

2SK1697

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

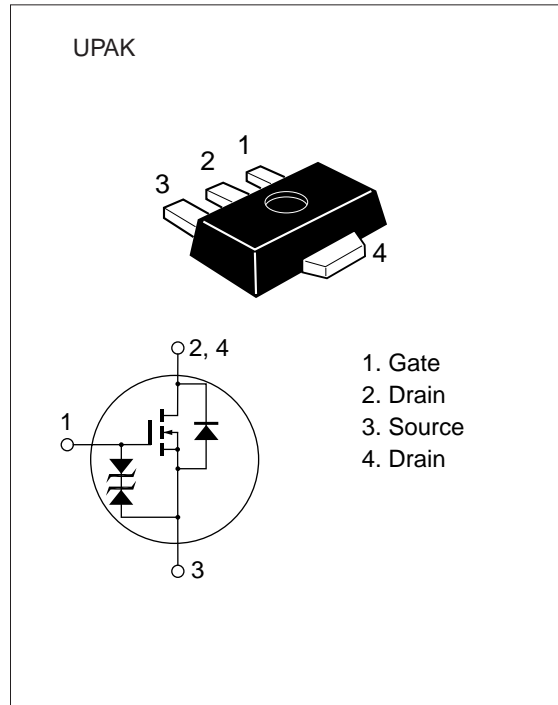


Table 1 Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	60	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	0.5	A
Drain peak current	I _{D(pulse)} *	1.5	A
Body-drain diode reverse drain current	I _{DR}	0.5	A
Channel dissipation	P _{ch} **	1	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

* PW ≤ 10 μs, duty cycle ≤ 1 %

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

*** Marking is "EY".

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

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	60	—	—	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100 \mu\text{A}, V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 16 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	50	μA	$V_{DS} = 50 \text{ V}, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.0	V	$I_D = 1 \text{ mA}, V_{DS} = 10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	1.3	1.7	Ω	$I_D = 0.3 \text{ A}$ $V_{GS} = 10 \text{ V}^*$
		—	1.8	2.5	Ω	$I_D = 0.3 \text{ A}$ $V_{GS} = 4 \text{ V}^*$
Forward transfer admittance	$ y_{fs} $	0.25	0.38	—	S	$I_D = 0.3 \text{ A}$ $V_{DS} = 10 \text{ V}^*$
Input capacitance	C_{iss}	—	30	—	pF	$V_{DS} = 10 \text{ V}$
Output capacitance	C_{oss}	—	13	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	4	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	3	—	ns	$I_D = 0.3 \text{ A}$
Rise time	t_r	—	8	—	ns	$V_{GS} = 10 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	18	—	ns	$R_L = 100 \Omega$
Fall time	t_f	—	14	—	ns	
Body-drain diode forward voltage	V_{DF}	—	1	—	V	$I_F = 0.5 \text{ A}, V_{GS} = 0$
Body-drain diode reverse recovery time	t_{rr}	—	45	—	ns	$I_F = 0.5 \text{ A}, V_{GS} = 0,$ $di_F/dt = 50 \text{ A}/\mu\text{s}$

* Pulse Test

See characteristic curves of 2SK1336.

