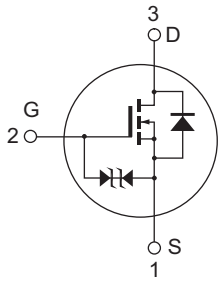
RQK0302GGDQA

Features

- Low on-resistance
  $R_{DS(on)}$ = 92 mΩ typ (V_{GS} = 10 V, I_D = 1.3 A)
- Low drive current
- High speed switching
- 4.5 V gate drive

Outline

(Package name: MPAK)



1. Source
2. Gate
3. Drain

Note: Marking is “GG”.

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	30	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	2.7	A
Drain peak current	$I_{D(Pulse)}$ Note1	5	A
Body - drain diode reverse drain current	I_{DR}	2.7	A
Channel dissipation	Pch Note2	0.8	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1%
2. When using the glass epoxy board (FR-4: 40 × 40 × 1 mm)

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Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	I_D = 10 mA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	I_G = ±100 μA, V_{DS} = 0
Gate to source leak current	I_{GSS}	—	—	±10	μA	V_{GS} = ±16 V, V_{DS} = 0
Drain to source leak current	I_{DSS}	—	—	1	μA	V_{DS} = 30 V, V_{GS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.0	V	V_{DS} = 10 V, I_D = 1 mA
Drain to source on state resistance	$R_{DS(on)}$	—	92	115	mΩ	I_D = 1.3 A, V_{GS} = 10 V[Note3]
	$R_{DS(on)}$	—	122	171	mΩ	I_D = 1.3 A, V_{GS} = 4.5 V[Note3]
Forward transfer admittance	$\|y_{fs}\|$	2.1	3.5	—	S	I_D = 1.3 A, V_{DS} = 10 V[Note3]
Input capacitance	Ciss	—	175	—	pF	V_{DS} = 10 V, V_{GS} = 0, f = 1 MHz
Output capacitance	Coss	—	34	—	pF	
Reverse transfer capacitance	Crss	—	15	—	pF	
Turn - on delay time	$t_{d(on)}$	—	9.5	—	ns	I_D = 1 A, V_{GS} = 10 V, R_L = 10 Ω, Rg = 4.7 Ω
Rise time	t_r	—	37	—	ns	
Turn - off delay time	$t_{d(off)}$	—	38	—	ns	
Fall time	t_f	—	8.2	—	ns	
Total gate charge	Qg	—	3.3	—	nC	V_{DD} = 10 V, V_{GS} = 10 V, I_D = 2.7A
Gate to source charge	Qgs	—	0.6	—	nC	
Gate to drain charge	Qgd	—	0.5	—	nC	
Body - drain diode forward voltage	V_{DF}	—	0.9	—	V	I_F = 1.5 A, V_{GS} = 0 [Note3]

Notes: 3. Pulse test