RJP4013ASP

400V, 150A, IGBT for Strobe Flash

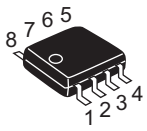
R07DS1008EJ0200
Rev.2.00
Mar 27, 2013

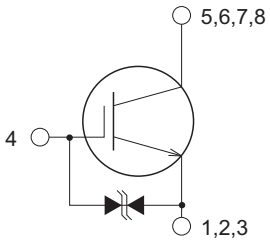
Features

- High speed switching

Outline

RENESAS Package code: PRSP0008DD-D
(Package name: SOP-8<FP-8DAV>)





1,2,3 : Emitter
4 : Gate
5,6,7,8 : Collector

Applications

Strobe flash for cameras

Maximum Ratings

(Tc = 25°C)

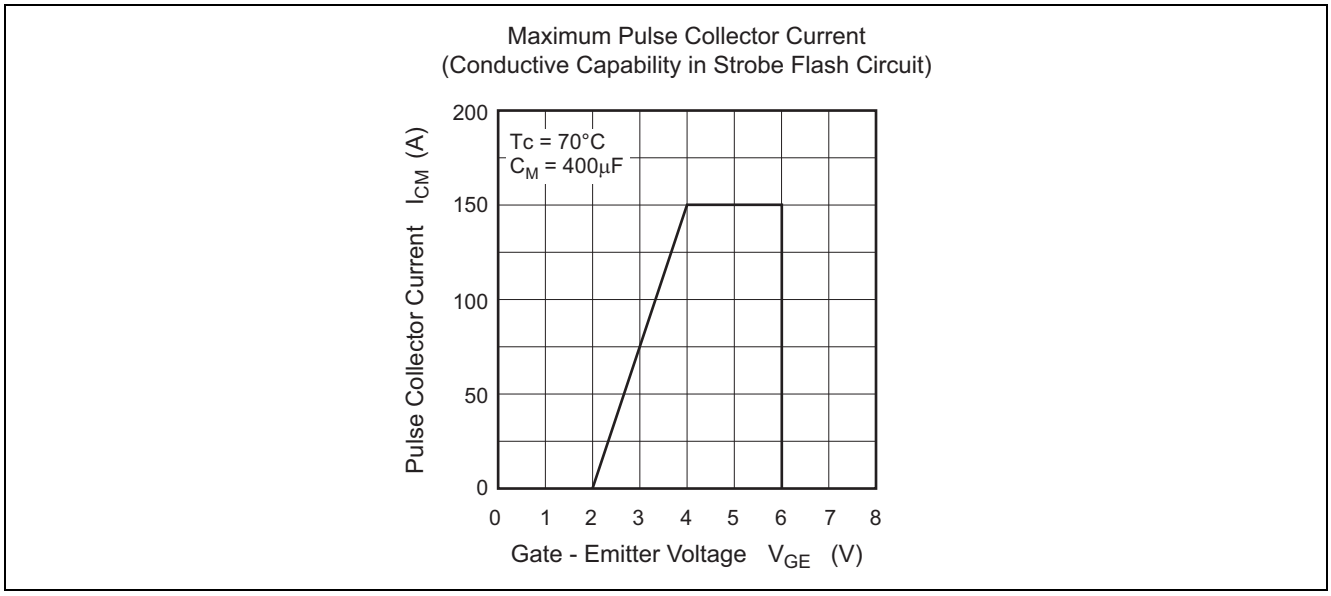
Parameter	Symbol	Ratings	Unit	Conditions
Collector-emitter voltage	V_{CES}	400	V	V_{GE} = 0 V
Gate-emitter voltage	V_{GES}	±6	V	V_{CE} = 0 V
Collector current (Pulse)	I_{CM}	150	A	C_M = 400 µF (see performance curve)
Junction temperature	Tj	– 40 to +150	°C	
Storage temperature	Tstg	– 40 to +150	°C	

