

To our customers,

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## Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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# RJP4301APP

## Nch IGBT for Strobe Flash

REJ03G1709-0300

Rev.3.00

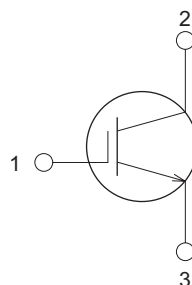
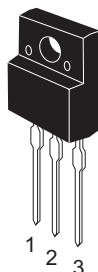
Oct 14, 2009

### Features

- $V_{CES}$  : 430 V
- TO-220FN package
- High Speed Switching

### Outline

RENESAS Package code: PRSS0003AB-A  
(Package name: TO-220FN)



1 : Gate  
2 : Collector  
3 : Emitter

### Applications

Strobe flash

### Maximum Ratings

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

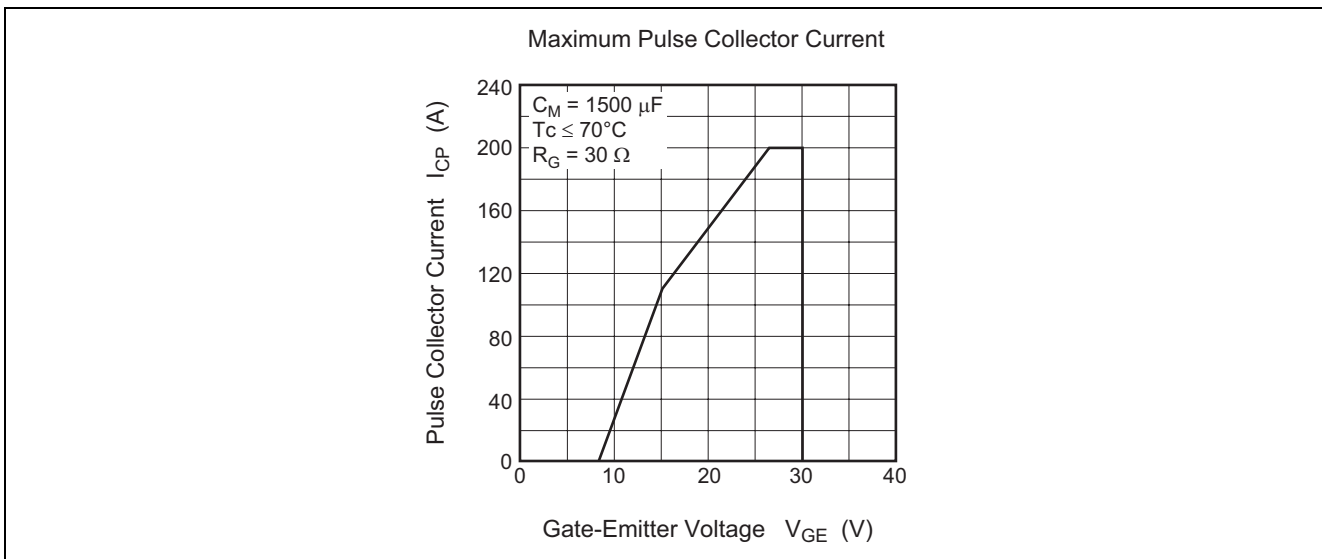
Parameter	Symbol	Ratings	Unit	Conditions
Collector-emitter voltage	$V_{CES}$	430	V	$V_{GE} = 0\text{ V}$
Gate-emitter voltage	$V_{GES}$	$\pm 33$	V	$V_{CE} = 0\text{ V}$ , Refer to item 4 under Notes on the Actual Specifications
Collector current (Pulse)	$I_{CM}$	200	A	$C_M = 1500\ \mu\text{F}$ (see performance curve)
Maximum power dissipation	$P_C$	30	W	
Junction temperature	$T_j$	- 40 to +150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	- 40 to +150	$^\circ\text{C}$	
Mass	—	2.0	g	Typical value

