

# RJP4009ANS

## Nch IGBT for Strobe Flash

R07DS0370EJ0200

Rev.2.00

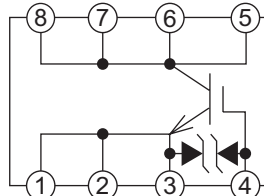
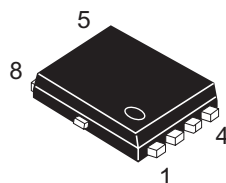
Apr 27, 2011

### Features

- Small surface mount package (VSON-8)
- $V_{CES}$ : 400 V
- $I_{CM}$ : 150 A @  $T_c = 70^\circ\text{C}$ ,  $C_M = 400 \mu\text{F}$
- Drive voltage: 2.5 V to 6 V (MAX)
- Pb-free
- Halogen-free

### Outline

RENESAS Package code: PVS0008JA-A  
(Package name: VSON-8<TNP-8DBV>)



1, 2, 3 : Emitter  
4 : Gate  
5, 6, 7, 8 : Collector

### Applications

Strobe flash for cameras

### Maximum Ratings

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

| Parameter                 | Symbol    | Ratings         | Unit             | Conditions                                         |
|---------------------------|-----------|-----------------|------------------|----------------------------------------------------|
| Collector-emitter voltage | $V_{CES}$ | 400             | V                | $V_{GE} = 0 \text{ V}$                             |
| Gate-emitter voltage      | $V_{GES}$ | $\pm 6$         | V                | $V_{CE} = 0 \text{ V}$                             |
| Collector current (Pulse) | $I_{CM}$  | 150             | A                | $C_M = 400 \mu\text{F}$<br>(see performance curve) |
| Power dissipation         | $P_j$     | 1.8             | W                |                                                    |
| Junction temperature      | $T_j$     | $-40$ to $+150$ | $^\circ\text{C}$ |                                                    |
| Storage temperature       | $T_{stg}$ | $-40$ to $+150$ | $^\circ\text{C}$ |                                                    |

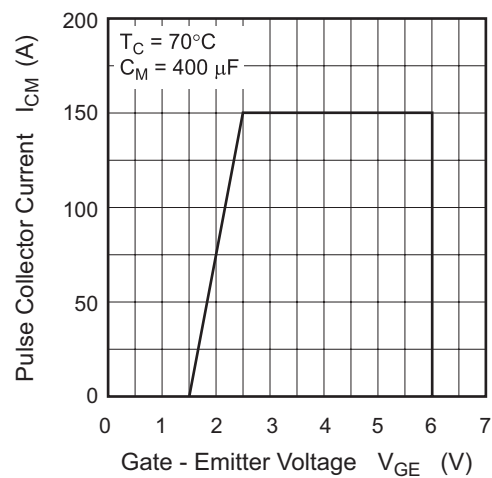
## Electrical Characteristics

(T<sub>j</sub> = 25°C)

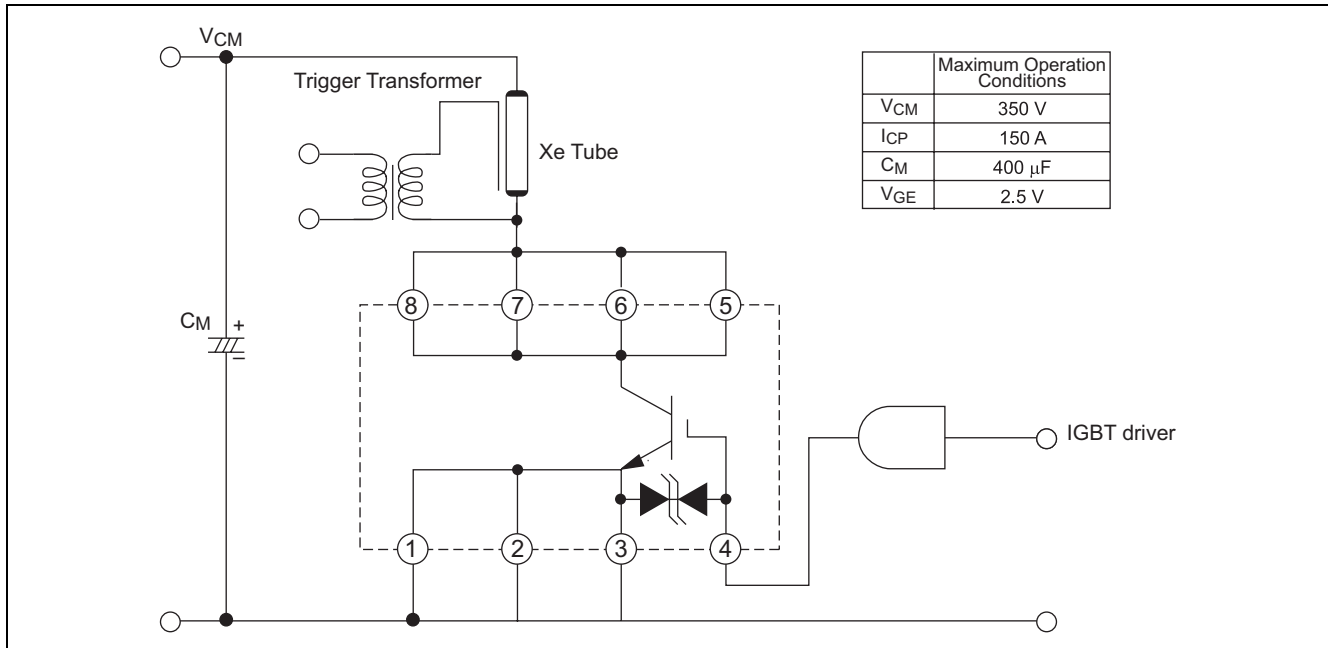
| Parameter                            | Symbol               | Min. | Typ. | Max. | Unit | Test conditions                                             |
|--------------------------------------|----------------------|------|------|------|------|-------------------------------------------------------------|
| Collector-emitter leakage current    | I <sub>CES</sub>     | —    | —    | 1    | μA   | V <sub>CE</sub> = 400 V, V <sub>GE</sub> = 0 V              |
| Gate-emitter leakage current         | I <sub>GES</sub>     | —    | —    | ±10  | μA   | V <sub>GE</sub> = ±6 V, V <sub>CS</sub> = 0 V               |
| Gate-emitter threshold voltage       | V <sub>GE(th)</sub>  | 0.4  | 0.6  | 1.2  | V    | V <sub>CE</sub> = 10 V, I <sub>C</sub> = 1 mA               |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub> | —    | 4.0  | 9.0  | V    | I <sub>C</sub> = 150 A, V <sub>GE</sub> = 2.5 V             |
| Input capacitance                    | C <sub>ies</sub>     | —    | 5500 | —    | pF   | V <sub>CE</sub> = 25 V, V <sub>GE</sub> = 0 V,<br>f = 1 MHz |

