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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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RJH60D1DPP-M0

Silicon N Channel IGBT
Application: Inverter

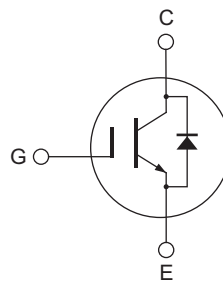
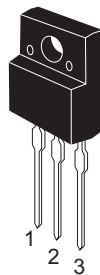
REJ03G1839-0100
Rev.1.00
Oct 14, 2009

Features

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

Outline

RENESAS Package code: PRSS0003AF-A
(Package name: TO-220FL)



1. Gate
2. Collector
3. Emitter

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	Tc = 25°C	I_C	16	A
	Tc = 100°C	I_C	8	A
Collector peak current		$i_{C(peak)}$ ^{Note1}	32	A
Collector to emitter diode forward current		i_{DF}	8	A
Collector to emitter diode forward peak current		$i_{D(peak)}$ ^{Note1}	32	A
Collector dissipation		P_C ^{Note2}	20	W
Junction to case thermal impedance		θ_{j-c} ^{Note2}	6.25	°C/ W
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	-55 to +150	°C

Notes: 1. $PW \leq 10 \mu s$, duty cycle $\leq 1\%$
2. Value at Tc = 25°C

Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current / Diode reverse current	I_{CES} / I_R	—	—	100	μA	$V_{CE} = 600 V, V_{GE} = 0$
Gate to emitter leak current	I_{GES}	—	—	± 1	μA	$V_{GE} = \pm 30 V, V_{CE} = 0$
Gate to emitter cutoff voltage	$V_{GE(off)}$	4.0	—	6.0	V	$V_{CE} = 10 V, I_C = 1 mA$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	1.8	2.2	V	$I_C = 8 A, V_{GE} = 15 V$ ^{Note3}
	$V_{CE(sat)}$	—	2.3	—	V	$I_C = 16 A, V_{GE} = 15 V$ ^{Note3}
Input capacitance	C_{ies}	—	290	—	pF	$V_{CE} = 25 V$
Output capacitance	C_{oes}	—	25	—	pF	$V_{GE} = 0$
Reveres transfer capacitance	C_{res}	—	7.5	—	pF	$f = 1 MHz$
Total gate charge	Q_g	—	12.0	—	nC	$V_{GE} = 15 V$
Gate to emitter charge	Q_{ge}	—	2.0	—	nC	$V_{CE} = 300 V$
Gate to collector charge	Q_{gc}	—	6.0	—	nC	$I_C = 8 A$
Switching time	$t_{d(on)}$	—	25	—	ns	$I_C = 8 A$
	t_r	—	35	—	ns	$R_L = 37.5 \Omega$
	$t_{d(off)}$	—	40	—	ns	$V_{GE} = 15 V$
	t_f	—	100	—	ns	$R_g = 5 \Omega$
FRD Forward voltage	V_F	—	1.8	2.3	V	$I_F = 8 A$ ^{Note3}
FRD reverse recovery time	t_{rr}	—	100	—	ns	$I_F = 8 A$ $di_F/dt = 100 A/\mu s$

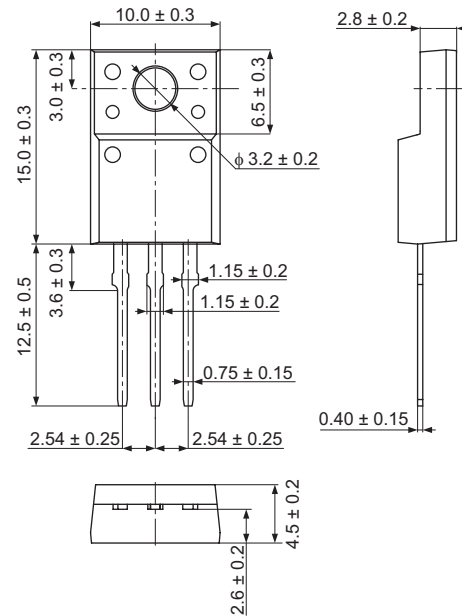
Notes: 3. Pulse test.

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

Package Dimension

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-220FL	—	PRSS0003AF-A	TO-220FL	1.5g

Unit: mm



Ordering Information

Part No.	Quantity	Shipping Container
RJH60D1DPP-M0-T2	1050 pcs	Box (Tube)

Notes:

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