

To our customers,

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

April 1st, 2010
Renesas Electronics Corporation

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

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RJP5001APP

Nch IGBT for Strobe Flash

REJ03G1710-0100

Rev.1.00

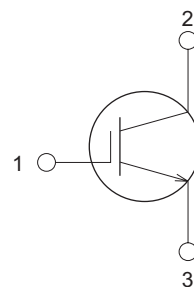
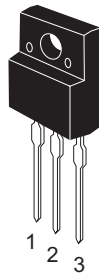
Jul 03, 2008

Features

- V_{CES} : 500 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

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

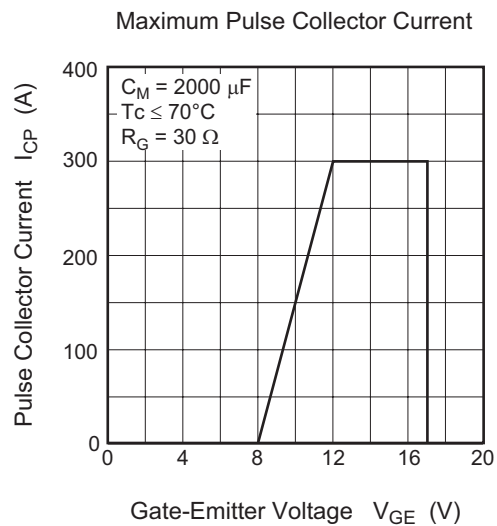
Parameter	Symbol	Ratings	Unit	Conditions
Collector-emitter voltage	V_{CES}	500	V	$V_{GE} = 0 \text{ V}$
Gate-emitter voltage	V_{GES}	± 17	V	$V_{CE} = 0 \text{ V}$, Refer to item 4 under Notes on the Actual Specifications
Collector current (Pulse)	I_{CM}	300	A	$C_M = 2000 \mu\text{F}$ (see performance 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	—	2.0	g	Typical value

Electrical Characteristics

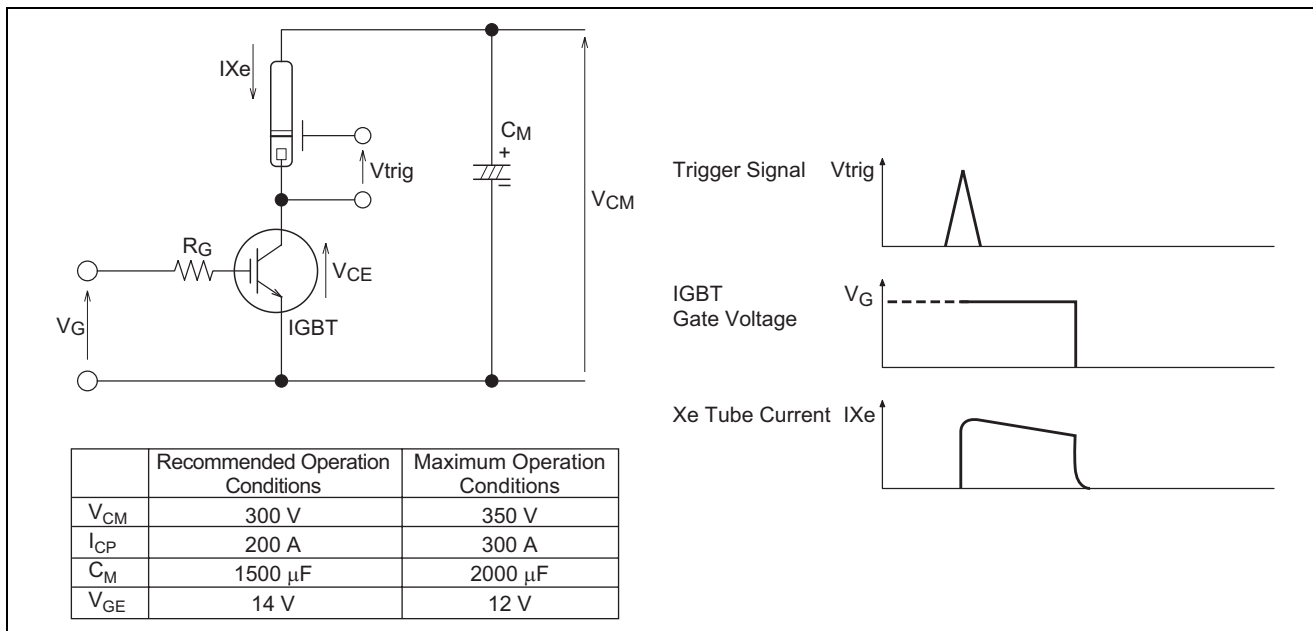
(T_j = 25°C)

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 _{DS} = 25 V V _{GS} = 0 f = 1 MHz
Output capacitance	C _{oss}	—	130	—	pF	
Reverse transfer capacitance	C _{rss}	—	12	—	pF	
Turn-on delay time	t _{d(on)}	—	0.1	—	μs	V _{DD} = 300 V I _D = 12 A V _{GS} = 350 V R _G = 25 Ω
Rise time	t _r	—	0.5	—	μs	
Turn-off delay time	t _{d(off)}	—	0.2	—	μs	
Fall time	t _f	—	0.8	—	μs	

Performance Curves



Application Example



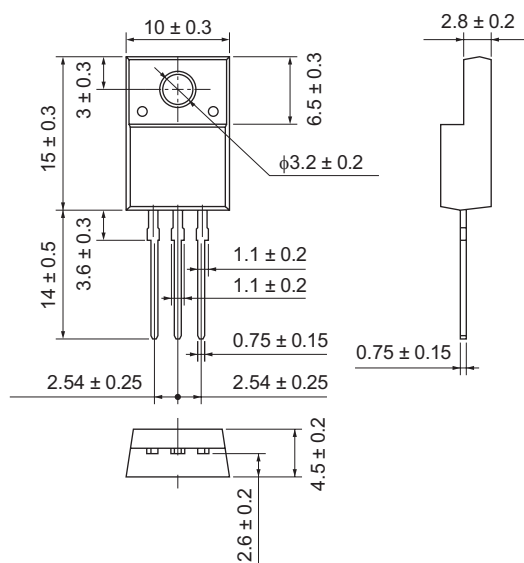
Precautions on Usage

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.

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-220FN	—	PRSS0003AB-A	—	2.0g

Unit: mm



Ordering Information

Part No.	Quantity	Shipping Container
RJP5001APP-00-T2	50 pcs	Magazine (Tube)

Notes:

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