

RJH60F7BDPQ-A0

600V - 50A - 绝缘栅双极晶体管
快速电源开关

R07DS0677CJ0100

修订版本 1.00

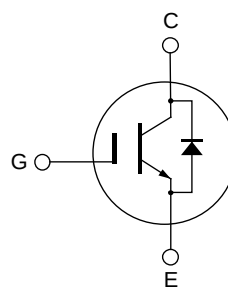
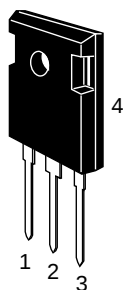
Sep 13, 2012

特点

- 低集电极/发射极饱和电压
 $V_{CE(sat)} = 1.35 \text{ V}$ 典型值 ($I_C = 50 \text{ A}$, $V_{GE} = 15 \text{ V}$, $T_a = 25^\circ\text{C}$)
- 内置快速恢复二极管于一封装
- 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	90	A
	$T_c = 100^\circ\text{C}$	I_C	50	A
集电极脉冲电流		$i_{c(\text{peak})}$ 注1	180	A
集电极/发射极二极管正向脉冲电流		$i_{DF(\text{peak})}$ 注2	100	A
集电极最大容许功率损耗		P_C	328.9	W
结壳热阻 (绝缘栅双极晶体管)		θ_{j-c}	0.38	$^\circ\text{C/W}$
结壳热阻 (二极管)		θ_{j-cd}	1.1	$^\circ\text{C/W}$
结温		T_j	150	$^\circ\text{C}$
储存温度		T_{stg}	-55 to +150	$^\circ\text{C}$

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

电特性

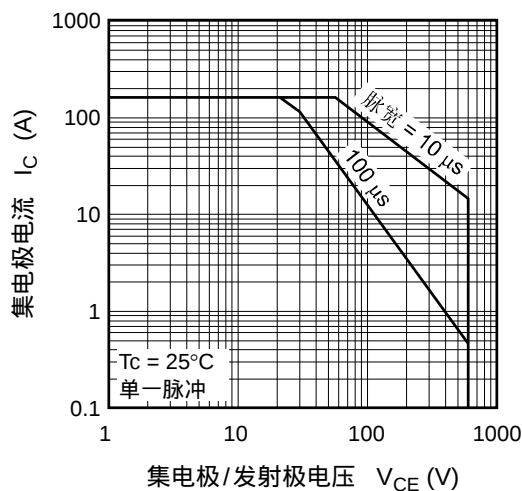
(T_j = 25°C)

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 = 50 A, V _{GE} = 15V ^{注3}
	V _{CE(sat)}	—	1.6	—	V	I _C = 90 A, V _{GE} = 15V ^{注3}
输入电容	C _{ies}	—	4700	—	pF	V _{CE} = 25 V
输出电容	C _{oes}	—	198	—	pF	V _{GE} = 0 V
反向传输电容	C _{res}	—	83	—	pF	f = 1 MHz
接通延迟时间	t _{d(on)}	—	63	—	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	—	81	—	ns	
关断延迟时间	t _{d(off)}	—	142	—	ns	
下降时间	t _f	—	74	—	ns	
集电极/发射极二极管正向电压	V _{ECF}	—	2.5	3.0	V	I _F = 30 A ^{注3}
集电极/发射极二极管反向恢复时间	t _{rr}	—	25	—	ns	I _F = 30 A di _F /dt = 100 A/μs

