

2SK2114, 2SK2115

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

Table 1 Ordering Information

| Type No. | V <sub>DSS</sub> |
|----------|------------------|
| 2SK2114  | 450 V            |
| 2SK2115  | 500 V            |

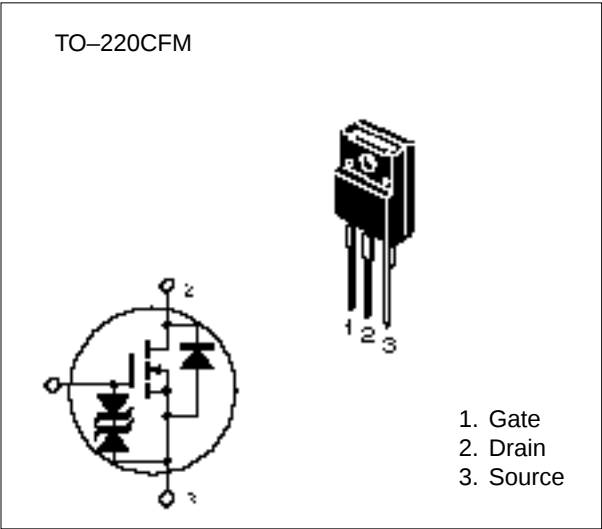


Table 2 Absolute Maximum Ratings (Ta = 25°C)

| Item                                   | Symbol                   | Ratings     | Unit |
|----------------------------------------|--------------------------|-------------|------|
| Drain to source voltage                | 2SK2114 V <sub>DSS</sub> | 450         | V    |
|                                        | 2SK2115 V <sub>DSS</sub> | 500         |      |
| Gate to source voltage                 | V <sub>GSS</sub>         | ±30         | V    |
| Drain current                          | I <sub>D</sub>           | 5           | A    |
| Drain peak current                     | I <sub>D(pulse)</sub> *  | 20          | A    |
| Body-drain diode reverse drain current | I <sub>DR</sub>          | 5           | A    |
| Channel dissipation                    | P <sub>ch</sub> **       | 35          | W    |
| Channel temperature                    | T <sub>ch</sub>          | 150         | °C   |
| Storage temperature                    | T <sub>stg</sub>         | -55 to +150 | °C   |

\* PW ≤ 10 μs, duty cycle ≤ 1 %

\*\* Value at Tc = 25 °C

**Table 3 Electrical Characteristics** (Ta = 25°C)

| Item                                       |         | Symbol        | Min | Typ  | Max | Unit | Test conditions                                                                  |
|--------------------------------------------|---------|---------------|-----|------|-----|------|----------------------------------------------------------------------------------|
| Drain to source breakdown voltage          | 2SK2114 | $V_{(BR)DSS}$ | 450 | —    | —   | V    | $I_D = 10 \text{ mA}$ , $V_{GS} = 0$                                             |
|                                            | 2SK2115 |               | 500 | —    | —   |      |                                                                                  |
| 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            | 2SK2114 | $I_{DSS}$     | —   | —    | 250 | μA   | $V_{DS} = 360 \text{ V}$ , $V_{GS} = 0$                                          |
|                                            | 2SK2115 |               | —   | —    | —   |      | $V_{DS} = 400 \text{ V}$ , $V_{GS} = 0$                                          |
| 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 | 2SK2114 | $R_{DS(on)}$  | —   | 1.0  | 1.4 | Ω    | $I_D = 2.5 \text{ A}$ , $V_{GS} = 10 \text{ V}^*$                                |
|                                            | 2SK2115 |               | —   | 1.2  | 1.5 |      |                                                                                  |
| Forward transfer admittance                |         | $ y_{fs} $    | 2.5 | 4.0  | —   | S    | $I_D = 2.5 \text{ A}$<br>$V_{DS} = 10 \text{ V}^*$                               |
| Input capacitance                          |         | $C_{iss}$     | —   | 640  | —   | pF   | $V_{DS} = 10 \text{ V}$                                                          |
| Output capacitance                         |         | $C_{oss}$     | —   | 160  | —   | pF   | $V_{GS} = 0$                                                                     |
| Reverse transfer capacitance               |         | $C_{rss}$     | —   | 20   | —   | pF   | $f = 1 \text{ MHz}$                                                              |
| Turn-on delay time                         |         | $t_{d(on)}$   | —   | 10   | —   | ns   | $I_D = 2.5 \text{ A}$                                                            |
| Rise time                                  |         | $t_r$         | —   | 25   | —   | ns   | $V_{GS} = 10 \text{ V}$                                                          |
| Turn-off delay time                        |         | $t_{d(off)}$  | —   | 50   | —   | ns   | $R_L = 12 \text{ } \Omega$                                                       |
| Fall time                                  |         | $t_f$         | —   | 30   | —   | ns   |                                                                                  |
| Body-drain diode forward voltage           |         | $V_{DF}$      | —   | 0.95 | —   | V    | $I_F = 5 \text{ A}$ , $V_{GS} = 0$                                               |
| Body-drain diode reverse recovery time     |         | $t_{rr}$      | —   | 300  | —   | ns   | $I_F = 5 \text{ A}$ , $V_{GS} = 0$ ,<br>$diF / dt = 100 \text{ A} / \mu\text{s}$ |

\* Pulse Test

■ See characteristics curve of 2SK1155, 2SK1156.

