

2SK1313 L, 2SK1314 L,
2SK1313 S, 2SK1314 S

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 and DC-DC converter

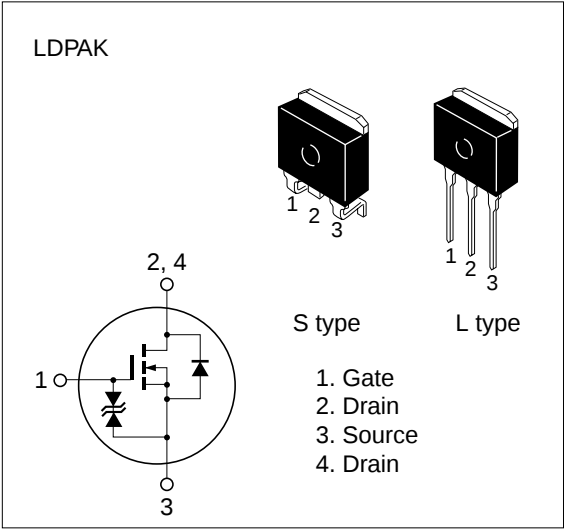


Table 1 Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	2SK1313 V _{DSS}	450	V
	2SK1314	500	
Gate to source voltage	V _{GSS}	±30	V
Drain current	I _D	5	A
Drain peak current	I _{D(pulse)} *	20	A
Body to drain diode reverse drain current	I _{DR}	5	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 T_C = 25 °C

2SK1313 (L), 2SK1313 (S), 2SK1314 (L), 2SK1314 (S)

Table 2 Electrical Characteristics (Ta = 25°C)

Item		Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	2SK1313	$V_{(BR)DSS}$	450	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
	2SK1314		500	—	—	V	
Gate to source breakdown voltage		$V_{(BR)GSS}$	±30	—	—	V	$I_G = \pm 100 \text{ } \mu\text{A}$, $V_{DS} = 0$
Gate to source leak current		I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 25 \text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	2SK1313	I_{DSS}	—	—	250	μA	$V_{DS} = 360 \text{ V}$, $V_{GS} = 0$
	2SK1314		—	—	—	μA	$V_{DS} = 400 \text{ V}$, $V_{GS} = 0$
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	2SK1313	$R_{DS(on)}$	—	1.0	1.4	Ω	$I_D = 2.5 \text{ A}$, $V_{GS} = 10 \text{ V}$ *
	2SK1314		—	1.2	1.5	Ω	
Forward transfer admittance		$ y_{fs} $	2.5	4.0	—	S	$I_D = 2.5 \text{ A}$, $V_{DS} = 10 \text{ V}$ *
Input capacitance		C_{iss}	—	640	—	pF	$V_{DS} = 10 \text{ V}$, $V_{GS} = 0$, $f = 1 \text{ MHz}$
Output capacitance		C_{oss}	—	160	—	pF	
Reverse transfer capacitance		C_{rss}	—	20	—	pF	
Turn-on delay time		$t_{d(on)}$	—	10	—	ns	$I_D = 2.5 \text{ A}$, $V_{GS} = 10 \text{ V}$, $R_L = 12 \text{ } \Omega$
Rise time		t_r	—	25	—	ns	
Turn-off delay time		$t_{d(off)}$	—	50	—	ns	
Fall time		t_f	—	30	—	ns	
Body to drain diode forward voltage		V_{DF}	—	0.95	—	V	$I_F = 5 \text{ A}$, $V_{GS} = 0$
Body to drain diode reverse recovery time		t_{rr}	—	300	—	ns	$I_F = 5 \text{ A}$, $V_{GS} = 0$, $di_F/dt = 100 \text{ A}/\mu\text{s}$

* Pulse Test

See characteristic curves of 2SK1155, 2SK1156.

