

RJH30H1DPP-M0

Silicon N Channel IGBT
High speed power switching

R07DS0463EJ0200

Rev.2.00

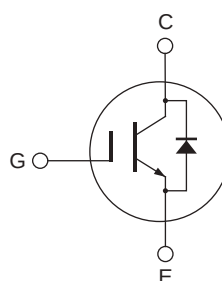
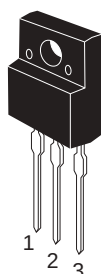
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Features

- Trench gate and thin wafer technology (G6H-II series)
- High speed switching: $t_r = 80$ ns typ., $t_f = 150$ ns typ.
- Low collector to emitter saturation voltage: $V_{CE(sat)} = 1.5$ V typ.
- Low leak current: $I_{CES} = 1$ μ A max.
- Built-in Fast Recovery Diode: $V_F = 1.4$ V typ., $t_{rr} = 23$ ns typ.
- Isolated package: TO-220FL

Outline

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



1. Gate
2. Collector
3. Emitter

Absolute Maximum Ratings

($T_c = 25^\circ\text{C}$)

Item	Symbol	Ratings	Unit
Collector to emitter voltage	V_{CES}	360	V
Gate to emitter voltage	V_{GES}	± 30	V
Collector current	I_C	30	A
Collector peak current	$i_{C(peak)}$ ^{Note1}	200	A
Collector to emitter diode Forward peak current	$i_{DF(peak)}$ ^{Note1}	100	A
Collector dissipation	P_C ^{Note2}	20	W
Junction to case thermal impedance	θ_{j-c}	6.25	$^\circ\text{C}/\text{W}$
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Notes: 1. $PW \leq 10$ μ s, duty cycle $\leq 1\%$

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

Electrical Characteristics

(T_j = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current	I _{CES}	—	—	1	μA	V _{CE} = 360 V, V _{GE} = 0
Gate to emitter leak current	I _{GES}	—	—	±100	nA	V _{GE} = ± 30 V, V _{CE} = 0
Gate to emitter cutoff voltage	V _{GE(off)}	2.5	—	5	V	V _{CE} = 10 V, I _C = 1 mA
Collector to emitter saturation voltage	V _{CE(sat)}	—	1.5	2	V	I _C = 30A, V _{GE} = 15 V ^{Note3}
Input capacitance	C _{ies}	—	740	—	pF	V _{CE} = 25 V V _{GE} = 0 f = 1 MHz
Output capacitance	C _{oes}	—	60	—	pF	
Reveres transfer capacitance	C _{res}	—	17	—	pF	
Total gate charge	Q _g	—	23	—	nC	V _{GE} = 15 V V _{CE} = 150 V I _C = 30 A
Gate to emitter charge	Q _{ge}	—	4	—	nC	
Gate to collector charge	Q _{gc}	—	8	—	nC	
Switching time	t _{d(on)}	—	0.02	—	μs	I _C = 30 A R _L = 5 Ω V _{GE} = 15 V R _G = 5 Ω
	t _r	—	0.08	—	μs	
	t _{d(off)}	—	0.04	—	μs	
	t _f	—	0.15	—	μs	
FRD Forward voltage	V _F	—	1.4	1.7	V	I _F = 20 A ^{Note3}
FRD Reverse recovery time	t _{rr}	—	23	—	ns	I _F = 20 A di _F /dt = 100 A/μs

Notes: 3. Pulse test