CY25CAJ-8F

Nch IGBT for Strobe Flash

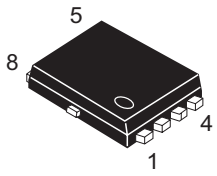
REJ03G1202-0200
Preliminary
Rev.2.00
May 24, 2005

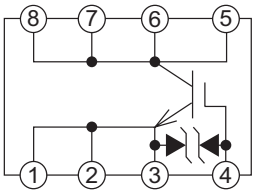
Features

- Ultra small surface mount package (VSON-8)
- V_{CES}: 400 V
- I_{CM}: 150 A
- Drive voltage: 4 V

Outline

PVSN0008JA-A
(Package Name: VSON-8<TNP-8DBV>)





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 flash for cameras

Maximum Ratings

(Tc = 25°C)

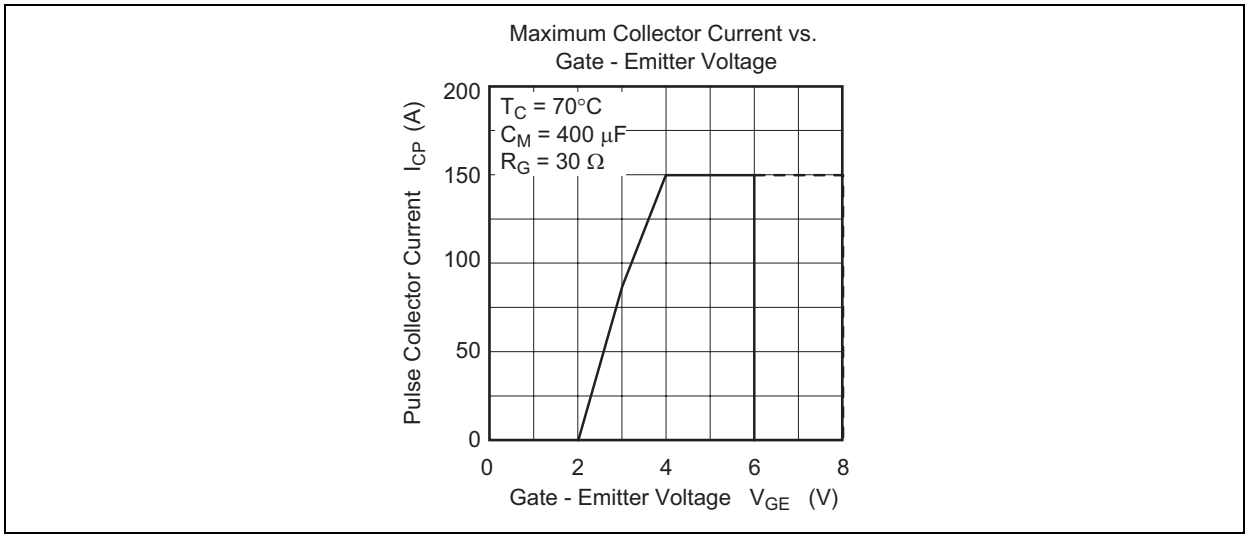
Parameter	Symbol	Ratings	Unit	Conditions
Collector-emitter voltage	V_{CES}	400	V	V_{GE} = 0 V
Gate-emitter voltage	V_{GES}	±6	V	V_{CE} = 0 V
Peak gate-emitter voltage	V_{GEM}	±8	V	V_{CE} = 0 V, tw = 10 s
Collector current (Pulse)	I_{CM}	150	A	C_M = 400 µF (see performance curve)
Junction temperature	Tj	– 40 to +150	°C	
Storage temperature	Tstg	– 40 to +150	°C	

Electrical Characteristics

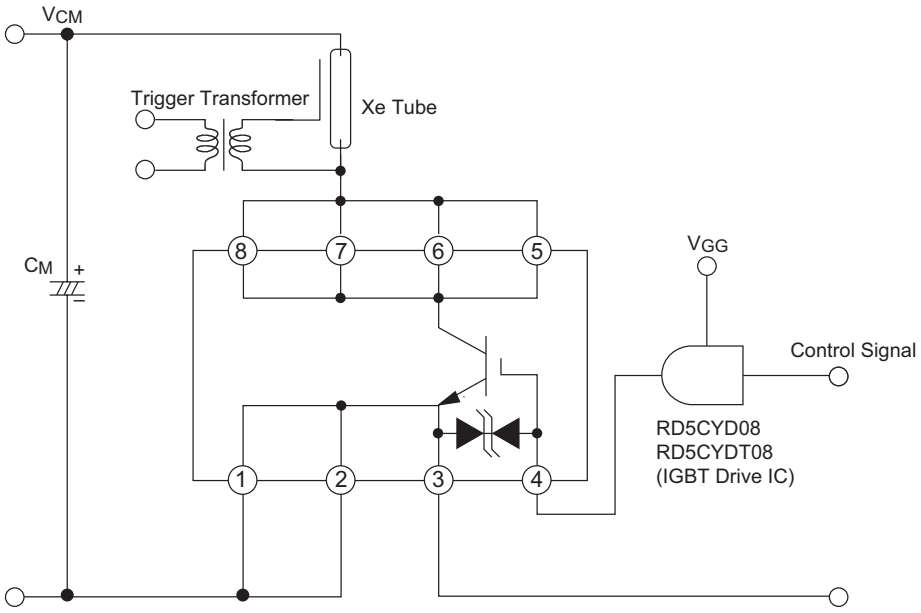
(Tj = 25°C)

