

## CY20AAH-8F

Nch IGBT for Strobe Flasher

REJ03G0509-0200

Preliminary

Rev.2.00

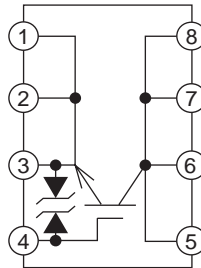
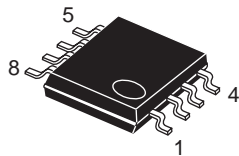
Nov 29, 2005

### Features

- $V_{CES}$ : 400 V
- $I_{CM}$ : 130 A
- Drive voltage: 2.5 V

### Outline

RENESAS Package code: PRSP0008DA-B  
(Package name: SOP-8 <8P2S-B>)



1, 2 : Emitter  
3 : Emitter  
(for the gate drive)  
4 : Gate  
5, 6, 7, 8 : Collector

Note: PIN 3 is for the Gate drive only.

Note that current from the main circuit cannot flow into this section. (Please see page 3)

### Applications

Strobe flasher for cameras

### Maximum Ratings

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

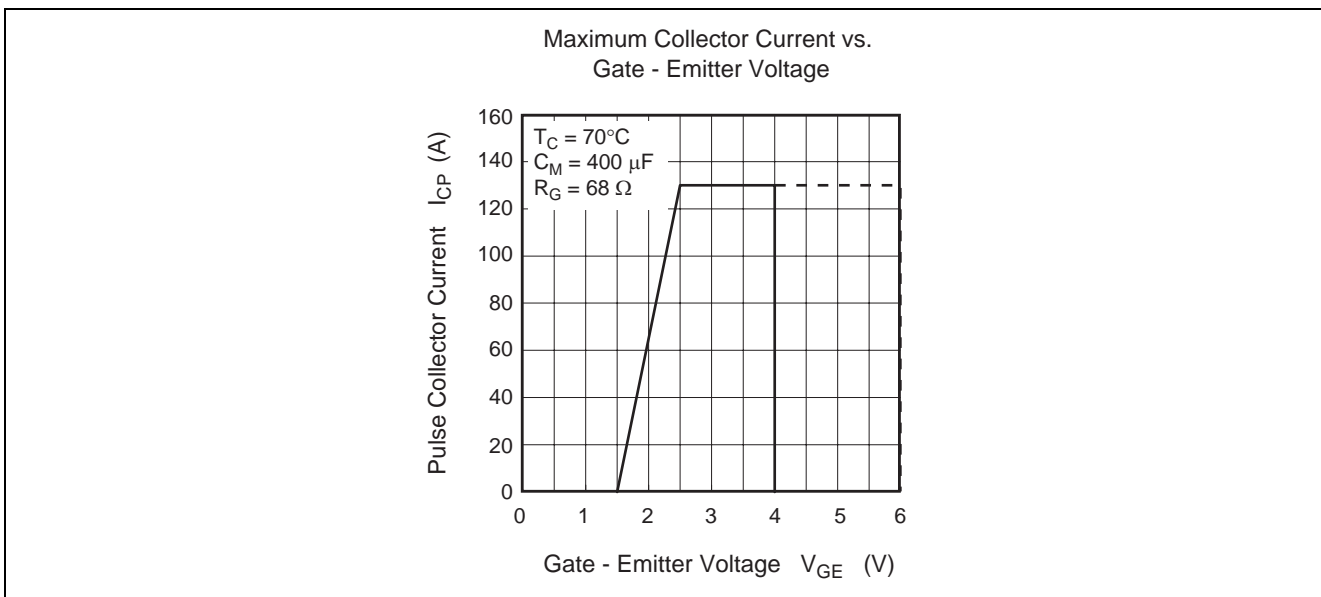
Parameter	Symbol	Ratings	Unit	Conditions
Collector-emitter voltage	$V_{CES}$	400	V	$V_{GE} = 0 \text{ V}$
Gate-emitter voltage	$V_{GES}$	$\pm 4$	V	$V_{CE} = 0 \text{ V}$
Peak gate-emitter voltage	$V_{GEM}$	$\pm 6$	V	$V_{CE} = 0 \text{ V}$ , $t_w = 10 \text{ s}$
Collector current (Pulse)	$I_{CM}$	130	A	$C_M = 400 \mu\text{F}$ (see performance curve)
Junction temperature	$T_j$	- 40 to +150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	- 40 to +150	$^\circ\text{C}$	

