

RJP30E2DPK-M0

Silicon N Channel IGBT
High Speed Power Switching

R07DS0348EJ0100

Rev.1.00

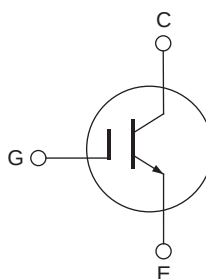
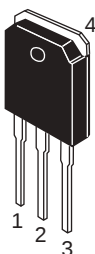
Apr 12, 2011

Features

- Trench gate technology (G5H series)
- Low collector to emitter saturation voltage $V_{CE(sat)} = 1.7 \text{ V typ}$
- High speed switching $t_f = 150 \text{ ns typ}$
- Low leak current $I_{CES} = 1 \mu\text{A max}$

Outline

RENESAS Package code: PRSS0004ZH-A
(Package name: TO-3PSG)



1. Gate
2. Collector
3. Emitter
4. Collector (Flange)

Absolute Maximum Ratings

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

Item	Symbol	Ratings	Unit
Collector to emitter voltage	V_{CES}	360	V
Gate to emitter voltage	V_{GES}	± 30	V
Collector current	I_C	35	A
Collector peak current	$i_{c(peak)}$ ^{Note1}	200	A
Collector dissipation	P_C ^{Note2}	50	W
Junction to case thermal impedance	θ_{j-c}	2.5	$^\circ\text{C/W}$
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Notes: 1. $PW \leq 10 \mu\text{s}$, duty cycle $\leq 1\%$
2. $T_c = 25^\circ\text{C}$

Electrical Characteristics

(Ta = 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	$V_{GE} = \pm 30 V, V_{CE} = 0$
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	$V_{CE(sat)}$	—	1.7	2.2	V	$I_C = 35 A, V_{GE} = 15 V$ ^{Note3}
Input capacitance	C_{ies}	—	1160	—	pF	$V_{CE} = 25 V$ $V_{GE} = 0$ $f = 1 MHz$
Output capacitance	C_{oes}	—	60	—	pF	
Reveres transfer capacitance	C_{res}	—	26	—	pF	
Total gate charge	Q_g	—	34	—	nC	$V_{GE} = 15 V$ $V_{CE} = 150 V$ $I_C = 35 A$
Gate to emitter charge	Q_{ge}	—	6	—	nC	
Gate to collector charge	Q_{gc}	—	10	—	nC	
Switching time	$t_{d(on)}$	—	0.03	—	μs	$I_C = 35 A$ $R_L = 4.5 \Omega$ $V_{GE} = 15 V$ $R_G = 5 \Omega$
	t_r	—	0.1	—	μs	
	$t_{d(off)}$	—	0.08	—	μs	
	t_f	—	0.15	—	μs	

Notes: 3. Pulse test.