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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# CT40KM-8H

## Nch IGBT for Strobe Flasher

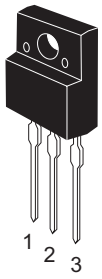
REJ03G0286-0200
Rev.2.00
Jul. 07, 2005

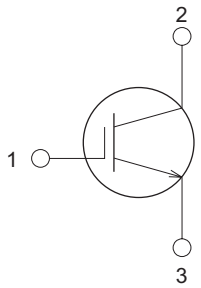
## Features

- $V_{CES}$ : 400 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 flashers

## Maximum Ratings

(Tc = 25°C)

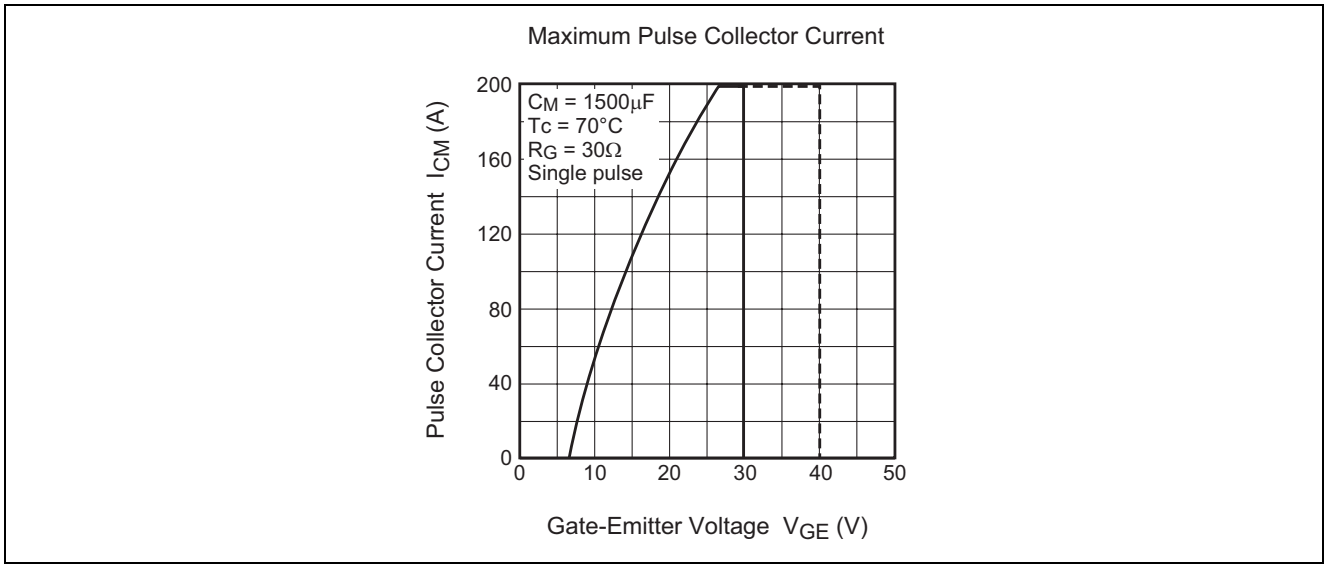
| Parameter | Symbol | Ratings | Unit | Conditions |
|---|---|---|---|---|
| Collector-emitter voltage | $V_{CES}$ | 400 | V | $V_{GE}$ = 0 V |
| Gate-emitter voltage | $V_{GES}$ | 30 | V | $V_{CE}$ = 0 V,<br>Refer to item 4 under Notes on the Actual Specifications |
| Peak gate-emitter voltage | $V_{GEM}$ | 40 | V | $V_{CE}$ = 0 V, tw = 0.5 s |
| Collector current (Pulse) | $I_{CM}$ | 200 | A | $C_M$ = 1500 µF<br>(see performance curve) |
| Maximum power dissipation | $P_C$ | 45 | W | |
| Junction temperature | Tj | – 40 to +150 | °C | |
| Storage temperature | Tstg | – 40 to +150 | °C | |
| Mass | — | 2.0 | g | Typical value |

