To our customers,

Old Company Name in Catalogs and Other Documents

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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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RJP4301APP

Nch IGBT for Strobe Flash

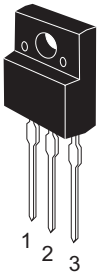
REJ03G1709-0300
Rev.3.00
Oct 14, 2009

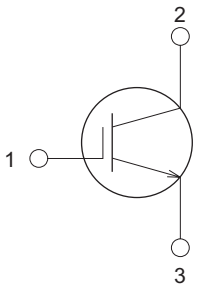
Features

- 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

(Tc = 25°C)

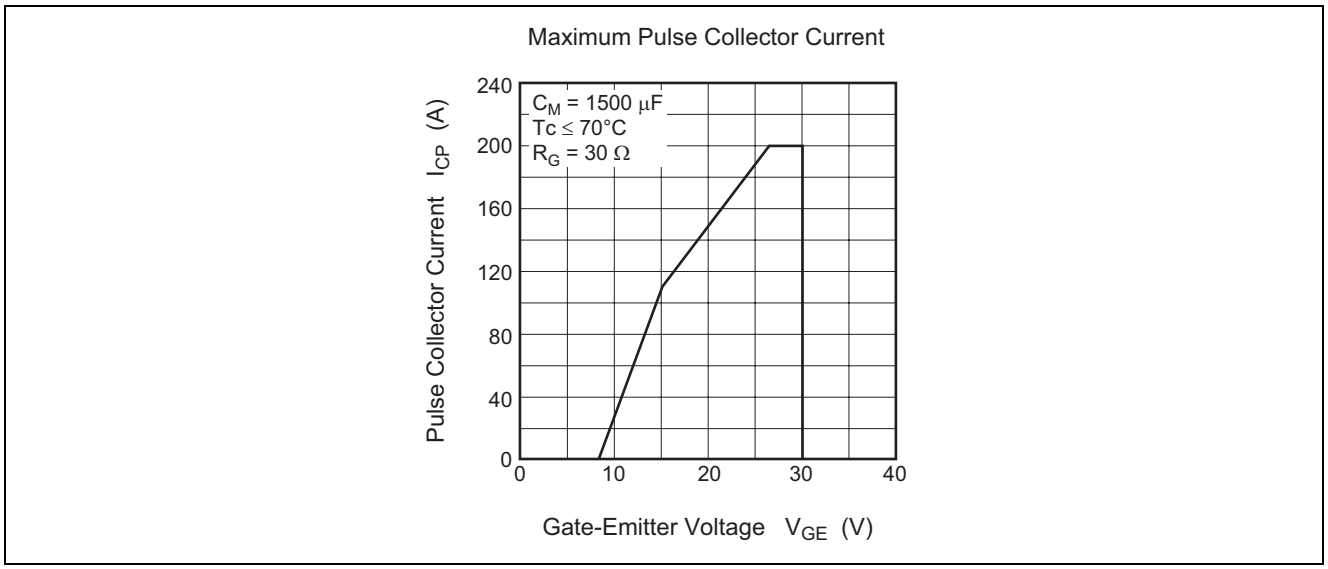
Parameter	Symbol	Ratings	Unit	Conditions
Collector-emitter voltage	V_{CES}	430	V	V_{GE} = 0 V
Gate-emitter voltage	V_{GES}	±33	V	V_{CE} = 0 V, Refer to item 4 under Notes on the Actual Specifications
Collector current (Pulse)	I_{CM}	200	A	C_M = 1500 µF (see performance curve)
Maximum power dissipation	P_C	30	W	
Junction temperature	Tj	– 40 to +150	°C	
Storage temperature	Tstg	– 40 to +150	°C	
Mass	—	2.0	g	Typical value

