

RJH60C9DPD

Silicon N Channel IGBT
Application: Inverter

REJ03G1838-0100

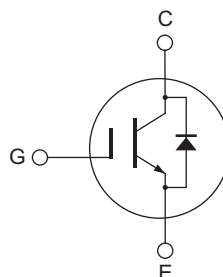
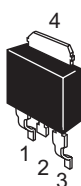
Rev.1.00

Oct 14, 2009

Features

- High breakdown-voltage
- Low on-voltage
- Built-in diode

RENESAS Package code: PRSS0004ZD-C
(Package name: DPAK (S))



1. Gate
2. Collector
3. Emitter
4. Collector

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to emitter voltage / diode reverse voltage	V_{CES} / V_R	600	V
Gate to emitter voltage	V_{GES}	±30	V
Collector current	$T_c = 25^\circ\text{C}$	I_c	10
	$T_c = 100^\circ\text{C}$	I_c	5
Collector peak current	$I_{c(\text{peak})}$ ^{Note1}	20	A
Collector to emitter diode forward current	i_{DF}	5	A
Collector to emitter diode forward peak current	$i_{DF(\text{peak})}$ ^{Note1}	20	A
Collector dissipation	P_C ^{Note2}	45	W
Junction to case thermal impedance	θ_{j-c} ^{Note2}	2.78	°C/ W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Notes: 1. $PW \leq 10 \mu\text{s}$, duty cycle $\leq 1\%$

2. Value at $T_c = 25^\circ\text{C}$

Electrical Characteristics

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(Ta = 25°C)