## Electrical Characteristics

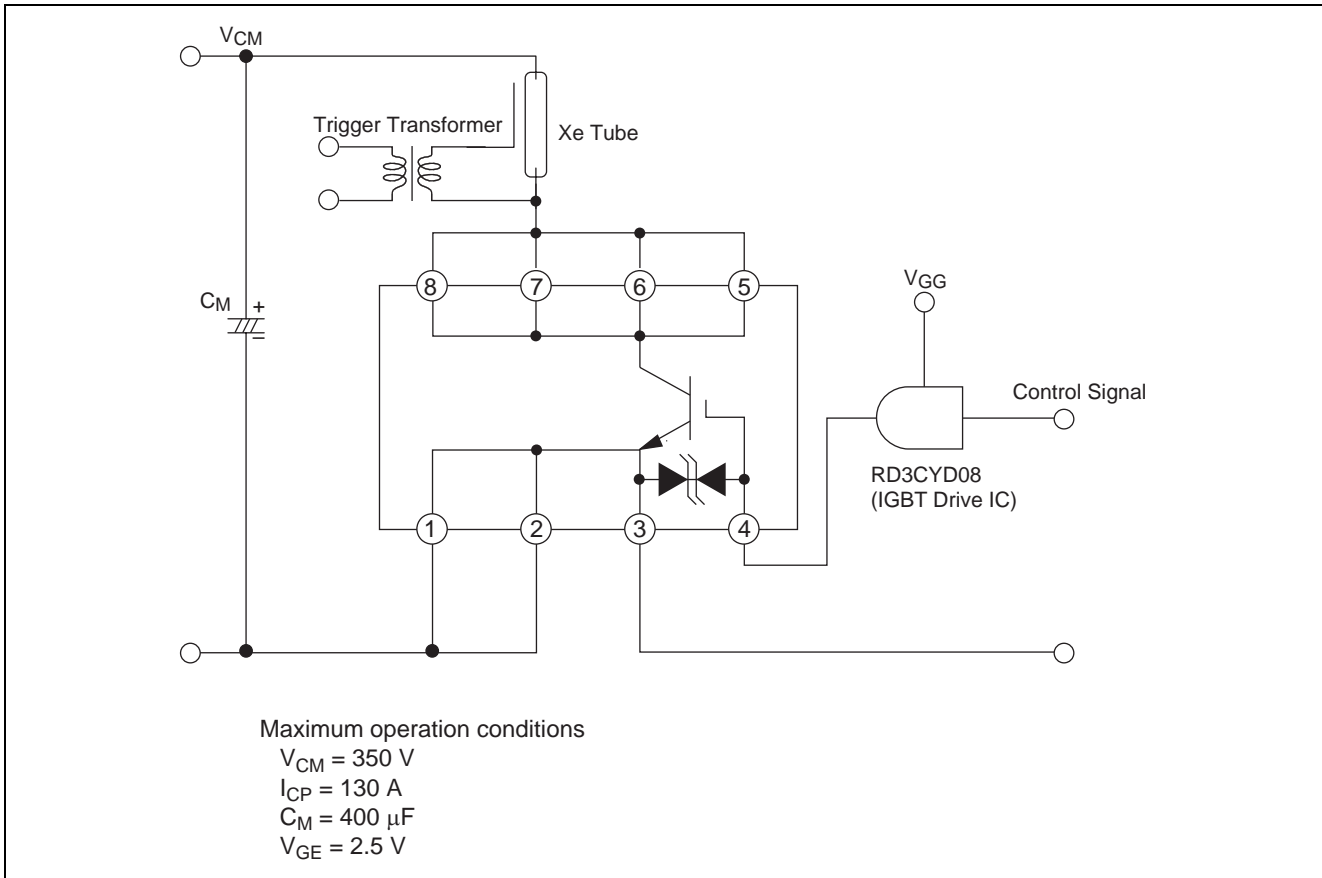
(T<sub>j</sub> = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Collector-emitter breakdown voltage	V <sub>(BR)CES</sub>	450	—	—	V	I <sub>C</sub> = 1 mA, V <sub>GE</sub> = 0 V
Collector-emitter leakage current	I <sub>CES</sub>	—	—	10	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	I <sub>C</sub> = 1 mA, V <sub>CE</sub> = 10 V
Collector-Emitter saturation voltage	V <sub>CE(sat)</sub>	—	3.5	7.0	V	I <sub>C</sub> = 130 A, V <sub>GE</sub> = 2.5 V
Input capacitance	C <sub>ies</sub>	—	5500	—	pF	V <sub>CE</sub> = 25 V, V <sub>GS</sub> = 0 V, f = 1MHz