## Electrical Characteristics

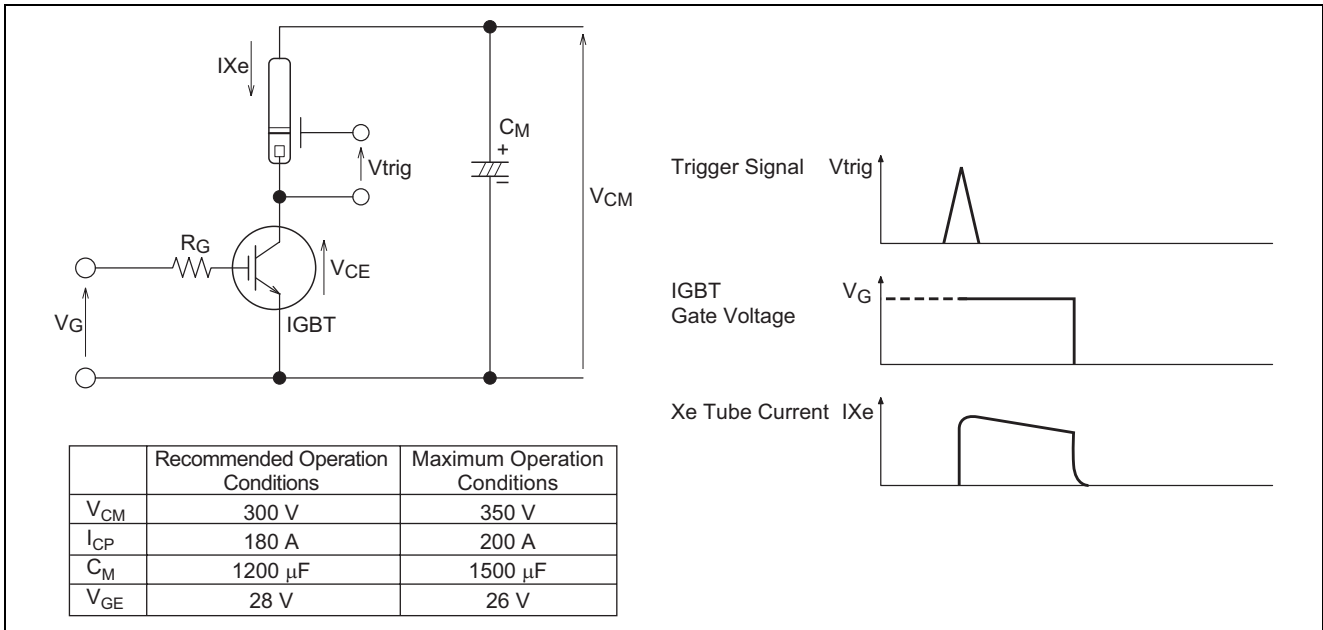
(T<sub>j</sub> = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Collector-emitter breakdown voltage	V <sub>(BR)CES</sub>	430	—	—	V	I <sub>C</sub> = 100 μA, V <sub>GE</sub> = 0 V
Collector-emitter leakage current	I <sub>CES</sub>	—	—	1	μA	V <sub>CE</sub> = 430 V, V <sub>GE</sub> = 0 V
Gate-emitter leakage current	I <sub>GES</sub>	—	—	±0.1	μA	V <sub>GE</sub> = ±33 V, V <sub>CE</sub> = 0 V
Gate-emitter threshold voltage	V <sub>GE(th)</sub>	3.0	—	5.5	V	V <sub>CE</sub> = 10 V, I <sub>C</sub> = 1 mA
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	4.0	10	V	I <sub>C</sub> = 200 A, V <sub>GE</sub> = 26 V
Input capacitance	C <sub>ies</sub>	—	1150	—	pF	V <sub>CE</sub> = 25 V
Output capacitance	C <sub>oes</sub>	—	125	—	pF	V <sub>GS</sub> = 0
Reverse transfer capacitance	C <sub>res</sub>	—	14	—	pF	f = 1 MHz
Turn-on delay time	t <sub>d(on)</sub>	—	0.01	—	μs	I <sub>D</sub> = 200 A
Rise time	t <sub>r</sub>	—	0.06	—	μs	V <sub>GS</sub> = 26 V
Turn-off delay time	t <sub>d(off)</sub>	—	0.15	—	μs	V <sub>CC</sub> = 300 V
Fall time	t <sub>f</sub>	—	0.2	—	μs	R <sub>G</sub> = 25 Ω