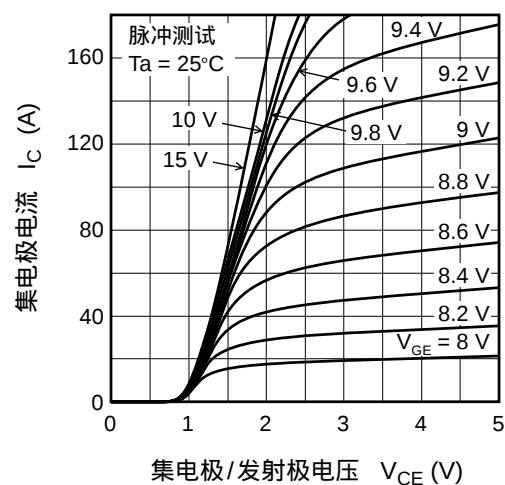
注: 3. 脉冲测试

主要特性

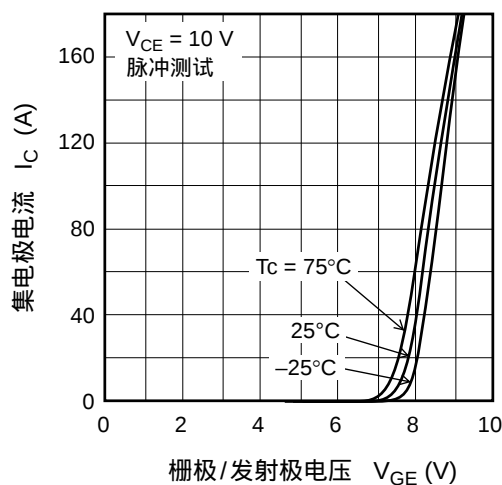
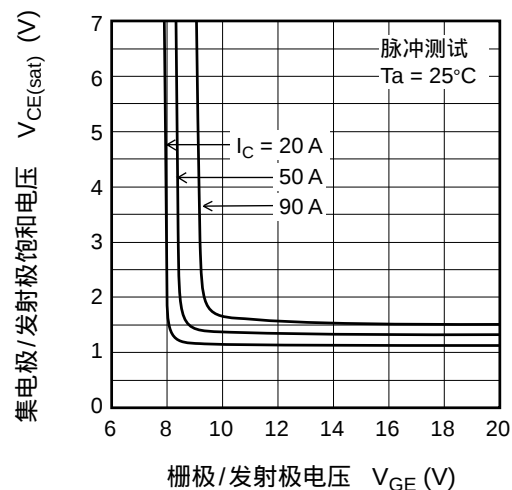
最大安全工作区域



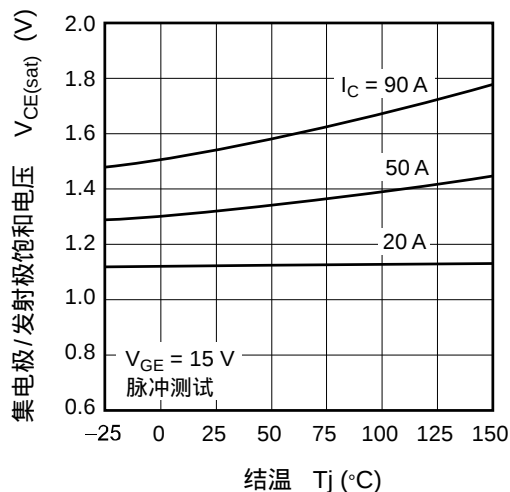
典型输出特性



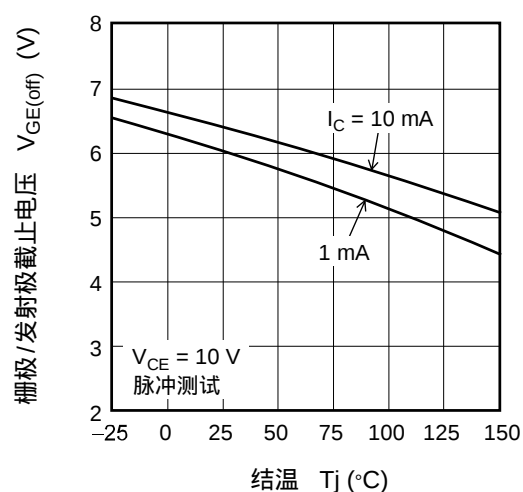
典型传输特性

集电极/发射极饱和电压-
栅极/发射极电压 (典型)

