

# RJP5001APP-M0

R07DS0750EJ0100

Rev.1.00

## Nch IGBT for Strobe Flash

Apr 26, 2012

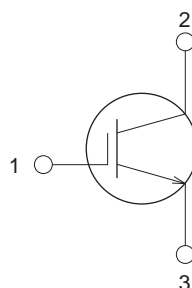
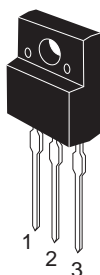
### Features

- $V_{CES}$  : 500 V
- TO-220FL package
- High Speed Switching

### Outline

RENESAS Package code: PRSS0003AF-A)

(Package name: TO-220FL)



1 : Gate  
2 : Collector  
3 : Emitter

### Applications

Strobe flash

### Maximum Ratings

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

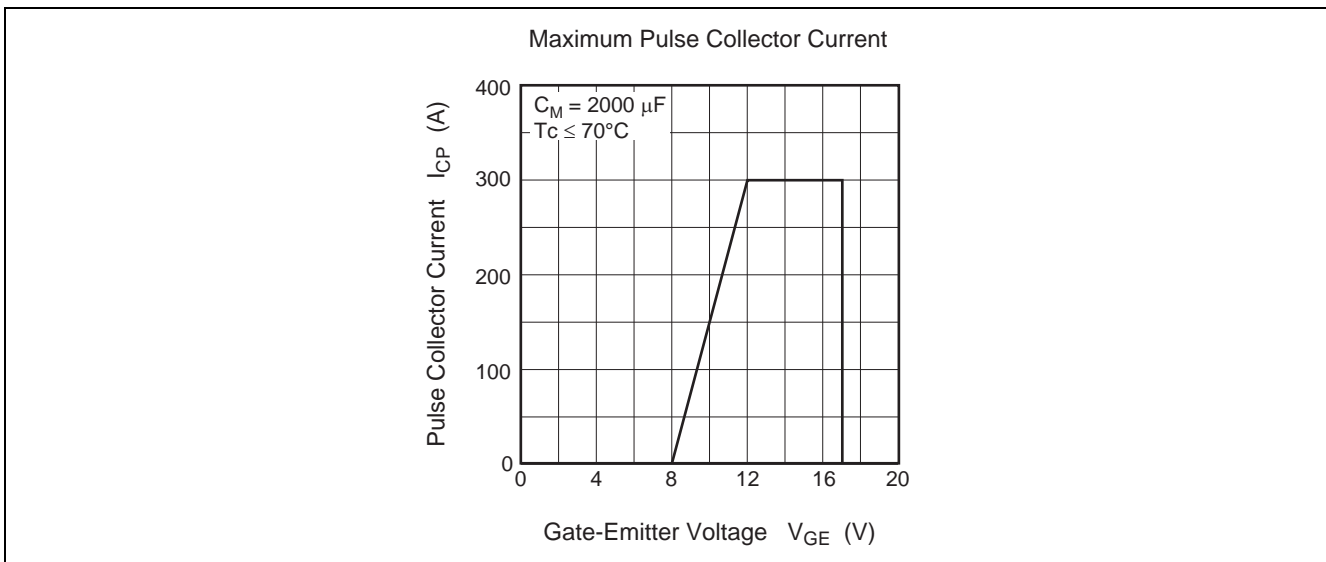
Parameter	Symbol	Ratings	Unit	Conditions
Collector-emitter voltage	$V_{CES}$	500	V	$V_{GE} = 0\text{ V}$
Gate-emitter voltage	$V_{GES}$	$\pm 17$	V	$V_{CE} = 0\text{ V}$ , Refer to item 4 under Notes on the Actual Specifications
Collector current (Pulse)	$I_{CM}$	300	A	$C_M = 2000\ \mu\text{F}$ (see performance curve)
Maximum power dissipation	$P_C$	45	W	
Junction temperature	$T_j$	- 40 to +150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	- 40 to +150	$^\circ\text{C}$	
Mass	—	1.5	g	Typical value

