

RJP5001APP-M0

Nch IGBT for Strobe Flash

R07DS0750EJ0100

Rev.1.00

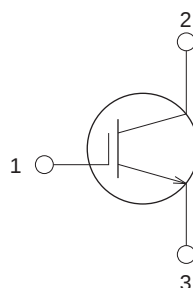
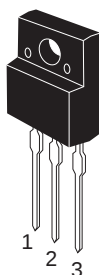
Apr 26, 2012

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

(Tc = 25°C)

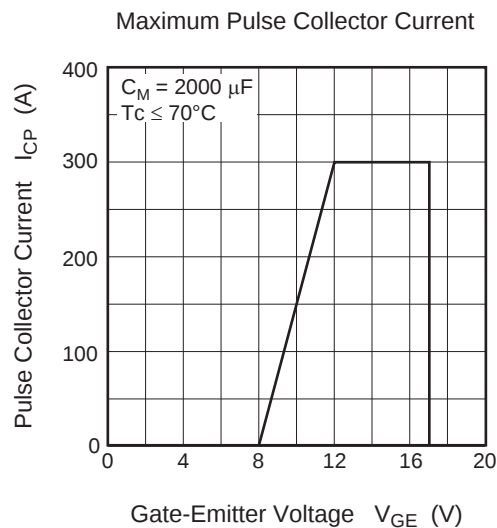
Parameter	Symbol	Ratings	Unit	Conditions
Collector-emitter voltage	V_{CES}	500	V	$V_{GE} = 0$ V
Gate-emitter voltage	V_{GES}	± 17	V	$V_{CE} = 0$ V, Refer to item 4 under Notes on the Actual Specifications
Collector current (Pulse)	I_{CM}	300	A	$C_M = 2000$ μ F (see performance curve)
Maximum power dissipation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

Electrical Characteristics

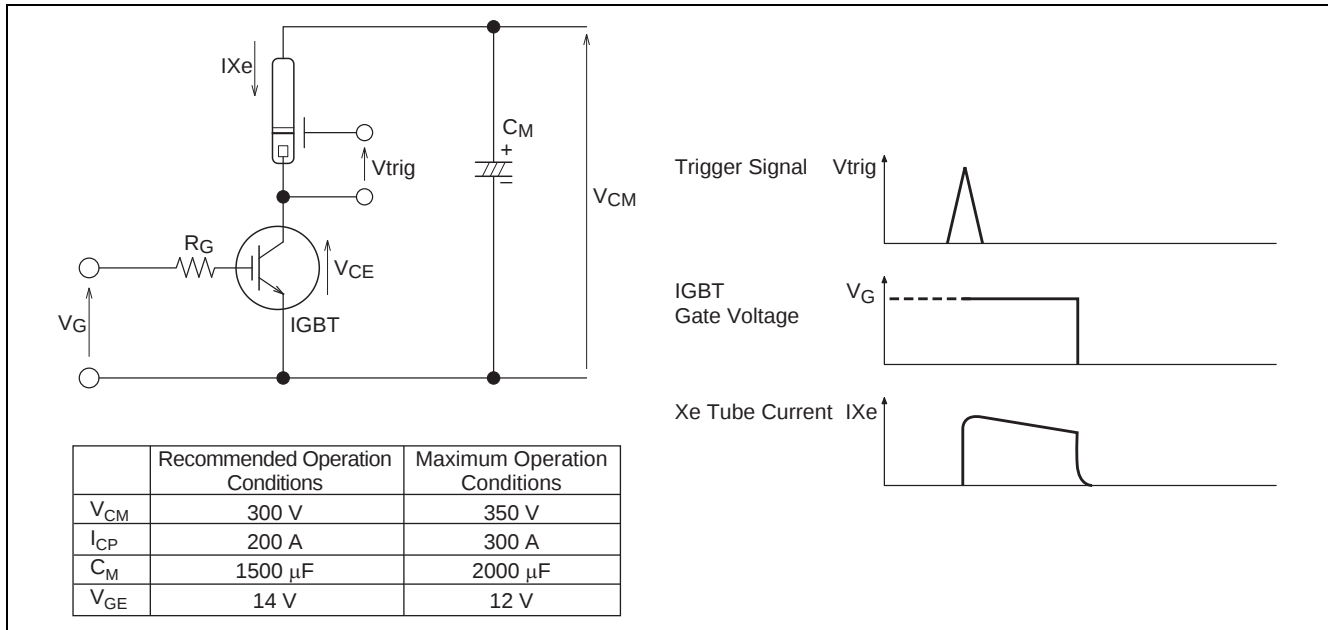
(T_j = 25°C)

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

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/ μ 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

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]	Unit: mm
TO-220FL	—	PRSS0003AF-A	TO-220FL	1.5g	

The drawing shows the mechanical dimensions of the RJP5001APP-M0 TO-220FL package. The top view shows a square body with a central circular feature. The side view shows the package's profile with a mounting tab. The detail view shows the mounting tab's dimensions.

Dimensions (mm):

- Top view: 10.0 ± 0.3 (width), 15.0 ± 0.3 (height), 3.0 ± 0.3 (central feature width), 6.5 ± 0.3 (central feature height), 3.2 ± 0.2 (central feature offset), 1.15 ± 0.2 (mounting tab width), 0.75 ± 0.15 (mounting tab height), 2.54 ± 0.25 (mounting tab pitch), 2.54 ± 0.25 (mounting tab width), 2.54 ± 0.25 (mounting tab height).
- Side view: 2.8 ± 0.2 (package height), 0.40 ± 0.15 (mounting tab height).
- Detail view: 4.5 ± 0.2 (mounting tab width), 2.6 ± 0.2 (mounting tab height).

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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