Electrical Characteristics

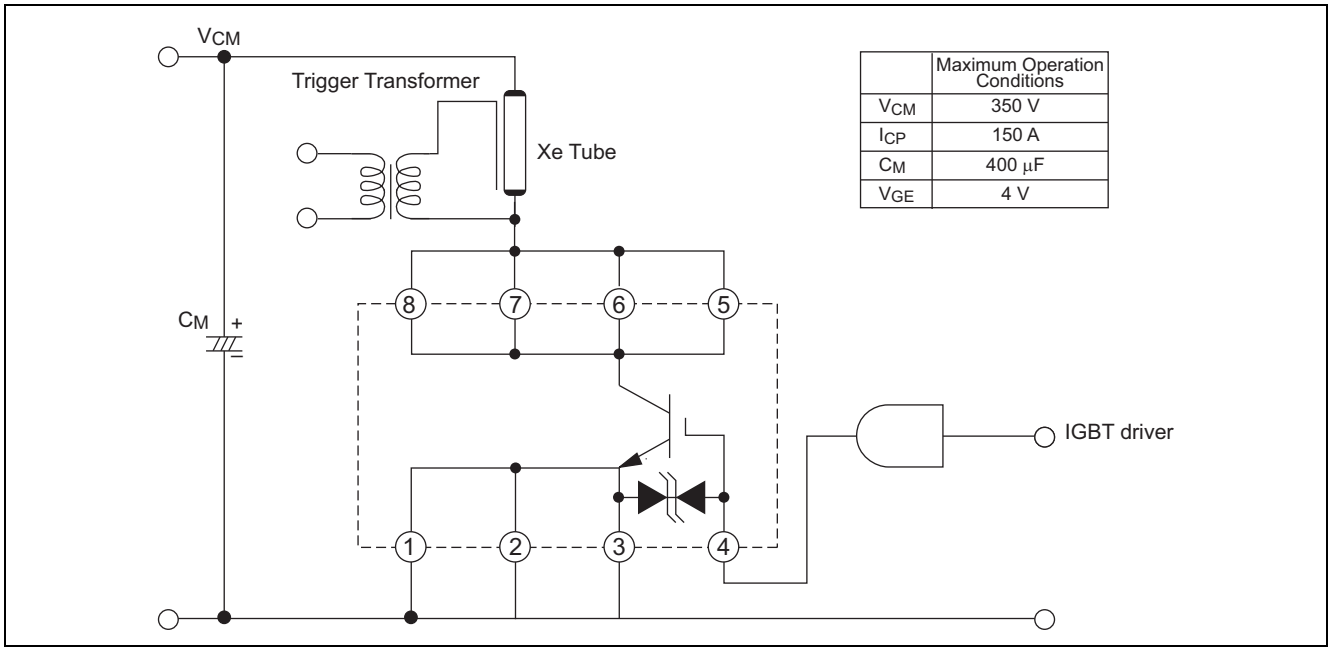
(Tj = 25°C)

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_{CE} = 0 V
Gate-emitter threshold voltage	$V_{GE(th)}$	0.5	0.8	1.5	V	V_{CE} = 10 V, I_C = 1 mA
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	4.5	8	V	V_{GE} = 4 V, I_C = 150 A
Fall time	t_f	—	0.5	—	μs	I_C = 20 A, V_{CC} = 300 V, V_{GE} = 5 V, R_G = 30 Ω Resistive loads

Performance Curves



Application Example



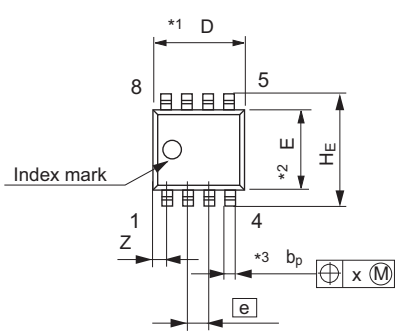
	Maximum Operation Conditions
V_{CM}	350 V
I_{CP}	150 A
C_M	400 μF
V_{GE}	4 V

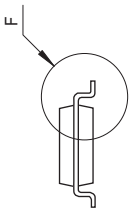
Precautions on Usage

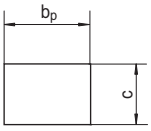
1. IGBT has MOS structure and its gate is insulated by thin silicon oxide. So please handle carefully to protect the device from electrostatic charge.
2. Gate drive voltage during on-period must be applied to satisfy the rating of maximum pulse collector current. And turn-off dv/dt must become less than 400 V/ μs.
3. 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. Repetition period under full luminescence condition is over 3 seconds.

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
SOP-8	P-SOP8-3.95 × 4.9-1.27	PRSP0008DD-D	FP-8DAV	0.085g

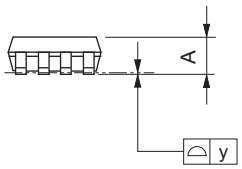


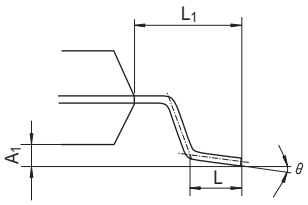




Terminal cross section
(Ni/Pd/Au plating)

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





Detail F

Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	—	4.90	5.3
E	—	3.95	—
A_2	—	—	—
A_1	0.10	0.14	0.25
A	—	—	1.75
b_p	0.34	0.40	0.46
b_1	—	—	—
c	0.15	0.20	0.25
c_1	—	—	—
θ	0°	—	8°
H_E	5.80	6.10	6.20
e	—	1.27	—
x	—	—	0.25
y	—	—	0.1
Z	—	—	0.75
L	0.40	0.60	1.27
L_1	—	1.08	—

Ordering Information

Orderable Part Number	Quantity	Shipping Container
RJP4013ASP-00-J5	2500 pcs	Taping

Note: The symbol of 2nd "-" is occasionally presented as "#".

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