## Electrical Characteristics

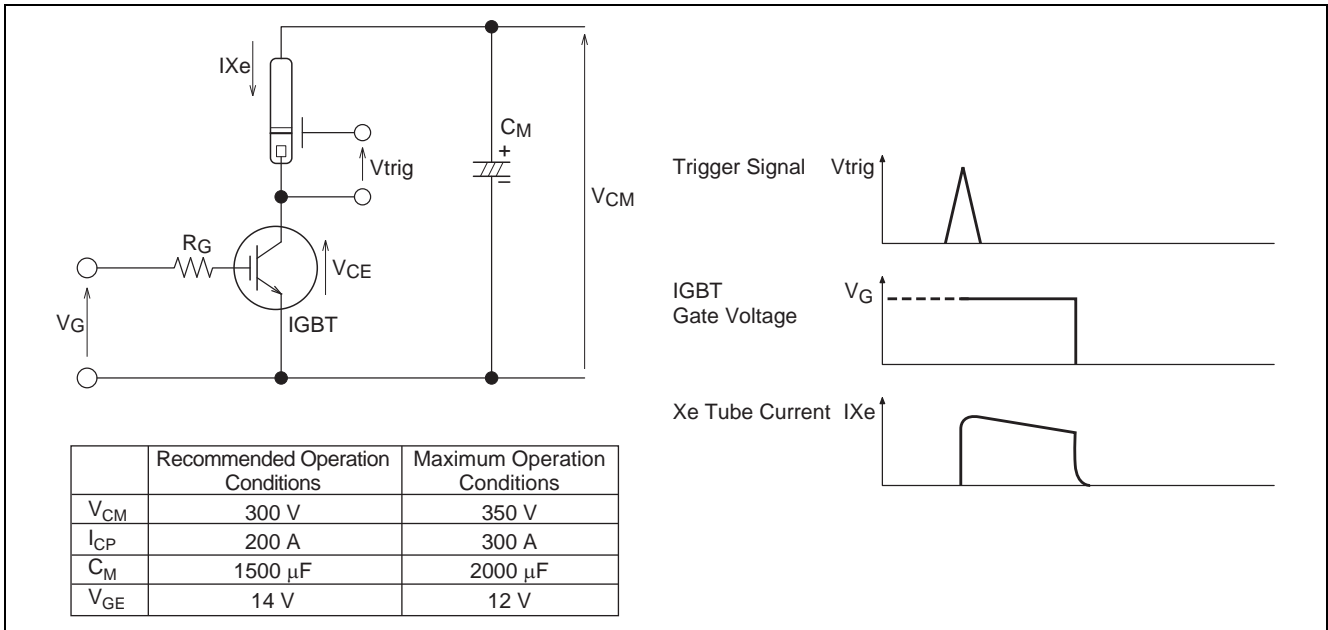
(T<sub>j</sub> = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Collector-emitter breakdown voltage	V <sub>(BR)CES</sub>	500	—	—	V	I <sub>C</sub> = 100 μA, V <sub>GE</sub> = 0 V
Collector-emitter leakage current	I <sub>CES</sub>	—	—	10	μA	V <sub>CE</sub> = 500 V, V <sub>GE</sub> = 0 V
Gate-emitter leakage current	I <sub>GES</sub>	—	—	±0.1	μA	V <sub>GE</sub> = ±17 V, V <sub>CE</sub> = 0 V
Gate-emitter threshold voltage	V <sub>GE(th)</sub>	1.3	—	2.7	V	V <sub>CE</sub> = 10 V, I <sub>C</sub> = 1 mA
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	4.7	10	V	I <sub>C</sub> = 300 A, V <sub>GE</sub> = 12 V
Input capacitance	C <sub>iss</sub>	—	2050	—	pF	V <sub>CE</sub> = 25 V
Output capacitance	C <sub>oss</sub>	—	130	—	pF	V <sub>GE</sub> = 0 V
Reverse transfer capacitance	C <sub>rss</sub>	—	12	—	pF	f = 1 MHz
Turn-on delay time	t <sub>d(on)</sub>	—	0.10	—	μs	I <sub>C</sub> = 300 A
Rise time	t <sub>r</sub>	—	0.43	—	μs	V <sub>GE</sub> = 12 V
Turn-off delay time	t <sub>d(off)</sub>	—	0.20	—	μs	V <sub>CC</sub> = 300 V
Fall time	t <sub>f</sub>	—	0.55	—	μs	R <sub>G</sub> = 30 Ω

