

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 (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	K1831	450	V
	K1832	500	
Gate to source voltage	V _{GSS}	±30	V
Drain current	I _D	10	A
Drain peak current	I _{D(pulse)*}	30	A
Body-drain diode reverse drain current	I _{DR}	10	A
Channel dissipation	P _{ch**}	50	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

* PW ≤ 10 μs, duty cycle ≤ 1 %

** Value at Tc = 25 °C

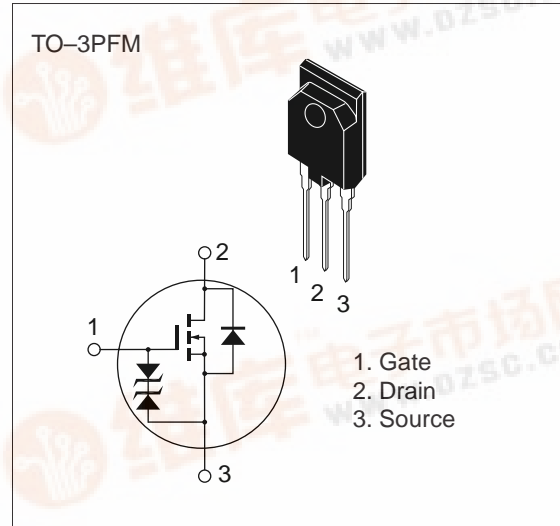


Table 3 Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Item		Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	K1831	$V_{(BR)DSS}$	450	—	—	V	$I_D = 10\text{ mA}, V_{GS} = 0$
	K1832		500	—	—		
Gate to source breakdown voltage		$V_{(BR)GSS}$	± 30	—	—	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	K1831	I_{DSS}	—	—	250	μA	$V_{DS} = 360\text{ V}, V_{GS} = 0$
	K1832						$V_{DS} = 400\text{ V}, V_{GS} = 0$
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	K1831	$R_{DS(on)}$	—	0.6	0.8	Ω	$I_D = 5\text{ A}$ $V_{GS} = 10\text{ V}^*$
	K1832		—	0.7	0.9		
Forward transfer admittance		$ y_{fs} $	4.0	7.0	—	S	$I_D = 5\text{ A}$ $V_{DS} = 10\text{ V}^*$
Input capacitance		C_{iss}	—	1050	—	pF	$V_{DS} = 10\text{ V}$
Output capacitance		C_{oss}	—	280	—	pF	$V_{GS} = 0$
Reverse transfer capacitance		C_{rss}	—	40	—	pF	$f = 1\text{ MHz}$
Turn-on delay time		$t_{d(on)}$	—	15	—	ns	$I_D = 5\text{ A}$
Rise time		t_r	—	60	—	ns	$V_{GS} = 10\text{ V}$
Turn-off delay time		$t_{d(off)}$	—	90	—	ns	$R_L = 6\ \Omega$
Fall time		t_f	—	45	—	ns	
Body-drain diode forward voltage		V_{DF}	—	1.0	—	V	$I_F = 10\text{ A}, V_{GS} = 0$
Body-drain diode reverse recovery time		t_{rr}	—	350	—	ns	$I_F = 10\text{ A}, V_{GS} = 0,$ $di_F / dt = 100\text{ A} / \mu\text{s}$

* Pulse Test

See characteristic curves of 2SK1157, 2SK1158