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}	—	—	±10	µA	V_{GE} = ±8 V, V_{CS} = 0 V
Gate-emitter threshold voltage	$V_{GE(th)}$	0.5	0.7	1.5	V	V_{CE} = 10 V, I_C = 1 mA
Collector-Emitter saturation voltage	$V_{CE(sat)}$	—	4.0	6.0	V	I_C = 150 A, V_{GE} = 4 V
Input capacitance	Cies	—	3400	—	pF	V_{CE} = 25 V, V_{GE} = 10 V, f = 1MHz

Performance Curves



Application Example



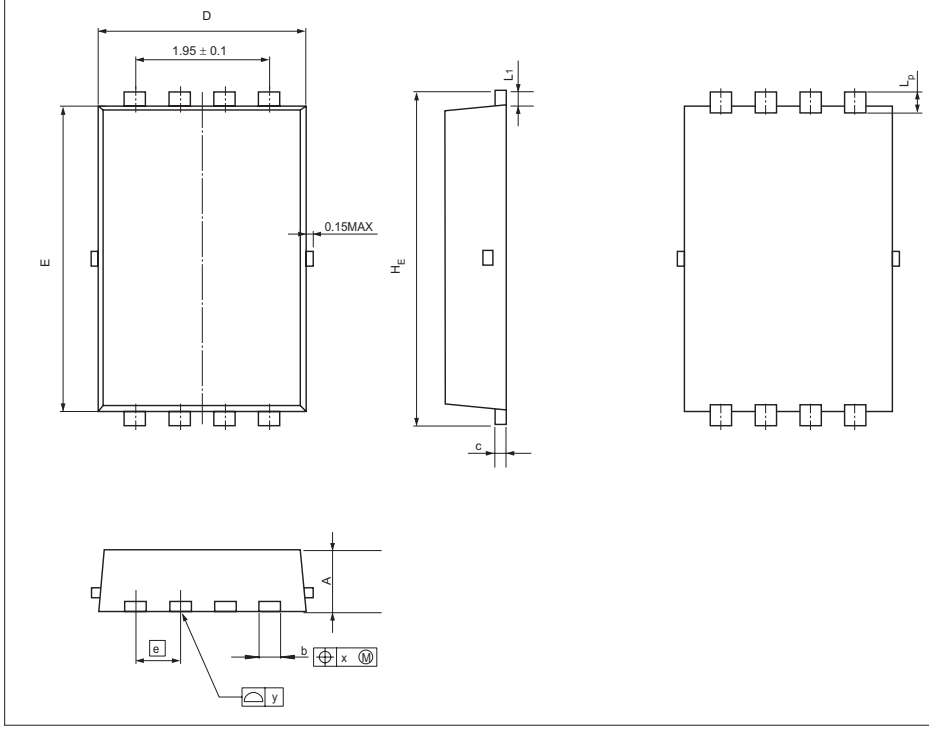
	Recommended Operation Conditions	Maximum Operation Conditions
V_{CM}	330 V	350 V
I_{CP}	130 A	150 A
C_M	300 µF	400 µF
V_{GE}	5 V	4 V

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/ µs. In general, when $R_{G\ (off)}$ = 30 Ω, it is satisfied.
3. The ground of the drive signal must be connected to pin 3 only. If the emitter terminal pins 1 and 2 in which a large currents flow are given to the device as the drive signal emitter, the device may be damaged due to large currents 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 ($I_{Xe} \leq 150$ A : full luminescence condition) of main capacitor. (C_M = 400 µF) Repetition period under full luminescence condition is over 3 seconds.
5. Total operation hours applied to the gate-emitter voltage must be within 5,000 hours when VGE is driven at 6 V.

Package Dimensions

JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
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_P	——	0.35	——
x	——	——	0.08
y	——	——	0.10
c	0.09	0.15	0.25
H_E	4.70	4.80	4.90
L_1	0.10	0.20	0.30

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	CY25CAJ-8F-T13

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

Renesas Technology Corp. Sales Strategic Planning Div. Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan

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http://www.renesas.com

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Renesas Technology America, Inc.
450 Holger Way, San Jose, CA 95134-1368, U.S.A
Tel: <1> (408) 382-7500, Fax: <1> (408) 382-7501

Renesas Technology Europe Limited
Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.
Tel: <44> (1628) 585-100, Fax: <44> (1628) 585-900

Renesas Technology Hong Kong Ltd.
7th Floor, North Tower, World Finance Centre, Harbour City, 1 Canton Road, Tsimshatsui, Kowloon, Hong Kong
Tel: <852> 2265-6688, Fax: <852> 2730-6071

Renesas Technology Taiwan Co., Ltd.
10th Floor, No.99, Fushing North Road, Taipei, Taiwan
Tel: <886> (2) 2715-2888, Fax: <886> (2) 2713-2999

Renesas Technology (Shanghai) Co., Ltd.
Unit2607 Ruijing Building, No.205 Maoming Road (S), Shanghai 200020, China
Tel: <86> (21) 6472-1001, Fax: <86> (21) 6415-2952

Renesas Technology Singapore Pte. Ltd.
1 Harbour Front Avenue, #06-10, Keppel Bay Tower, Singapore 098632
Tel: <65> 6213-0200, Fax: <65> 6278-8001

Colophon .2.0