

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

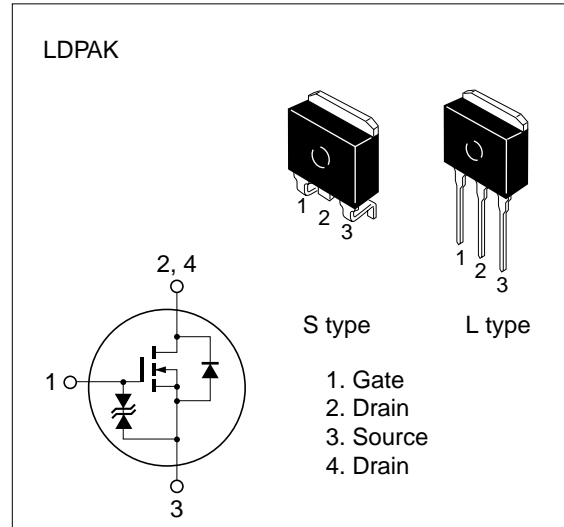


Table 1 Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

| 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 | | $I_{D(\text{pulse})}^*$ | 20 | A |
| Body to drain diode reverse drain current | | I_{DR} | 5 | A |
| Channel dissipation | | P_{ch}^{**} | 50 | W |
| Channel temperature | | T_{ch} | 150 | $^\circ\text{C}$ |
| 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 | 2SK1313 | 450 | — | — | V | ID = 10 mA, VGS = 0 |
| | 2SK1314 | 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 | 2SK1313 | — | — | 250 | µA | VDS = 360 V, VGS = 0 |
| | 2SK1314 | — | — | — | µA | VDS = 400 V, VGS = 0 |
| 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 | 2SK1313 | — | 1.0 | 1.4 | Ω | ID = 2.5 A, VGS = 10 V * |
| | 2SK1314 | — | 1.2 | 1.5 | Ω | |
| Forward transfer admittance | yfs | 2.5 | 4.0 | — | S | ID = 2.5 A, VDS = 10 V * |
| Input capacitance | Ciss | — | 640 | — | pF | VDS = 10 V, VGS = 0, |
| Output capacitance | Coss | — | 160 | — | pF | f = 1 MHz |
| Reverse transfer capacitance | Crss | — | 20 | — | pF | |
| Turn-on delay time | td(on) | — | 10 | — | ns | ID = 2.5 A, VGS = 10 V, |
| Rise time | tr | — | 25 | — | ns | RL = 12 Ω |
| Turn-off delay time | td(off) | — | 50 | — | ns | |
| Fall time | tf | — | 30 | — | ns | |
| Body to drain diode forward voltage | VDF | — | 0.95 | — | V | IF = 5 A, VGS = 0 |
| Body to drain diode reverse recovery time | trr | — | 300 | — | ns | IF = 5 A, VGS = 0, diF/dt = 100 A/µs |

* Pulse Test

See characteristic curves of 2SK1155, 2SK1156.

