

2SK1862, 2SK1863

Silicon N Channel MOS FET

Application

High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for Switching regulator

Table 1 Ordering Information

Type No.	V _{DSS}
2SK1862	450 V
2SK1863	500 V

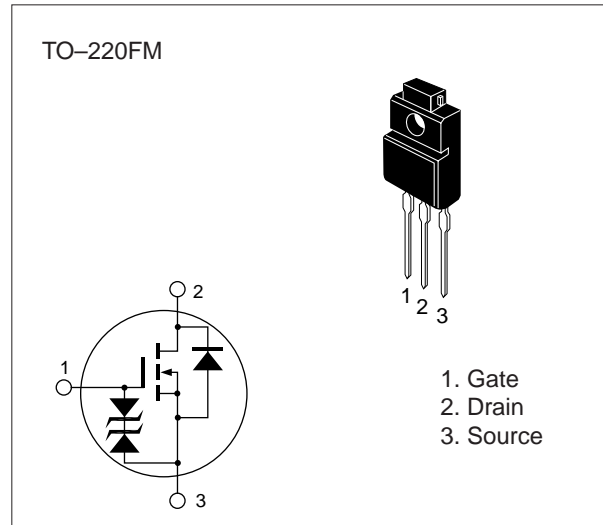


Table 2 Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit	
Drain to source voltage	2SK1862	V _{DSS}	450	V
	2SK1863	V _{DSS}	500	
Gate to source voltage	V _{GSS}	±30	V	
Drain current	I _D	3	A	
Drain peak current	I _{D(pulse)} *	12	A	
Body-drain diode reverse drain current	I _{DR}	3	A	
Channel dissipation	P _{ch} **	25	W	
Channel temperature	T _{ch}	150	°C	
Storage temperature	T _{stg}	-55 to +150	°C	

* PW ≤ 10 μs, duty cycle ≤ 1 %

** Value at T_c = 25 °C

Table 3 Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Item		Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK1862	$V_{(BR)DSS}$	450	—	—	V	$I_D = 10\text{ mA}, V_{GS} = 0$
	2SK1863		500				
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	$V_{GS} = \pm 25\ \text{V}, V_{DS} = 0$
Zero gate voltage drain current	2SK1862	I_{DSS}	—	—	250	μA	$V_{DS} = 360\ \text{V}, V_{GS} = 0$
	2SK1863						$V_{DS} = 400\ \text{V}, V_{GS} = 0$
Gate to source cutoff voltage		$V_{GS(off)}$	2.0	—	3.0	V	$I_D = 1\ \text{mA}, V_{DS} = 10\ \text{V}$
Static drain to source on state resistance	2SK1862	$R_{DS(on)}$	—	2.0	2.8	Ω	$I_D = 2\ \text{A}, V_{GS} = 10\ \text{V}^*$
	2SK1863		—	2.2	3.0		
Forward transfer admittance		$ y_{fs} $	1.5	2.5	—	S	$I_D = 2\ \text{A}$ $V_{DS} = 10\ \text{V}^*$
Input capacitance		C_{iss}	—	330	—	pF	$V_{DS} = 10\ \text{V}$
Output capacitance		C_{oss}	—	90	—	pF	$V_{GS} = 0$
Reverse transfer capacitance		C_{rss}	—	15	—	pF	$f = 1\ \text{MHz}$
Turn-on delay time		$t_{d(on)}$	—	7	—	ns	$I_D = 2\ \text{A}$
Rise time		t_r	—	20	—	ns	$V_{GS} = 10\ \text{V}$
Turn-off delay time		$t_{d(off)}$	—	30	—	ns	$R_L = 15\ \Omega$
Fall time		t_f	—	20	—	ns	
Body-drain diode forward voltage		V_{DF}	—	0.9	—	V	$I_F = 3\ \text{A}, V_{GS} = 0$
Body-drain diode reverse recovery time		t_{rr}	—	300	—	ns	$I_F = 3\ \text{A}, V_{GS} = 0,$ $di_F / dt = 100\ \text{A} / \mu\text{s}$

* Pulse Test

See characteristic curves of 2SK1153, 2SK1154