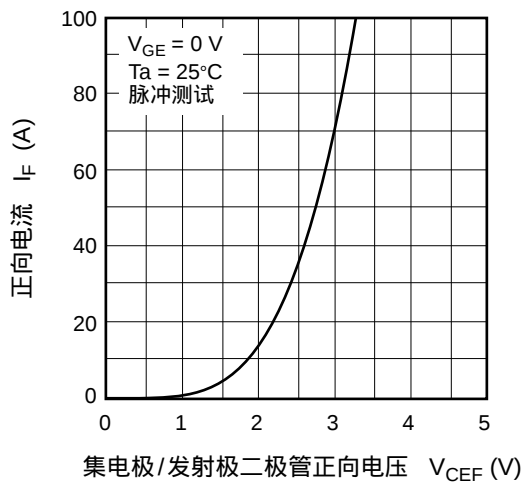
集电极/发射极饱和电压-结温 (典型)



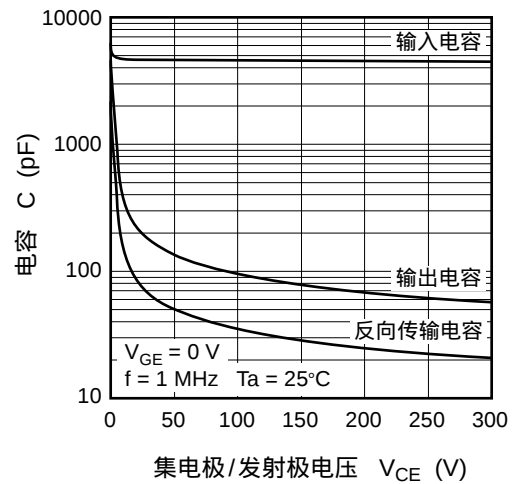
栅极/发射极截止电压-结温 (典型)



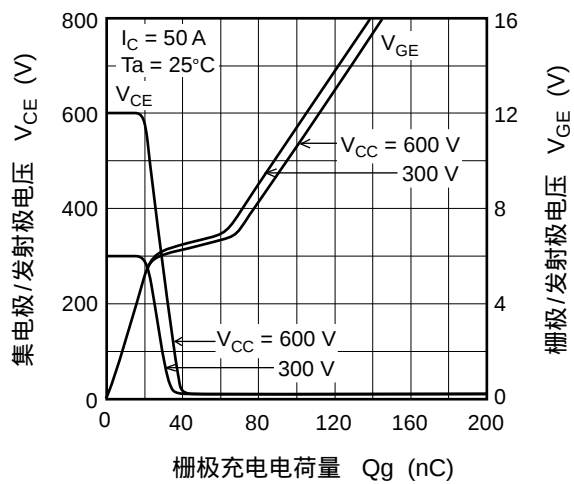
正向电流-正向电压 (典型)



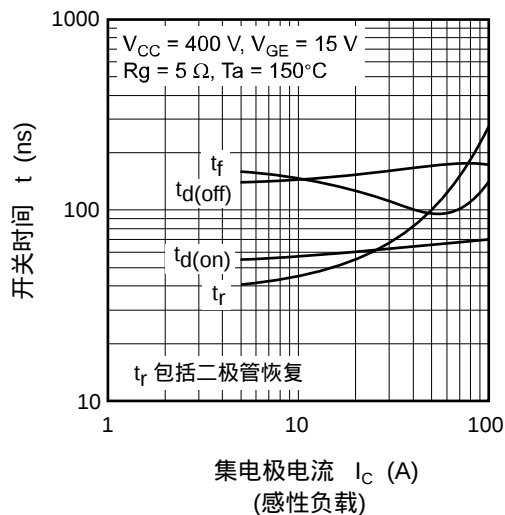
典型电容-集电极/发射极电压



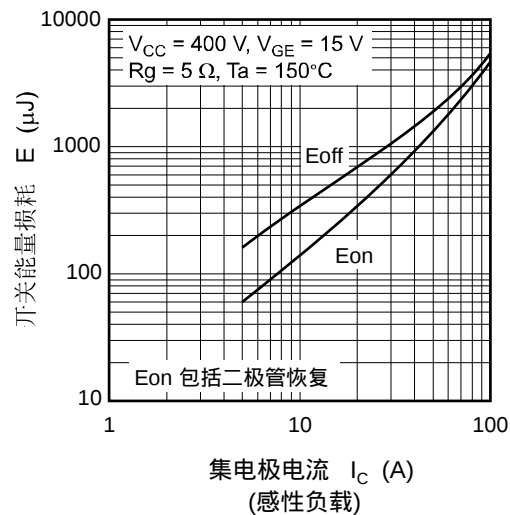
输入时序特性 (典型)



