

2SK2247

Silicon N Channel MOS FET

Application

High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- 4 V gate drive device - - - can be driven from 5 V source.
- Suitable for DC – DC converter, motor drive, power switch, solenoid drive

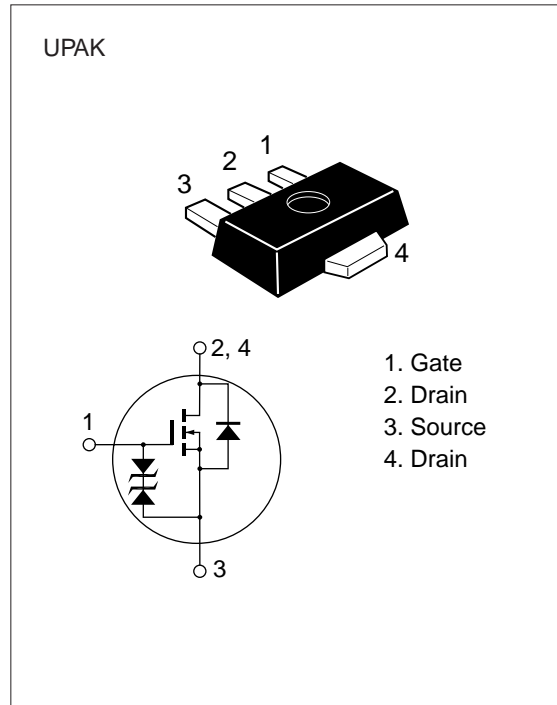


Table 1 Absolute Maximum Ratings (Ta = 25°C)

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	A
Drain peak current	I _{D(pulse)} *	4	A
Body-drain diode reverse drain current	I _{DR}	2	A
Channel dissipation	P _{ch} **	1	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

* PW ≤ 100 μs, duty cycle ≤ 10 %

** When using the alumina ceramic board (12.5 × 20 × 0.7mm)

*** Marking is "QY"

Table 2 Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	$I_D = 1 \text{ mA}$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 10 \mu\text{A}$, $V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 5	μA	$V_{GS} = \pm 16 \text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	1	μA	$V_{DS} = 24 \text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	1.5	2.0	V	$I_D = 100 \mu\text{A}$, $V_{DS} = 10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.3	0.45	Ω	$I_D = 1 \text{ A}$ $V_{GS} = 4 \text{ V}^*$
		—	0.22	0.35	Ω	$I_D = 1 \text{ A}$ $V_{GS} = 10 \text{ V}^*$
Forward transfer admittance	$ y_{fs} $	1.5	1.9	—	S	$I_D = 1 \text{ A}$ $V_{DS} = 10 \text{ V}^*$
Input capacitance	C_{iss}	—	177	—	pF	$V_{DS} = 10 \text{ V}$
Output capacitance	C_{oss}	—	116	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	43	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	8	—	ns	$I_D = 1 \text{ A}$
Rise time	t_r	—	14	—	ns	$V_{GS} = 10 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	37	—	ns	$R_L = 30 \Omega$
Fall time	t_f	—	33	—	ns	$PW = 2 \mu\text{s}$

* Pulse Test