## Performance Curves



## Application Example

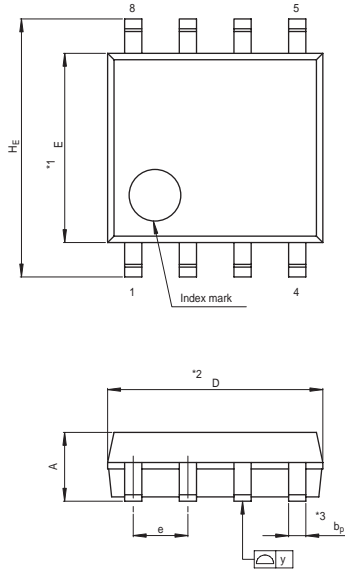


## Precautions on Usage

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  $400 \text{ V}/\mu\text{s}$ . In general, when  $R_{G(\text{off})} = 68 \Omega$ , it is satisfied.
3. The ground of the drive signal must be connected to pin 3 only. If the emitter terminal pin 1 and 2, which have a large current flow, are given to the device as the device signal emitter, the device may be damaged due to large current since the specified gate voltage is not applied to the IGBT within the device.
4. The operation life should be endured until repeated discharge of 5,000 times under the charge current ( $I_{xe} \leq 130 \text{ A}$ : full luminescence condition) of main capacitor. Repetition period under full luminescence conditions is over 3 seconds.
5. Total operation hours applied to the Gate-Emitter voltage must be within 5,000 hours when  $V_{GE}$  is driven at 4 V.

### Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
SOP-8	P-SOP8-4.4x5-1.27	PRSP0008DA-B	8P2S-B	0.07g



NOTE)  
 1. DIMENSIONS \*\*1\* AND \*\*2\* DO NOT INCLUDE MOLD FLASH.  
 2. DIMENSION \*\*3\* DOES NOT INCLUDE TRIM OFFSET.

Reference Symbol	Dimension in Millimeters		
	Min	Norm	Max
D	4.8	5.0	5.2
E	4.2	4.4	4.6
A <sub>2</sub>	—	1.5	—
A <sub>1</sub>	0	0.1	0.2
A	—	—	1.8
b <sub>p</sub>	0.35	0.4	0.5
c	0.13	0.15	0.2
θ	0°	—	10°
H <sub>E</sub>	5.7	6.0	6.3
e	1.12	1.27	1.42
y	—	—	0.1
L	0.2	0.4	0.6

### Order Code

Lead form	Standard packing	Quantity	Standard order code	Standard order code example
Surface-mounted type	Taping	3000	Type name – T +Direction (1 or 2)+3	CY20AAH-8F-T13

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

**Keep safety first in your circuit designs!**

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