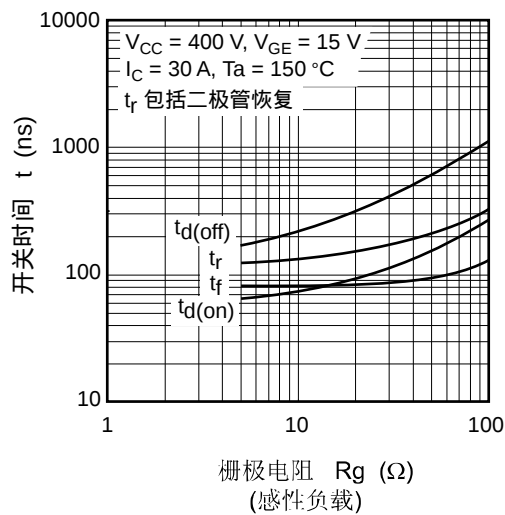
开关特性 (典型) (1)



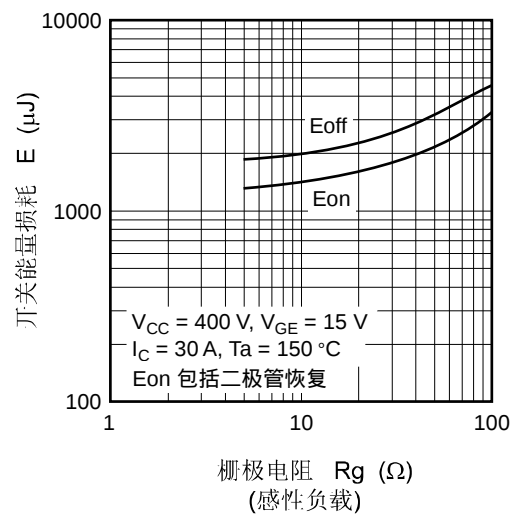
开关特性 (典型) (2)



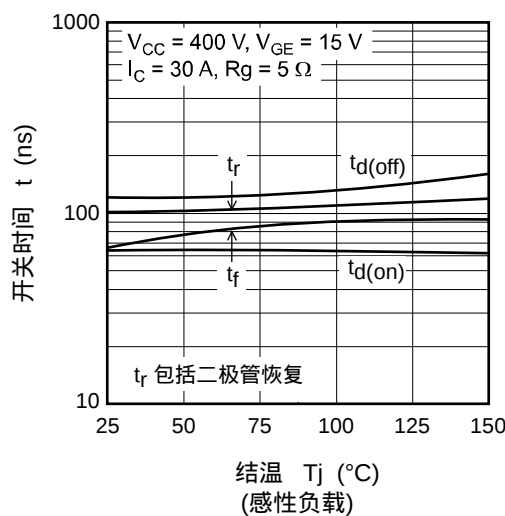
开关特性 (典型) (3)



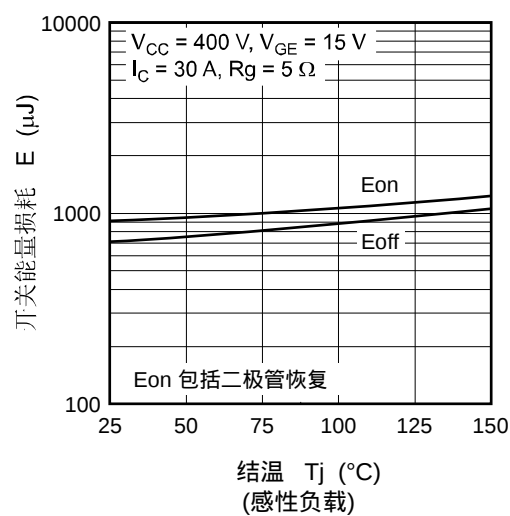
开关特性 (典型) (4)