## Performance Curves



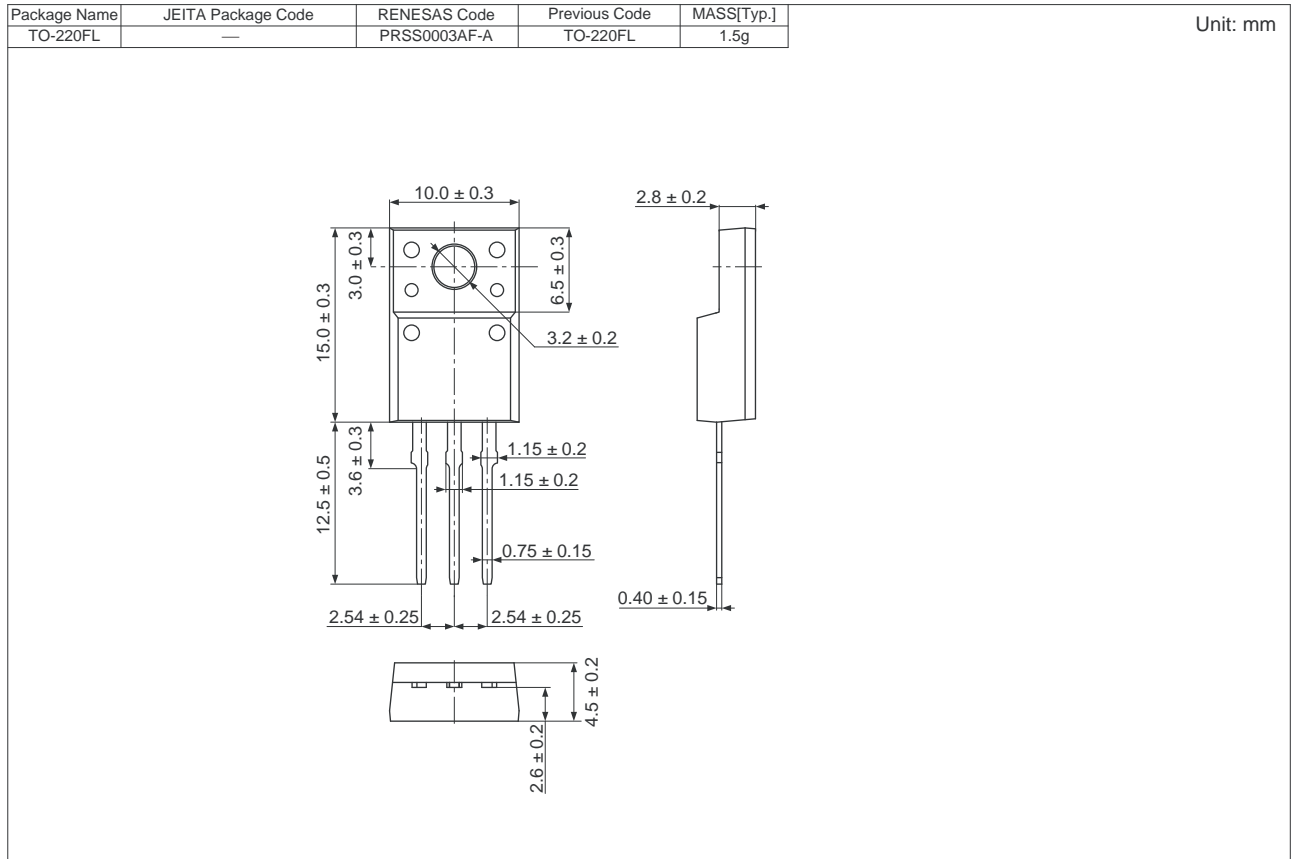
## Application Example



## Precautions on Usage

1. Gate drive voltage during on-period must be applied to satisfy the rating of maximum pulse collector current. And turn-off  $dv/dt$  must become less than 1000 V/ $\mu$ s.
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 ( $I_{Xe} \leq 300$  A : full luminescence condition) of main capacitor. Repetition period under full luminescence condition is over 5 seconds.
4. Total operation hours applied to the gate-emitter voltage must be within 5,000 hours.
5. Switching frequency is using it by less than 70 kHz.

## Package Dimensions



## Ordering Information

Orderable Part Number	Quantity	Shipping Container
RJP5001APP-M0-T2	50 pcs	Magazine (Tube)

Note: The symbol of 2nd "-" is occasionally presented as "#".

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