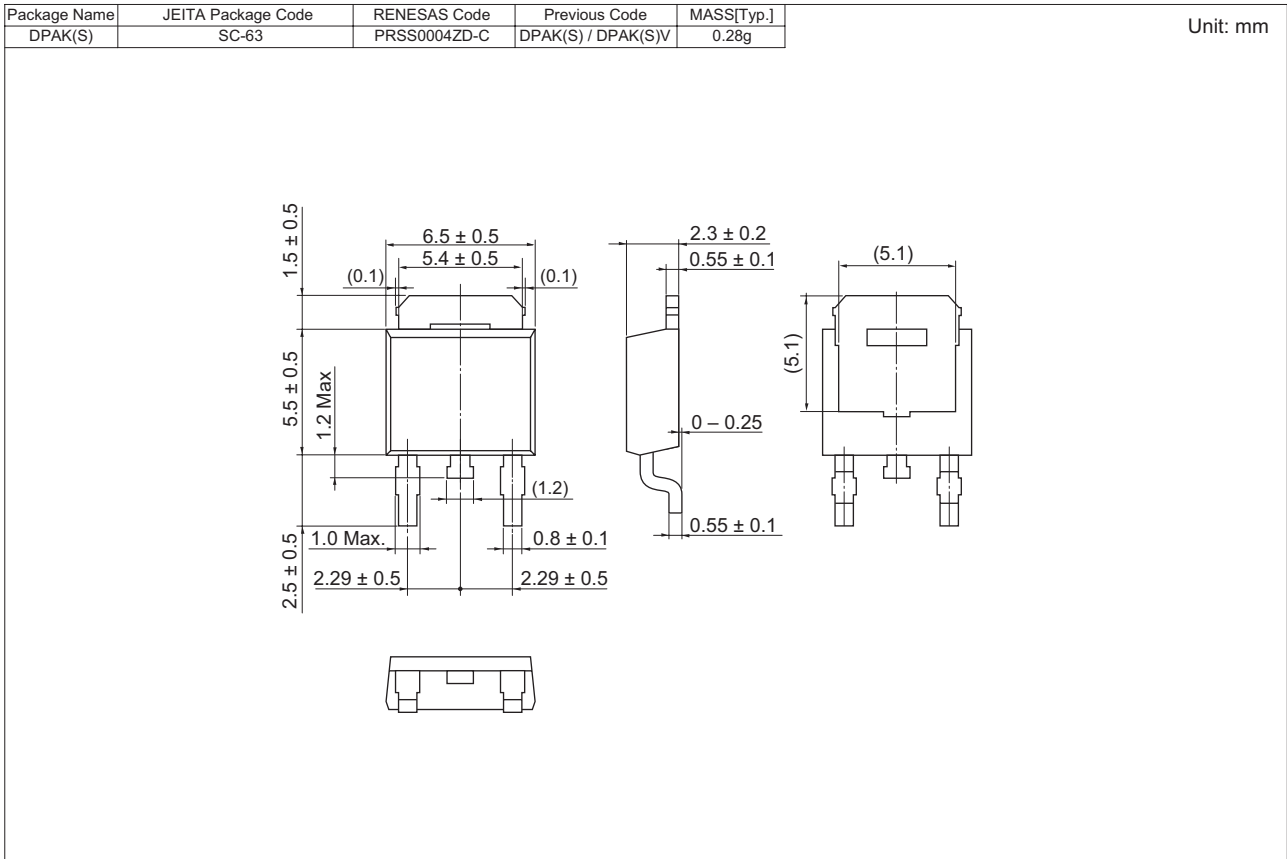
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current / diode reverse current	I_{CES} / I_R	—	—	1.0	μA	$V_{CE} = 600 \text{ V}, V_{GE} = 0 \text{ V}$
Gate to emitter leak current	I_{GES}	—	—	± 100	nA	$V_{GE} = \pm 30 \text{ V}, V_{CE} = 0 \text{ V}$
Gate to emitter cutoff voltage	$V_{GE(off)}$	4.0	6.0	8.0	V	$V_{CE} = 10 \text{ V}, I_C = 1 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	1.9	2.5	V	$T_C = 25^\circ\text{C}$ $I_C = 5 \text{ A}, V_{GE} = 15 \text{ V}^{\text{Note3}}$
	$V_{CE(sat)}$	—	2.0		V	$T_C = 100^\circ\text{C}$ $I_C = 5 \text{ A}, V_{GE} = 15 \text{ V}^{\text{Note3}}$
Input capacitance	C_{ies}	—	180	—	pF	$V_{CE} = 25 \text{ V}$
Output capacitance	C_{oes}	—	19	—	pF	$V_{GE} = 0 \text{ V}$
Reveres transfer capacitance	C_{res}	—	7	—	pF	$f = 1 \text{ MHz}$
Total gate charge	Q_g	—	8.0	—	nC	$V_{GE} = 15 \text{ V}$
Gate to emitter charge	Q_{ge}	—	5.0	—	nC	$V_{CE} = 300 \text{ V}$
Gate to collector charge	Q_{gc}	—	2.5	—	nC	$I_C = 5 \text{ A}$
Switching time	$t_{d(on)}$	—	25	—	ns	$I_C = 5 \text{ A}$
	t_r	—	50	—	ns	$R_L = 37.5 \Omega$
	$t_{d(off)}$	—	40	—	ns	$V_{GE} = 15 \text{ V}$
	t_f	—	250	—	ns	$R_g = 5 \Omega$
FRD Forward voltage	V_F	—	1.8	2.3	V	$I_F = 5 \text{ A}^{\text{Note3}}$
FRD reverse recovery time	t_{rr}	—	100	—	ns	$I_F = 5 \text{ A}, di_F/dt = 100 \text{ A}/\mu\text{s}$

Notes: 3. Pulse test.

4. Under development. —The specifications potentially be changed without notice.

Package Dimension

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Ordering Information

Part No.	Quantity	Shipping Container
RJH60C9DPD-00-J2	3000 pcs	Taping

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

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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 (Shanghai) Co., Ltd.
Unit 204, 205, AZIACenter, No.1233 Lujiazui Ring Rd, Pudong District, Shanghai, China 200120
Tel: <86> (21) 5877-1818, Fax: <86> (21) 6887-7858/7898

Renesas Technology Hong Kong Ltd.
7th Floor, North Tower, World Finance Centre, Harbour City, Canton Road, Tsimshatsui, Kowloon, Hong Kong
Tel: <852> 2265-6688, Fax: <852> 2377-3473

Renesas Technology Taiwan Co., Ltd.
10th Floor, No.99, Fushing North Road, Taipei, Taiwan
Tel: <886> (2) 2715-2888, Fax: <886> (2) 3518-3399

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

Renesas Technology Korea Co., Ltd.
Kukje Center Bldg. 18th Fl., 191, 2-ka, Hangang-ro, Yongsan-ku, Seoul 140-702, Korea
Tel: <82> (2) 796-3115, Fax: <82> (2) 796-2145

Renesas Technology Malaysia Sdn. Bhd
Unit 906, Block B, Menara Amcorp, Amcorp Trade Centre, No.18, Jln Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
Tel: <603> 7955-9390, Fax: <603> 7955-9510