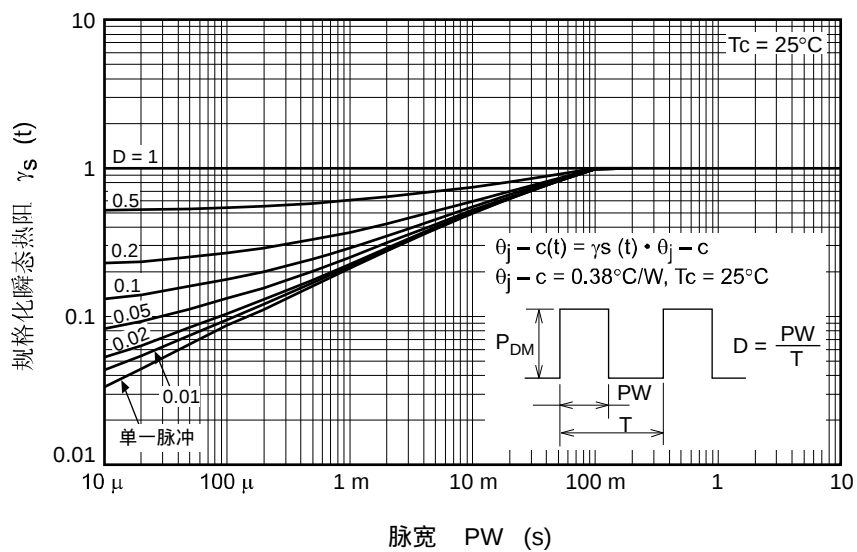
开关特性 (典型) (5)



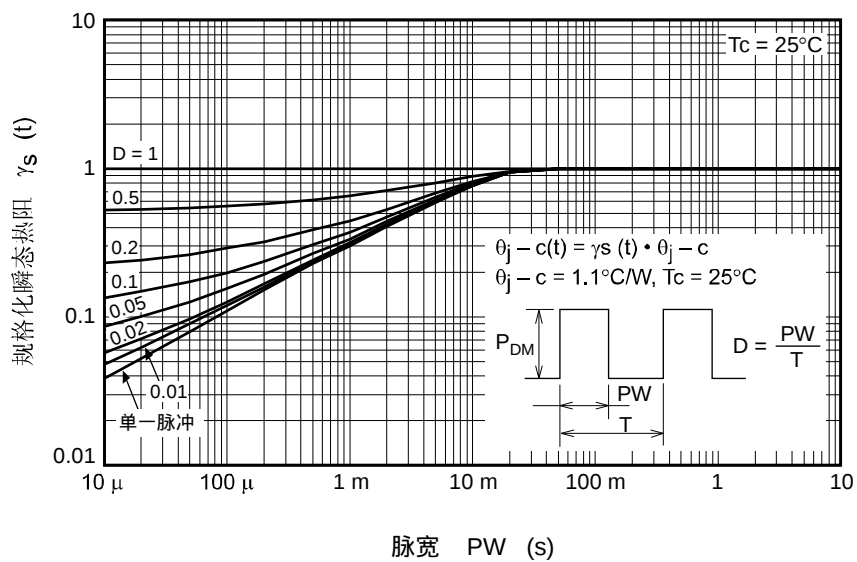
开关特性 (典型) (6)



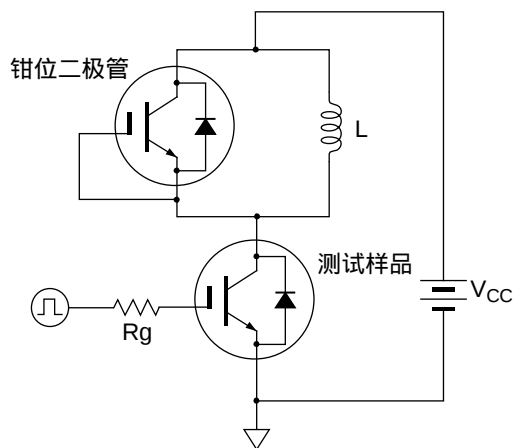
瞬态热阻特性规格化 (绝缘栅双极晶体管)



