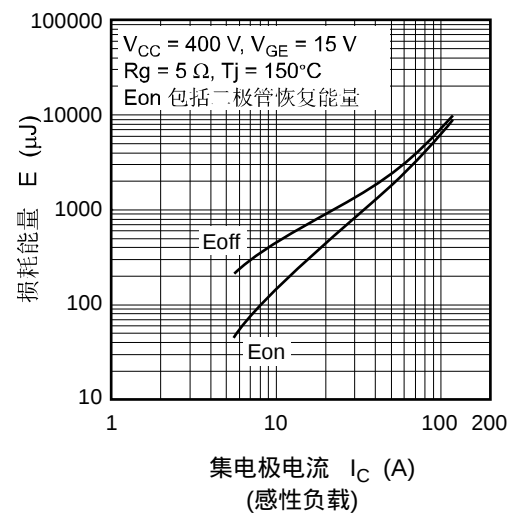
输入时序特性 (典型)



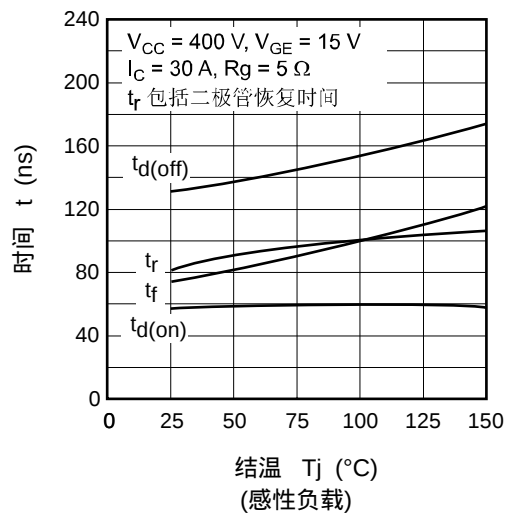
开关特性 (典型) (1)



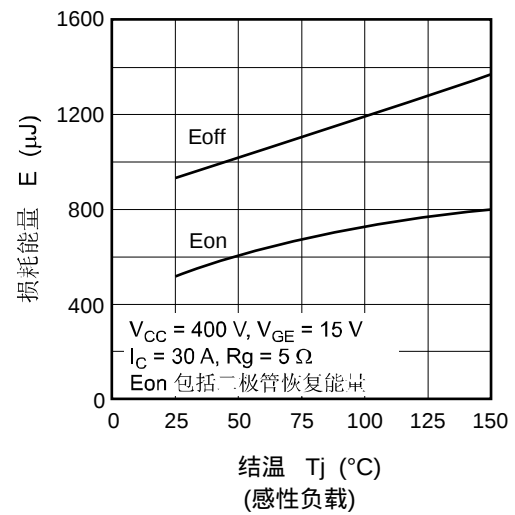
开关特性 (典型) (2)



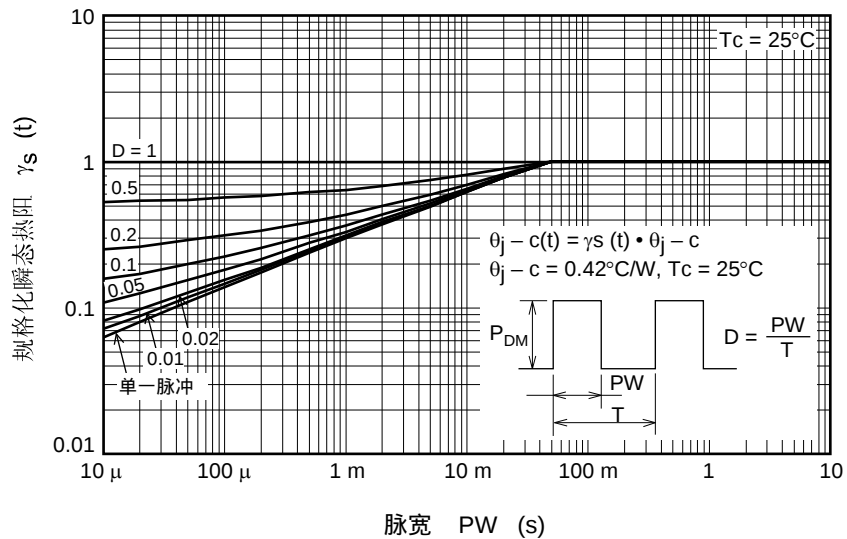
开关特性 (典型) (3)