## Performance Curves

Maximum Pulse Collector Current  
(Conductive Capability in Strobe Flash Circuit)



## Application Example

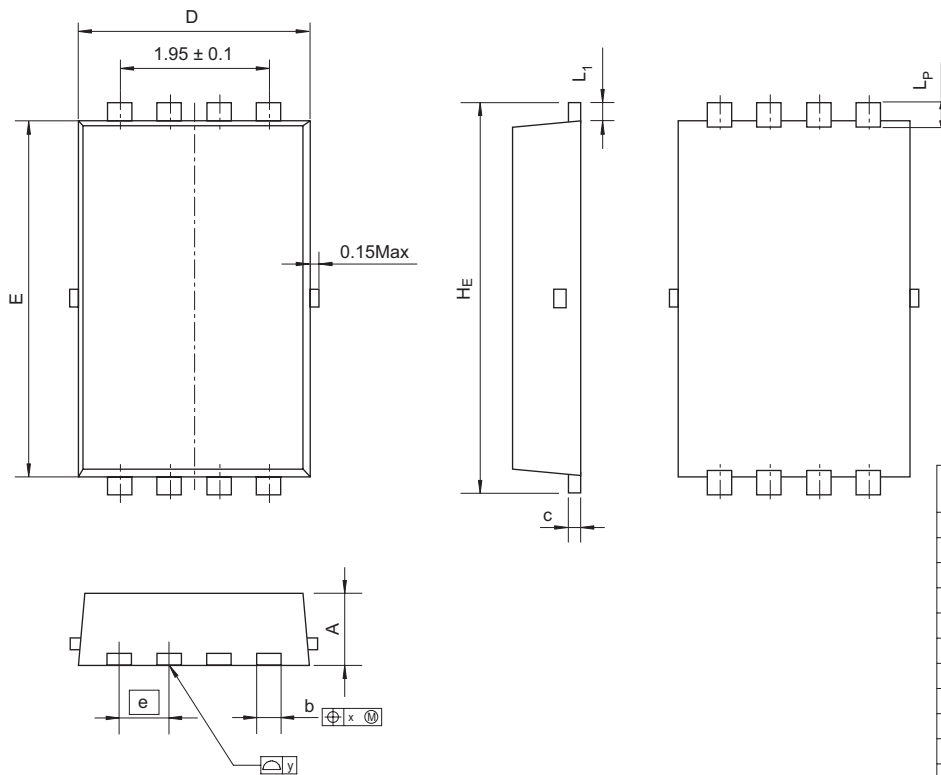


## Precautions on Usage

1. IGBT has MOS structure and its gate is insulated by thin silicon oxide. So please handle carefully to protect the device from electrostatic charge.
2. 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 400 V/ $\mu$ s. In general, when  $R_{G(off)} = 30 \Omega$ , it is satisfied.
3. The operation life should be endured until repeated discharge of 5,000 times under the charge current ( $I_{Xe} \leq 150$  A : full luminescence condition) of main capacitor. Repetition period under full luminescence condition is over 3 seconds.

## Package Dimensions

| Package Name | JEITA Package Code | RENESAS Code | Previous Code | MASS[Typ.] |
|--------------|--------------------|--------------|---------------|------------|
| VSON-8       | P-VSON8-3x4.4-0.65 | PVSN0008JA-A | TNP-8DBV      | 0.032g     |



| Reference Symbol | Dimension in Millimeters |      |      |
|------------------|--------------------------|------|------|
|                  | Min                      | Nom  | Max  |
| D                | 2.90                     | 3.00 | 3.10 |
| E                | 4.30                     | 4.40 | 4.50 |
| A                | —                        | —    | 0.95 |
| b                | 0.25                     | 0.30 | 0.40 |
| e                | —                        | 0.65 | —    |
| L <sub>P</sub>   | —                        | 0.35 | —    |
| x                | —                        | —    | 0.08 |
| y                | —                        | —    | 0.10 |
| c                | 0.09                     | 0.15 | 0.25 |
| H <sub>E</sub>   | 4.70                     | 4.80 | 4.90 |
| L <sub>1</sub>   | 0.10                     | 0.20 | 0.30 |

## Ordering Information

| Orderable Part No. | Quantity | Shipping Container |
|--------------------|----------|--------------------|
| RJP4009ANS-01-Q6   | 3000 pcs | Taping             |

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