To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

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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RJP4003ANS

Nch IGBT for Strobe Flash

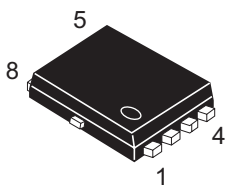
REJ03G1474-0200
Rev.2.00
Nov 10, 2008

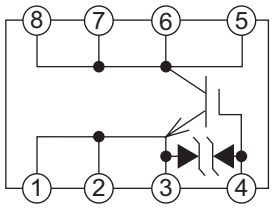
Features

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

Outline

RENESAS Package code: PVSN0008JA-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

(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	

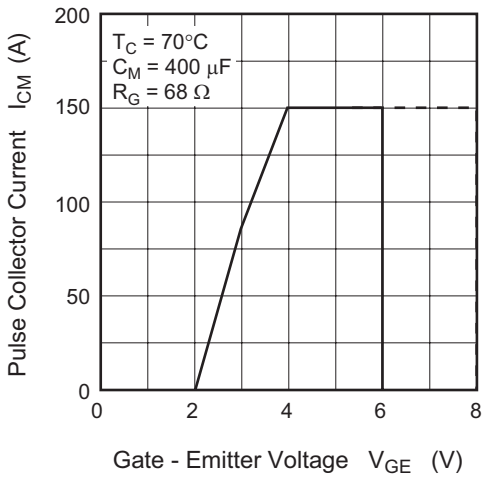
Electrical Characteristics

(Tj = 25°C)

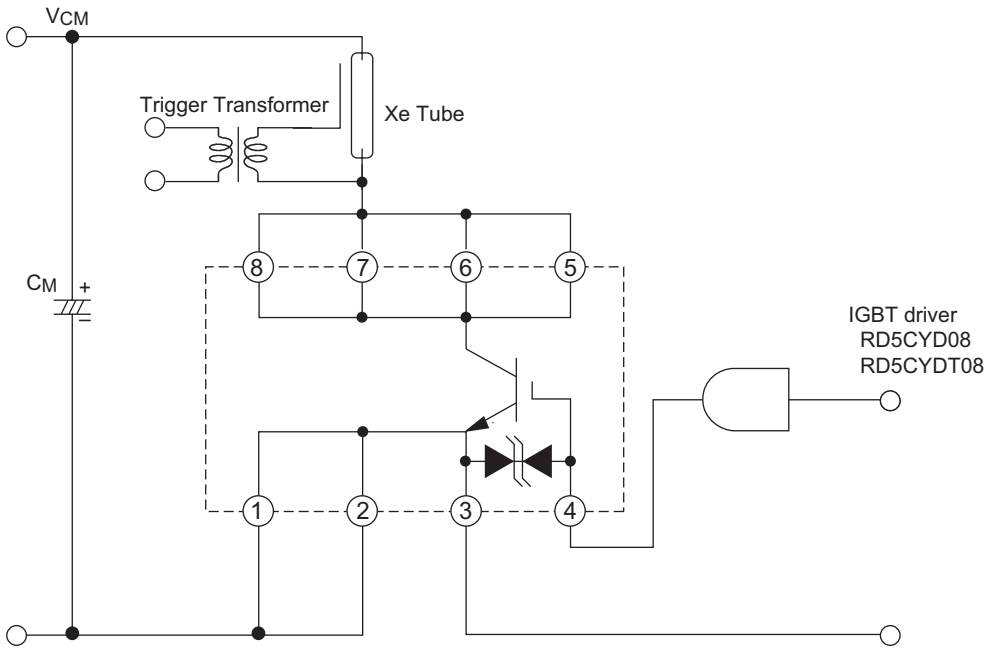
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Collector-emitter breakdown voltage	$V_{(BR)CES}$	450	—	—	V	I_C = 1 mA, V_{GE} = 0 V
Collector-emitter leakage current	I_{CES}	—	—	10	µA	V_{CE} = 400 V, V_{GE} = 0 V
Gate-emitter leakage current	I_{GES}	—	—	±10	µA	V_{GE} = ±6 V, V_{CS} = 0 V
Gate-emitter threshold voltage	$V_{GE(th)}$	0.5	0.7	1.5	V	V_{CE} = 10 V, I_C = 1 mA
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	5.0	10.0	V	I_C = 150 A, V_{GE} = 4 V
Input capacitance	Cies	—	5000	—	pF	V_{CE} = 25 V, V_{GE} = 10 V, f = 1 MHz

Performance Curves

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



Application Example



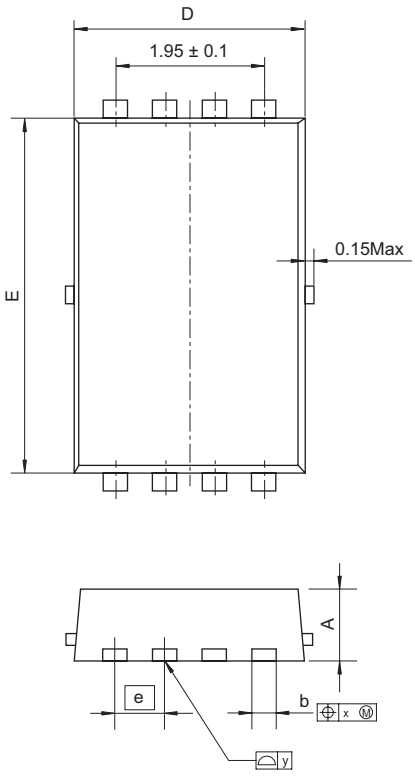
	Recommended Operation Conditions	Maximum Operation Conditions
V_{CM}	330 V	350 V
I_{CP}	130 A	150 A
C_M	330 μF	400 μF
V_{GE}	5 V	4 V

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 $R_{G\ (off)}$ = 68 Ω, it is satisfied.
3. For safety use, we recommend that the ground of the drive signal is connected to pin 3.
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 V_{GE} is driven at 6 V.

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_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 – 00 – Q1	RJP4003ANS-00-Q1

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

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