## Electrical Characteristics

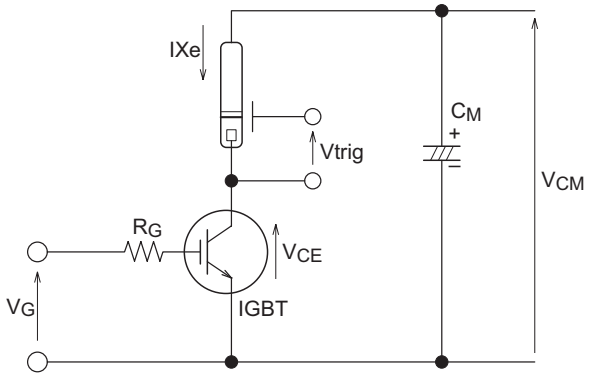
(Tj = 25°C)

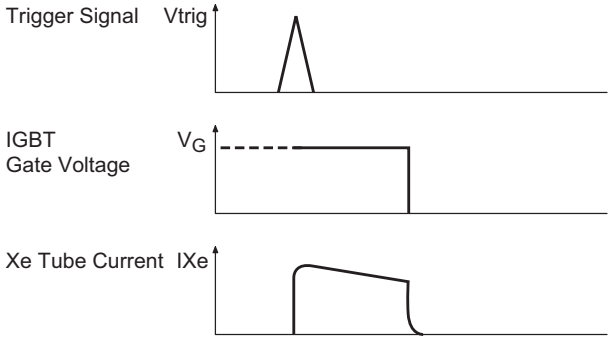
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test conditions |
|---|---|---|---|---|---|---|
| Collector-emitter breakdown voltage | $V_{(BR)CES}$ | 450 | — | — | V | $I_C$ = 1 mA, $V_{GE}$ = 0 V |
| Collector-emitter leakage current | $I_{CES}$ | — | — | 10 | μA | $V_{CE}$ = 400 V, $V_{GE}$ = 0 V |
| Gate-emitter leakage current | $I_{GES}$ | — | — | ±0.1 | μA | $V_{GE}$ = ±40 V, $V_{CE}$ = 0 V |
| Gate-emitter threshold voltage | $V_{GE(th)}$ | — | — | 7.0 | V | $V_{CE}$ = 10 V, $I_C$ = 1 mA |

## Performance Curves



## Application Example




| | Recommended Operation Conditions | Maximum Operation Conditions |
|---|---|---|
| $V_{CM}$ | 330 V | 350 V |
| $I_{CP}$ | 180 A | 200 A |
| $C_M$ | 1200 μF | 1500 μF |
| $V_{GE}$ | 28 V | — |

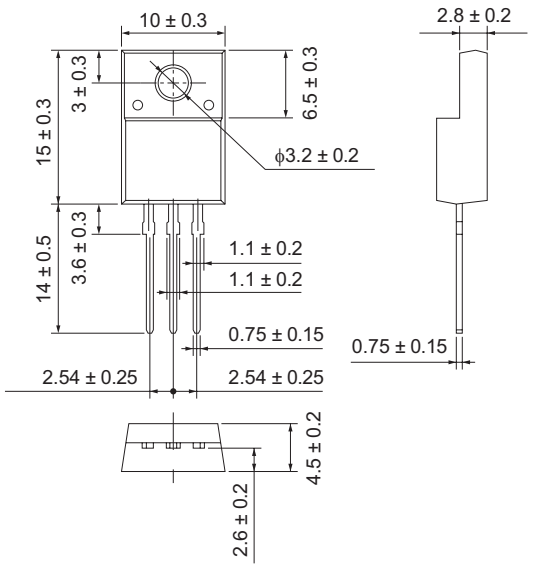
## Precautions on Usage

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 5,000 shots under the charge current ($I_{Xe} \leq 200$ A : full luminescence condition) of main capacitor ($C_M$ = 1500 μF) which can endure repeated discharge of 5,000 times. 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

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

Unit: mm




## Order Code

| Lead form | Standard packing | Quantity | Standard order code | Standard order code example |
|---|---|---|---|---|
| Straight type | Plastic Magazine (Tube) | 50 | Type name | CT40KM-8H |

Note : Please confirm the specification about the shipping in detail.

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