

2SK1626, 2SK1627

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

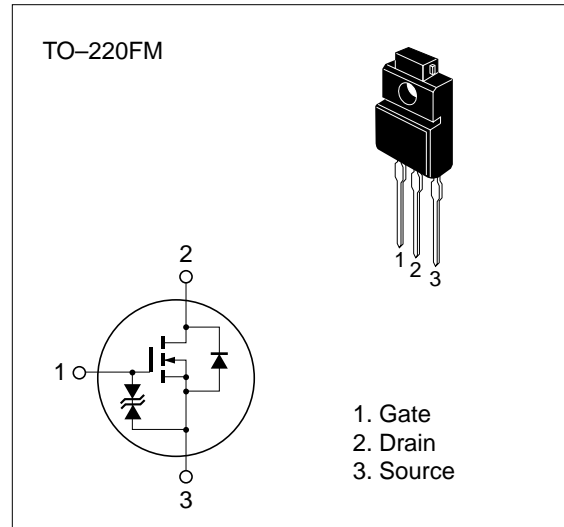


Table 1 Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

| Item | | Symbol | Ratings | Unit |
|---|---------|-------------------------|-------------|------------------|
| Drain to source voltage | 2SK1626 | V_{DSS} | 450 | V |
| | 2SK1627 | | 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}^{**} | 35 | W |
| Channel temperature | | T_{ch} | 150 | $^\circ\text{C}$ |
| Storage temperature | | T_{stg} | -55 to +125 | $^\circ\text{C}$ |

* $PW \leq 10 \mu\text{s}$, 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 | 2SK1626 | $V_{(BR)DSS}$ | 450 | — | — | V | $I_D = 10 \text{ mA}, V_{GS} = 0$ |
| | 2SK1627 | | 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 | 2SK1626 | I_{DSS} | — | — | 250 | μA | $V_{DS} = 360 \text{ V}, V_{GS} = 0$ |
| | 2SK1627 | | | | | | $V_{DS} = 400 \text{ V}, V_{GS} = 0$ |
| 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 | 2SK1626 | $R_{DS(on)}$ | — | 1.0 | 1.4 | Ω | $I_D = 2.5 \text{ A}, V_{GS} = 10 \text{ V}^*$ |
| | 2SK1627 | | — | 1.2 | 1.5 | | |
| 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 | $V_{DS} = 10 \text{ V}, V_{GS} = 0,$ |
| Output capacitance | | C_{oss} | — | 160 | — | pF | $f = 1 \text{ MHz}$ |
| Reverse transfer capacitance | | C_{rss} | — | 20 | — | pF | |
| Turn-on delay time | | $t_{d(on)}$ | — | 10 | — | ns | $I_D = 2.5 \text{ A}, V_{GS} = 10 \text{ V},$ |
| Rise time | | t_r | — | 25 | — | ns | $R_L = 12 \Omega$ |
| 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.