## Performance Curves



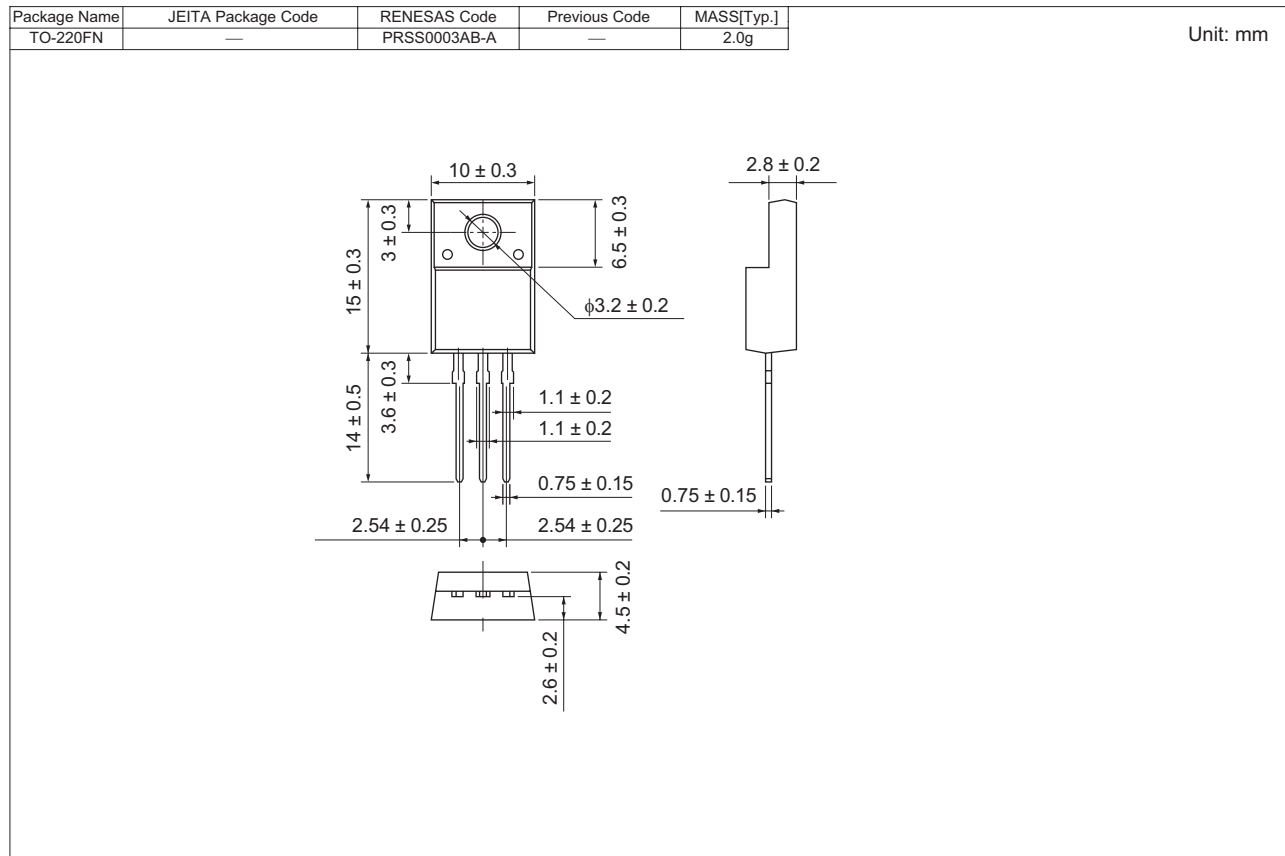
## Application Example



## Precautions on Usage

1. Gate drive voltage during on-period must be applied to satisfy the rating of maximum pulse collector current. And peak reverse gate current during turn-off must become less than 1 A. (In general, when  $R_{G(off)} = 30 \Omega$ , it is satisfied.)
2. IGBT has MOS structure and its gate is insulated by thin silicon oxide. So please handle carefully to protect the device from electrostatic charge.
3. The operation life should be endured until repeated discharge of 5,000 times under the charge current ( $I_{Xe} \leq 200$  A : full luminescence condition) of main capacitor. Repetition period under full luminescence condition is over 3 seconds.
4. Total operation hours applied to the gate-emitter voltage must be within 5,000 hours.

## Package Dimensions



## Ordering Information

Part No.	Quantity	Shipping Container
RJP4301APP-00-T2	50 pcs	Magazine (Tube)

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