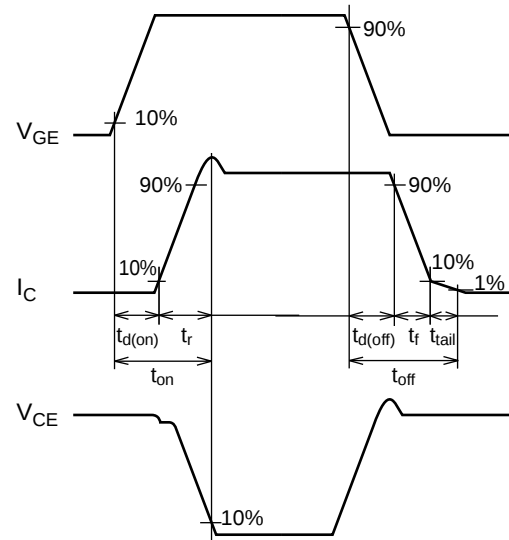
瞬态热阻特性规格化 (二极管)



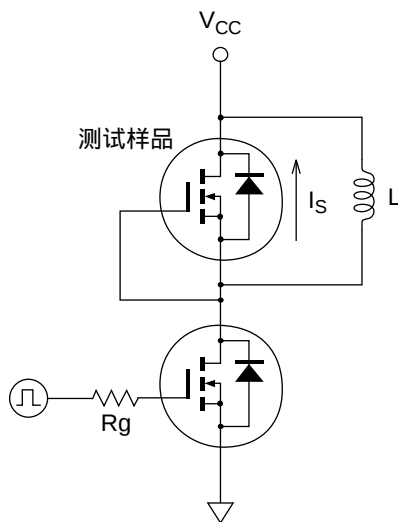
开关时间测定电路



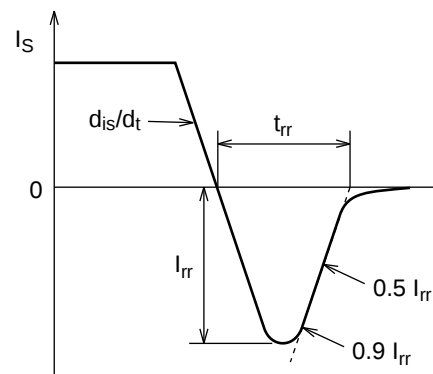
波形



二极管反向恢复时间测定电路



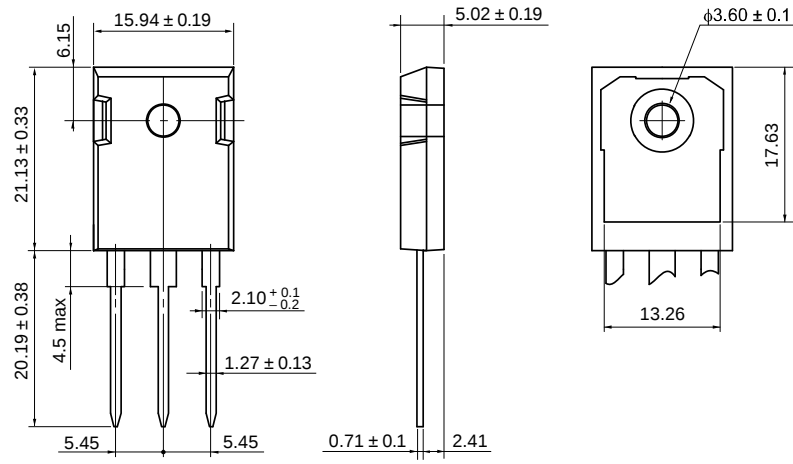
波形



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
RJH60F7BDPQ-A0#T0	240 枚	纸盒包装 (管状容器)

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