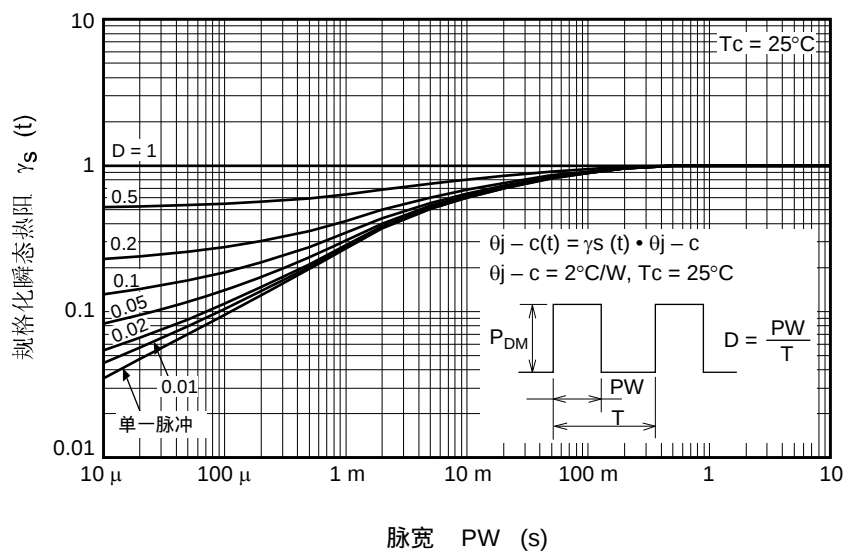
开关特性 (典型) (4)



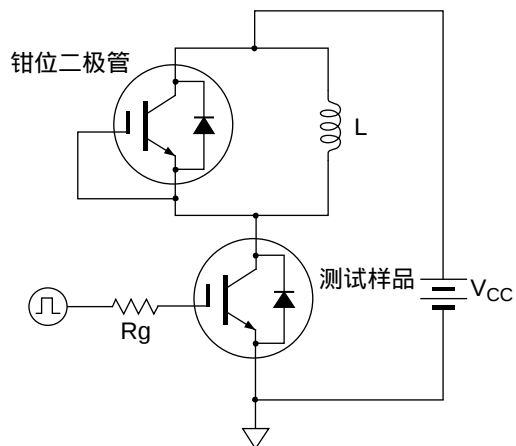
瞬态热阻特性规格化-脉宽 (绝缘栅双极晶体管)



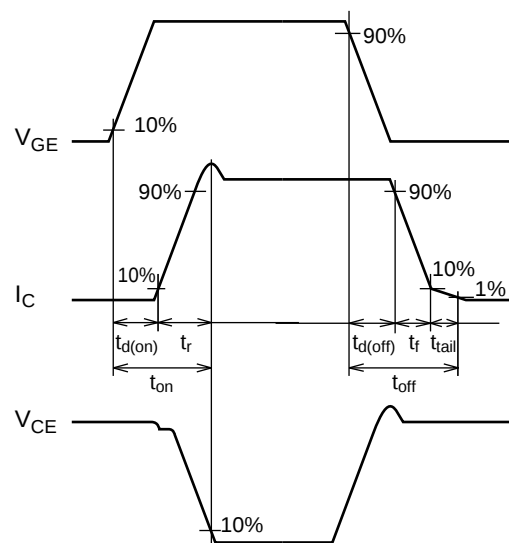
瞬态热阻特性规格化-脉宽 (二极管)



开关时间测定电路



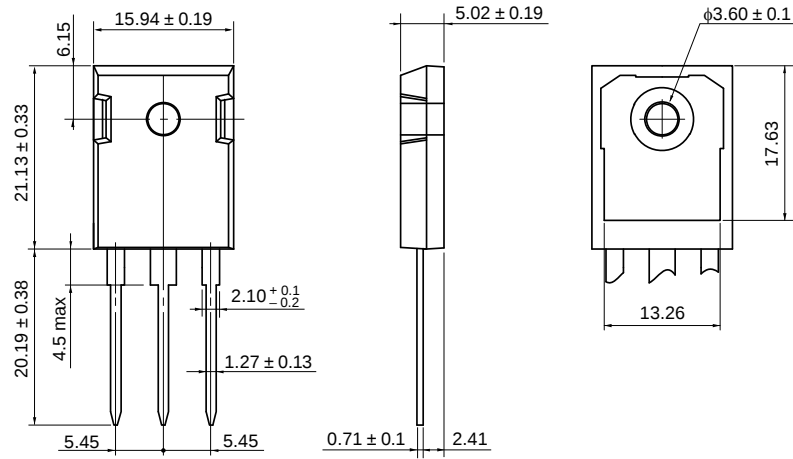
运行波形



封装尺寸

封装名称	JEITA 封装代码	RENESAS 代码	旧代码	重量[典型]
TO-247A	—	PRSS0003ZH-A	—	6.14g

单位: mm



订购信息

订购型号	数量	运输包装
RJH60F6DPQ-A0-T0	240 枚	纸盒包装 (管状容器)

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