

2SK1831, 2SK1832

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, DC-DC converter

Table 1 Ordering Information

Type No	V_{DSS}
2SK1831	450V
2SK1832	500V

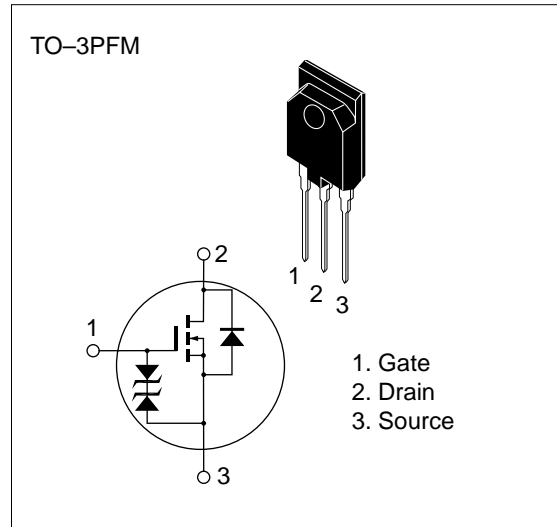


Table 2 Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Item	Symbol	Ratings	Unit	
Drain to source voltage	K1831	V_{DSS}	450	V
	K1832		500	
Gate to source voltage	V_{GSS}	± 30	V	
Drain current	I_D	10	A	
Drain peak current	$I_{D(\text{pulse})}^*$	30	A	
Body-drain diode reverse drain current	I_{DR}	10	A	
Channel dissipation	P_{ch}^{**}	50	W	
Channel temperature	T_{ch}	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$	

* $PW \leq 10 \mu\text{s}$, duty cycle $\leq 1\%$

** Value at $T_c = 25^\circ\text{C}$

Table 3 Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	K1831	450	—	—	V	ID = 10 mA, VGS = 0
	K1832	500	—	—		
Gate to source breakdown voltage	V(BR)GSS	±30	—	—	V	IG = ±100 μA, VDS = 0
Gate to source leak current	IGSS	—	—	±10	μA	VGS = ±25 V, VDS = 0
Zero gate voltage drain current	K1831	—	—	250	μA	VDS = 360 V, VGS = 0 VDS = 400 V, VGS = 0
	K1832	—	—	—		
Gate to source cutoff voltage	VGS(off)	2.0	—	3.0	V	ID = 1 mA, VDS = 10 V
Static drain to source on state resistance	K1831	—	0.6	0.8	Ω	ID = 5 A VGS = 10 V *
	K1832	—	0.7	0.9		
Forward transfer admittance	yfs	4.0	7.0	—	S	ID = 5 A VDS = 10 V *
Input capacitance	Ciss	—	1050	—	pF	VDS = 10 V
Output capacitance	Coss	—	280	—	pF	VGS = 0
Reverse transfer capacitance	Crss	—	40	—	pF	f = 1 MHz
Turn-on delay time	td(on)	—	15	—	ns	ID = 5 A
Rise time	tr	—	60	—	ns	VGS = 10 V
Turn-off delay time	td(off)	—	90	—	ns	RL = 6 Ω
Fall time	tf	—	45	—	ns	
Body-drain diode forward voltage	VDF	—	1.0	—	V	IF = 10 A, VGS = 0
Body-drain diode reverse recovery time	trr	—	350	—	ns	IF = 10 A, VGS = 0, diF / dt = 100 A / μs

* Pulse Test

See characteristic curves of 2SK1157, 2SK1158

