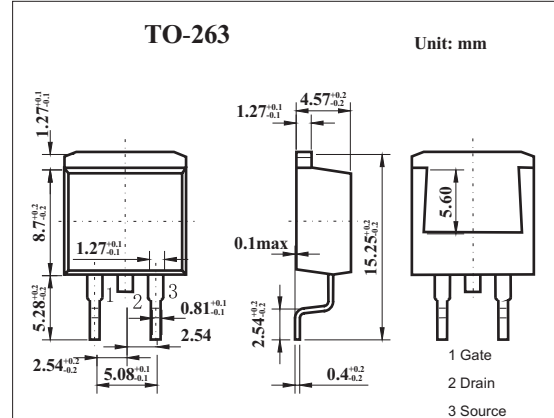


MOS Field Effect Transistor

2SK3668

■ Features

- Low gate charge
 $Q_G = 26 \text{ nC TYP. (} V_{DD} = 320 \text{ V, } V_{GS} = 10 \text{ V, } I_D = 10 \text{ A)}$
- Gate voltage rating: $\pm 30 \text{ V}$
- Low on-state resistance
 $R_{DS(on)} = 0.55 \ \Omega \text{ MAX. (} V_{GS} = 10 \text{ V, } I_D = 5.0 \text{ A)}$
- Surface mount package available



■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Rating | Unit | |
|-------------------------|------------|------------------------|------------------|---|
| Drain to source voltage | V_{DSS} | 400 | V | |
| Gate to source voltage | V_{GSS} | ± 30 | V | |
| Drain current | I_D | ± 10 | A | |
| | I_{dp}^* | ± 34 | A | |
| Power dissipation | P_D | $T_A=25^\circ\text{C}$ | 1.5 | W |
| | | $T_c=25^\circ\text{C}$ | 100 | |
| 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 $\leq 1\%$

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit | |
|-------------------------------------|---------------|---|-----|------|-----------|---------------|----|
| Drain cut-off current | I_{DSS} | $V_{DS}=400\text{V}, V_{GS}=0$ | | | 10 | μA | |
| Gate leakage current | I_{GSS} | $V_{GS}=\pm 30\text{V}, V_{DS}=0$ | | | ± 100 | nA | |
| Gate cut off voltage | $V_{GS(off)}$ | $V_{DS}=10\text{V}, I_D=1\text{mA}$ | 2.5 | | 3.5 | V | |
| Forward transfer admittance | $ Y_{fs} $ | $V_{DS}=10\text{V}, I_D=5.0\text{A}$ | 3.0 | 5.6 | | S | |
| Drain to source on-state resistance | $R_{DS(on)1}$ | $V_{GS}=10\text{V}, I_D=5.0\text{A}$ | | 0.4 | 0.55 | Ω | |
| Input capacitance | C_{iss} | $V_{DS}=10\text{V}, V_{GS}=0, f=1\text{MHz}$ | | 1320 | | pF | |
| Output capacitance | C_{oss} | | | | 230 | | pF |
| Reverse transfer capacitance | C_{rss} | | | | 13 | | pF |
| Turn-on delay time | t_{on} | $I_D=5.0\text{A}, V_{GS(on)}=10\text{V}, R_G=10 \ \Omega, V_{DD}=150\text{V}$ | | 18 | | ns | |
| Rise time | t_r | | | 8 | | ns | |
| Turn-off delay time | t_{off} | | | 44 | | ns | |
| Fall time | t_f | | | 4 | | ns | |
| Total Gate Charge | Q_G | $V_{DD} = 320\text{V}$ | | 26 | | nC | |
| Gate to Source Charge | Q_{GS} | $V_{GS} = 10 \text{ V}$ | | 7 | | nC | |
| Gate to Drain Charge | Q_{GD} | $I_D = 10\text{A}$ | | 11 | | nC | |
| Body Diode Forward Voltage | $V_{F(S-D)}$ | $I_F = 10 \text{ A, } V_{GS} = 0 \text{ V}$ | | 0.9 | | V | |
| Reverse Recovery Time | t_{rr} | $I_F = 10 \text{ A, } V_{GS} = 0 \text{ V}$ | | 350 | | ns | |
| Reverse Recovery Charge | Q_{rr} | $di/dt = 100 \text{ A}/\mu\text{s}$ | | 2.7 | | μC | |