

# RJH60D2DPE

Silicon N Channel IGBT  
Application: Inverter

REJ03G1842-0100

Rev.1.00

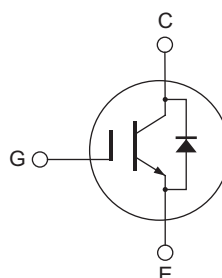
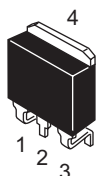
Oct 14, 2009

## Features

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

## Outline

RENESAS Package code: PRSS0004AE-B  
(Package name: LDKPAK (S)-(1))



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	$T_C = 25^\circ\text{C}$	$I_C$	20	A
	$T_C = 100^\circ\text{C}$	$I_C$	10	A
Collector peak current	$i_{c(\text{peak})}$ <sup>Note1</sup>	40	A	
Collector to emitter diode forward current	$i_{DF}$	10	A	
Collector to emitter diode forward peak current	$i_{D(\text{peak})}$ <sup>Note1</sup>	40	A	
Collector dissipation	$P_C$ <sup>Note2</sup>	90	W	
Junction to case thermal impedance	$\theta_{j-c}$ <sup>Note2</sup>	1.39	°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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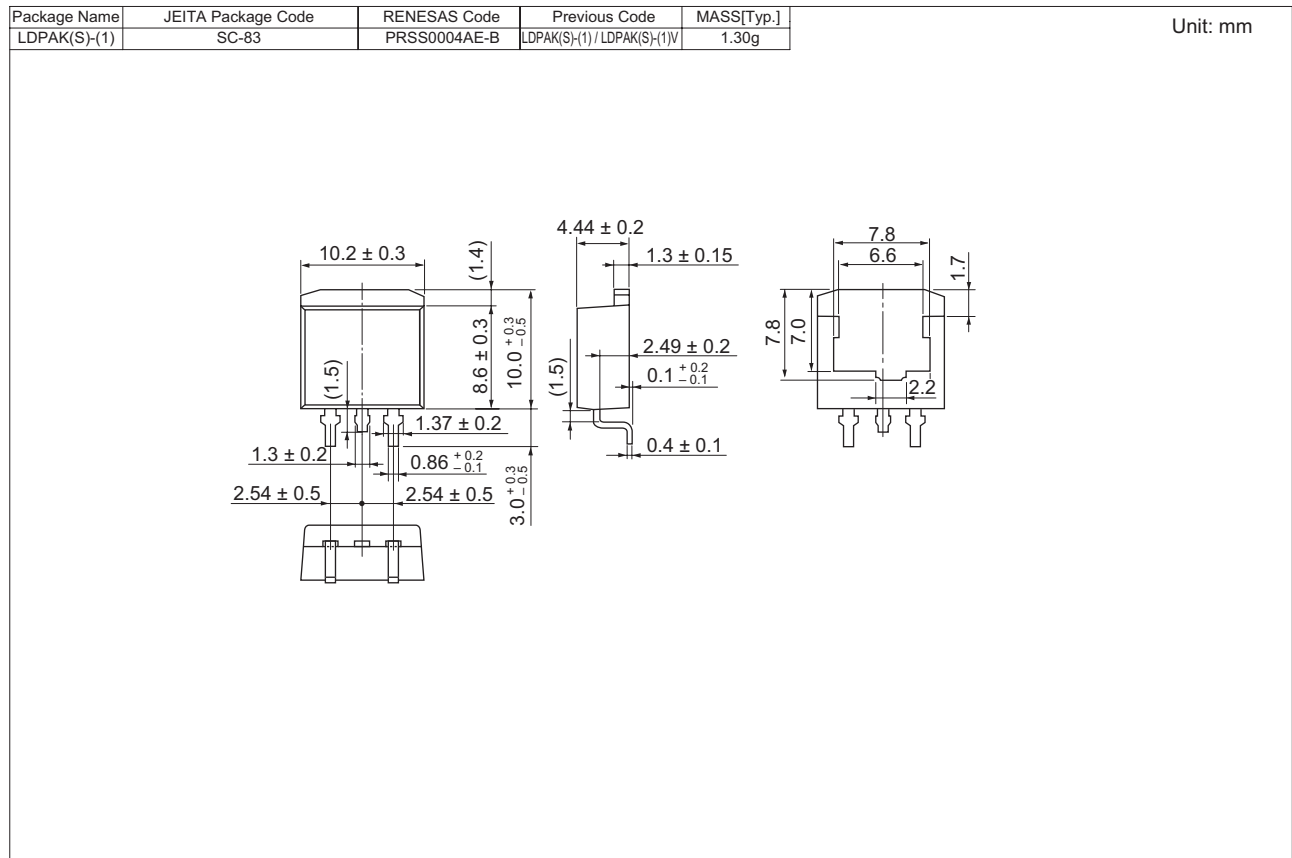
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current / diode reverse current	$I_{CES} / I_R$	—	—	100	$\mu\text{A}$	$V_{CE} = 600 \text{ V}, V_{GE} = 0$
Gate to emitter leak current	$I_{GES}$	—	—	$\pm 1$	$\mu\text{A}$	$V_{GE} = \pm 30 \text{ V}, V_{CE} = 0$
Gate to emitter cutoff voltage	$V_{GE(off)}$	4.0	—	6.0	V	$V_{CE} = 10 \text{ V}, I_C = 1 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	1.6	2.2	V	$I_C = 10 \text{ A}, V_{GE} = 15 \text{ V}$ <sup>Note3</sup>
	$V_{CE(sat)}$	—	1.8	—	V	$I_C = 20 \text{ A}, V_{GE} = 15 \text{ V}$ <sup>Note3</sup>
Input capacitance	$C_{ies}$	—	430	—	pF	$V_{CE} = 25 \text{ V}$
Output capacitance	$C_{oes}$	—	35	—	pF	$V_{GE} = 0$
Reveres transfer capacitance	$C_{res}$	—	15	—	pF	$f = 1 \text{ MHz}$
Total gate charge	$Q_g$	—	19.1	—	nC	$V_{GE} = 15 \text{ V}$
Gate to emitter charge	$Q_{ge}$	—	3.0	—	nC	$V_{CE} = 300 \text{ V}$
Gate to collector charge	$Q_{gc}$	—	9.0	—	nC	$I_C = 10 \text{ A}$
Switching time	$t_{d(on)}$	—	30	—	ns	$I_C = 10 \text{ A}$
	$t_r$	—	30	—	ns	$R_L = 30.0 \Omega$
	$t_{d(off)}$	—	50	—	ns	$V_{GE} = 15 \text{ V}$
	$t_f$	—	90	—	ns	$R_g = 5 \Omega$
FRD forward voltage	$V_F$	—	1.8	2.3	V	$I_F = 10 \text{ A}$ <sup>Note3</sup>
FRD reverse recovery time	$t_{rr}$	—	100	—	ns	$I_F = 10 \text{ A}$ $di_F/dt = 100 \text{ A}/\mu\text{s}$

Notes: 3. Pulse test.

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

Package Dimension



Ordering Information

Part No.	Quantity	Shipping Container
RJH60D2DPE-00-J3	1000 pcs	Taping

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