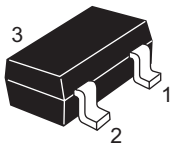
RQK0606KGDQA

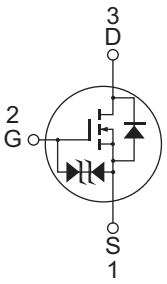
Features

- Low on-resistance
  $R_{DS(on)}$ = 173 mΩ typ.(at V_{GS} = 4.5 V, I_D = 0.8 A)
- Low drive current
- High speed switching
- V_{DSS} ≥ 60 V and capable of 2.5 V gate drive

Outline

(Package name: MPAK)





1. Source
2. Gate
3. Drain

Notes: Marking is “KG“.

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	60	V
Gate to source voltage	V_{GSS}	±12	V
Drain current	I_D	1.5	A
Drain peak current	$I_{D(pulse)}$ Note1	6	A
Body - drain diode reverse drain current	I_{DR}	1.5	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	$V_{(BR)DSS}$	60	—	—	V	I_D = 10 mA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	+12	—	—	V	I_G = +100 μA, V_{DS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	–12	—	—	V	I_G = –100 μA, V_{DS} = 0
Gate to source leak current	I_{GSS}	—	—	+10	μA	V_{GS} = +10 V, V_{DS} = 0
Gate to source leak current	I_{GSS}	—	—	–10	μA	V_{GS} = –10 V, V_{DS} = 0
Drain to source leak current	I_{DSS}	—	—	1	μA	V_{DS} = 60 V, V_{GS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	0.4	—	1.4	V	V_{DS} = 10 V, I_D = 1 mA
Drain to source on state resistance	$R_{DS(on)}$	—	173	225	mΩ	I_D = 0.8 A, V_{GS} = 4.5 V [Note3]
Drain to source on state resistance	$R_{DS(on)}$	—	207	290	mΩ	I_D = 0.8 A, V_{GS} = 2.5 V [Note3]
Forward transfer admittance	$\|y_{fs}\|$	2.3	4	—	S	I_D = 0.8 A, V_{DS} = 10 V [Note3]
Input capacitance	Ciss	—	200	—	pF	V_{DS} = 10 V V_{GS} = 0 f = 1 MHz
Output capacitance	Coss	—	25	—	pF	
Reverse transfer capacitance	Crss	—	14	—	pF	
Turn - on delay time	$t_{d(on)}$	—	11	—	ns	I_D = 0.8 A V_{GS} = 10 V R_L = 12.5 Ω Rg = 4.7 Ω
Rise time	t_r	—	27	—	ns	
Turn - off delay time	$t_{d(off)}$	—	31	—	ns	
Fall time	t_f	—	4	—	ns	
Total gate charge	Qg	—	2.2	—	nC	V_{DD} = 10 V V_{GS} = 4.5 V I_D = 1.5 A
Gate to Source charge	Qgs	—	0.4	—	nC	
Gate to drain charge	Qgd	—	0.7	—	nC	
Body - drain diode forward voltage	V_{DF}	—	0.8	—	V	I_F = 1.5 A, V_{GS} = 0 [Note3]

Notes: 3. Pulse test