

To all our customers

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## **Regarding the change of names mentioned in the document, such as Mitsubishi Electric and Mitsubishi XX, to Renesas Technology Corp.**

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The semiconductor operations of Hitachi and Mitsubishi Electric were transferred to Renesas Technology Corporation on April 1st 2003. These operations include microcomputer, logic, analog and discrete devices, and memory chips other than DRAMs (flash memory, SRAMs etc.) Accordingly, although Mitsubishi Electric, Mitsubishi Electric Corporation, Mitsubishi Semiconductors, and other Mitsubishi brand names are mentioned in the document, these names have in fact all been changed to Renesas Technology Corp. Thank you for your understanding. Except for our corporate trademark, logo and corporate statement, no changes whatsoever have been made to the contents of the document, and these changes do not constitute any alteration to the contents of the document itself.

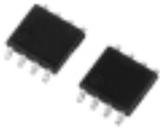
Note : Mitsubishi Electric will continue the business operations of high frequency & optical devices and power devices.

Renesas Technology Corp.  
Customer Support Dept.  
April 1, 2003

MITSUBISHI IGBT  
**CY20AAJ-8**

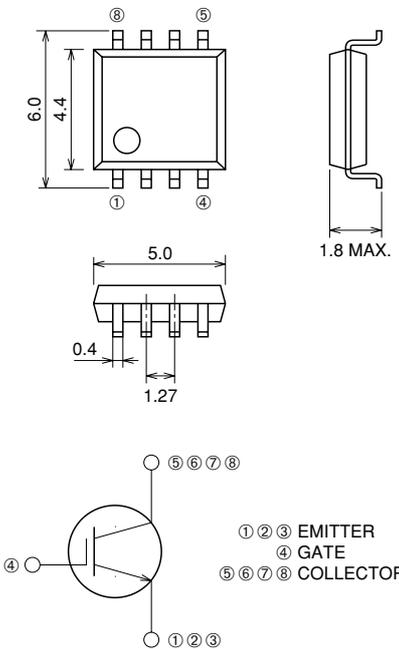
Nch IGBT for STROBE FLASHER

**CY20AAJ-8**



- VCES ..... 400V
- ICM ..... 130A
- Drive voltage ..... 4V

**OUTLINE DRAWING** Dimensions in mm



**SOP-8**

**APPLICATION**

Strobe flasher for Camera

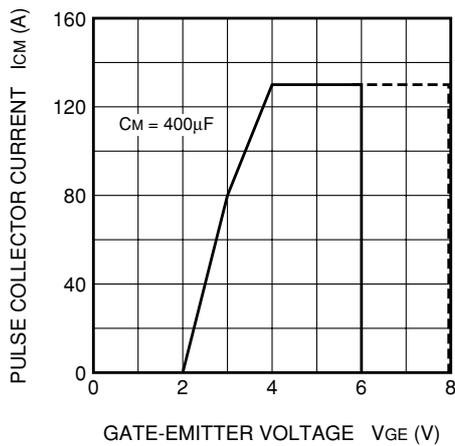
**MAXIMUM RATINGS** (Tc = 25°C)

| Symbol            | Parameter                  | Conditions                                 | Ratings    | Unit |
|-------------------|----------------------------|--|------------|------|
| V <sub>CE</sub> S | Collector-emitter voltage  | V <sub>GE</sub> = 0V                       | 400        | V    |
| V <sub>GE</sub> S | Gate-emitter voltage       | V <sub>CE</sub> = 0V                       | ±6         | V    |
| V <sub>GEM</sub>  | Peak gate-emitter voltage  | V <sub>CE</sub> = 0V, t <sub>w</sub> = 10s | ±8         | V    |
| I <sub>CM</sub>   | Collector current (Pulsed) | C <sub>M</sub> = 400μF see figure1         | 130        | A    |
| T <sub>j</sub>    | Junction temperature       |  | -40 ~ +150 | °C   |
| T <sub>stg</sub>  | Storage temperature        |  | -40 ~ +150 | °C   |

