

2SK1315 (L), 2SK1316 (L), 2SK1315 (S), 2SK1316 (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, DC-DC converter and motor driver

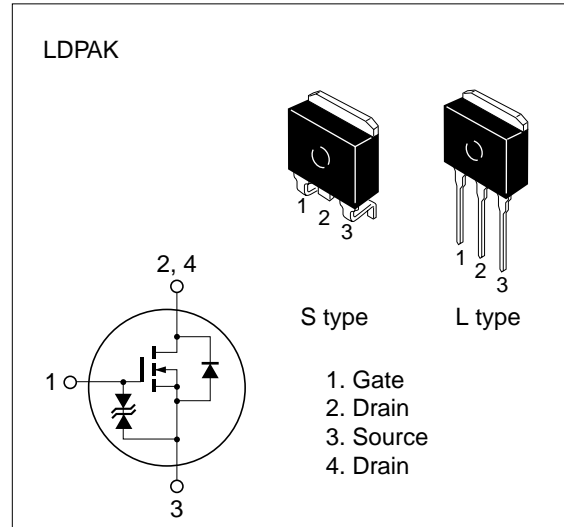


Table 1 Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Item	Symbol	Ratings	Unit	
Drain to source voltage	2SK1315	V_{DSS}	450	V
	2SK1316		500	
Gate to source voltage	V_{GSS}	± 30	V	
Drain current	I_D	8	A	
Drain peak current	$I_{D(\text{pulse})}^*$	32	A	
Body to drain diode reverse drain current	I_{DR}	8	A	
Channel dissipation	P_{ch}^{**}	60	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 2 Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	2SK1315	450	—	—	V	ID = 10 mA, VGS = 0
	2SK1316	500	—	—	V	
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	2SK1315	—	—	250	μA	VDS = 360 V, VGS = 0
	2SK1316	—	—	—	μA	
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	2SK1315	—	0.55	0.7	Ω	ID = 4 A, VGS = 10 V *
	2SK1316	—	0.60	0.8	Ω	
Forward transfer admittance	yfs	4.5	7.5	—	S	ID = 4 A, VDS = 10 V *
Input capacitance	Ciss	—	1150	—	pF	VDS = 10 V, VGS = 0,
Output capacitance	Coss	—	340	—	pF	f = 1 MHz
Reverse transfer capacitance	Crss	—	55	—	pF	
Turn-on delay time	td(on)	—	17	—	ns	ID = 4 A, VGS = 10 V,
Rise time	tr	—	55	—	ns	RL = 7.5 Ω
Turn-off delay time	td(off)	—	100	—	ns	
Fall time	tf	—	45	—	ns	
Body to drain diode forward voltage	VDF	—	0.9	—	V	IF = 8 A, VGS = 0
Body to drain diode reverse recovery time	trr	—	350	—	ns	IF = 8 A, VGS = 0, diF/dt = 100 A/μs

* Pulse Test

See characteristic curves of 2SK1159, 2SK1160.