Electrical Characteristics

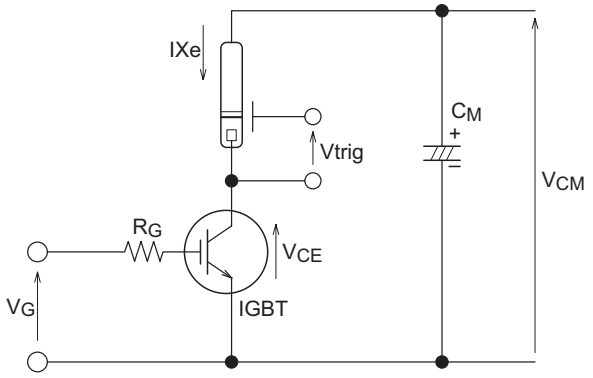
(Tj = 25°C)

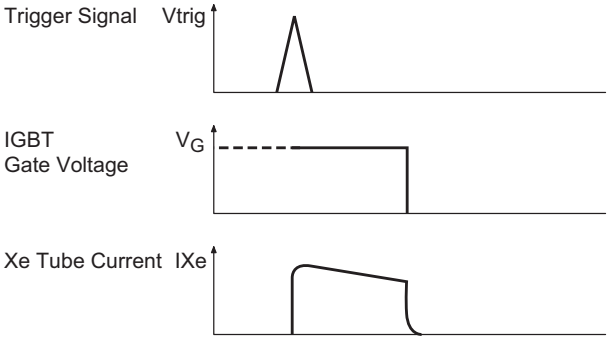
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Collector-emitter breakdown voltage	$V_{(BR)CES}$	430	—	—	V	I_C = 100 μA, V_{GE} = 0 V
Collector-emitter leakage current	I_{CES}	—	—	1	μA	V_{CE} = 430 V, V_{GE} = 0 V
Gate-emitter leakage current	I_{GES}	—	—	±0.1	μA	V_{GE} = ±33 V, V_{CE} = 0 V
Gate-emitter threshold voltage	$V_{GE(th)}$	3.0	—	5.5	V	V_{CE} = 10 V, I_C = 1 mA
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	4.0	10	V	I_C = 200 A, V_{GE} = 26 V
Input capacitance	Cies	—	1150	—	pF	V_{CE} = 25 V V_{GS} = 0 f = 1 MHz
Output capacitance	Coes	—	125	—	pF	
Reverse transfer capacitance	Cres	—	14	—	pF	
Turn-on delay time	$t_{d(on)}$	—	0.01	—	μs	I_D = 200 A V_{GS} = 26 V V_{CC} = 300 V R_G = 25 Ω
Rise time	t_r	—	0.06	—	μs	
Turn-off delay time	$t_{d(off)}$	—	0.15	—	μs	
Fall time	t_f	—	0.2	—	μs	

Performance Curves



Application Example





	Recommended Operation Conditions	Maximum Operation Conditions
V_{CM}	300 V	350 V
I_{CP}	180 A	200 A
C_M	1200 μF	1500 μF
V_{GE}	28 V	26 V

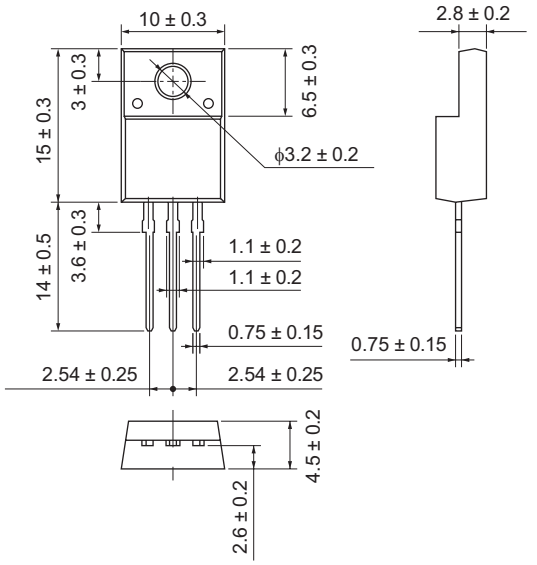
Precautions on Usage

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 Ω, 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

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
RJP4301APP-00-T2	50 pcs	Magazine (Tube)

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