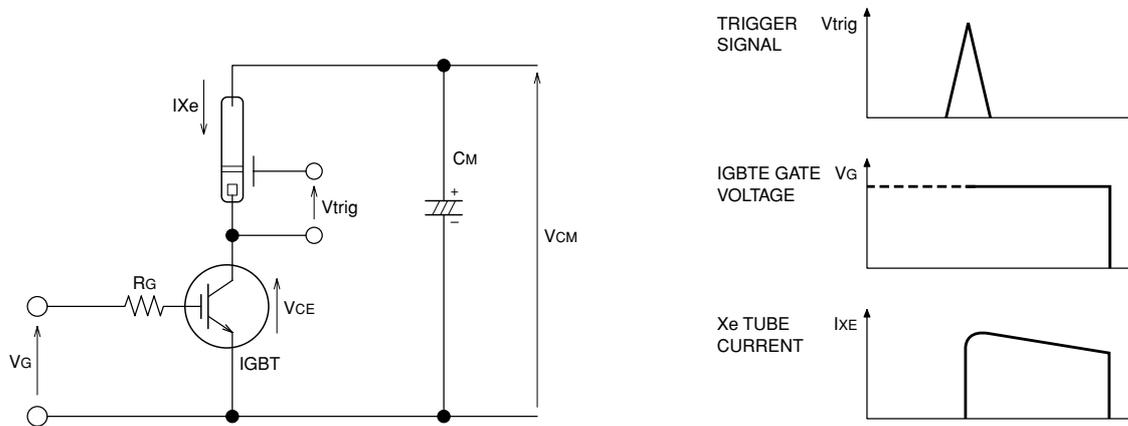
**ELECTRICAL CHARACTERISTICS** (T<sub>j</sub> = 25°C)

| Symbol               | Parameter                           | Test conditions                              | Limits |      |      | Unit |
|----------------------|-------------------------------------|--|--------|------|------|------|
|                      |                                     |  | Min.   | Typ. | Max. |      |
| V (BR) CES           | Collector-emitter breakdown voltage | I <sub>C</sub> = 1mA, V <sub>GE</sub> = 0V   | 450    | —    | —    | V    |
| I <sub>CES</sub>     | Collector-emitter leakage current   | V <sub>CE</sub> = 400V, V <sub>GE</sub> = 0V | —      | —    | 10   | μA   |
| I <sub>GES</sub>     | Gate-emitter leakage current        | V <sub>GE</sub> = ±6V, V <sub>CE</sub> = 0V  | —      | —    | ±0.1 | μA   |
| V <sub>GE (th)</sub> | Gate-emitter threshold voltage      | V <sub>CE</sub> = 10V, I <sub>C</sub> = 1mA  | —      | —    | 1.5  | V    |

**Figure1. MAXIMUM PULSE COLLECTOR CURRENT**



**APPLICATION EXAMPLE**



|   |                                     |
|---|-------------------------------------|
| <b>Recommended operation conditions</b> | <b>Maximum operation conditions</b> |
| V <sub>CM</sub> = 330V                  | V <sub>CM</sub> = 350V              |
| I <sub>CP</sub> = 120A                  | I <sub>CP</sub> = 130A              |
| C <sub>M</sub> = 300μF                  | C <sub>M</sub> = 400μF              |
| V <sub>GE</sub> = 5V                    |                                     |

- Notice 1. Gate drive voltage during on-state must be applied to satisfy the rating of maximum pulse collector current. And peak reverse gate current during turn-off must become less than 0.1A. (In general, when R<sub>G</sub> (off) = 30Ω, it is satisfied.)
- Notice 2. IGBT has MOS structure and its gate is insulated by thin silicon oxide. So please handle carefully not to give static electricity.
- Notice 3. The operation life should be endured 5,000 shots under the charge current (I<sub>Xe</sub> ≤ 130A : full luminescence condition) of main condenser (C<sub>M</sub> = 400μF). Repetitive period under the full luminescence conditions is over 3 seconds.
- Notice 4. Total gate operation time must be applied within 5,000 hours.