# 60$V_{DS}$/±20$V_{GS}$ N-Channel Enhancement Mode MOSFET

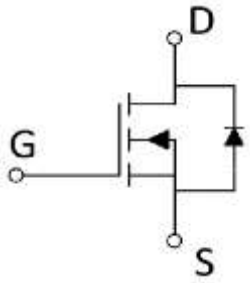
## Features

- $V_{DS}$=60V,$I_D$=3A
- $R_{DS(ON)}$=45mΩ（TYP.）$V_{GS}$=10V
- $R_{DS(ON)}$=60mΩ（TYP.）$V_{GS}$=4.5V

## Applications

- Portable device
- Switch switching

**SOT-89**




## Ordering Information

| Device | package | Device Marking | Package Qty. |
|---|---|---|---|
| 2SK3065 | SOT-89 | KE | 1000/PCS |

## Absolute Maximum Ratings ($T_C$=25℃,unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Drain-Source Voltage ($V_{GS}$=0V) | $V_{DS}$ | 60 | V |
| Gate-Source Voltage ($V_{GS}$=0V,static) | $V_{GS}$ | ±20 | V |
| Continuous Drain Current ($T_C$=25℃) | $I_D$ | 3 | A |
| Continuous Drain Current ($T_C$=100℃) | | - | A |
| Pulesd Drain Current | $I_{DM}$ | 8 | A |
| Maximum Power Dissipation ($T_C$=25℃) | $P_D$ | 0.5 | W |
| Operating,Storage Temperature Range | $T_J$,$T_{STG}$ | -55~150 | ℃ |

## Thermal Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Thermal Resistance,Junction-to-Case | $R_{\theta JC}$ | - | 12 | - | ℃/ W |
| Thermal Resistance,Junction-to-Ambient | $R_{\theta JA}$ | - | 100 | - | ℃/ W |

## Electrical Characteristics

| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Drain-Source Breakdown Voltage | $BV_{DSS}$ | $V_{GS}$=0V,$I_D$=250μA | 60 | - | - | V |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=24V, $V_{GS}$=0V | - | - | 1 | μA |
| Gate -Source Leakage Current | $I_{GSS}$ | $V_{GS}$=±12V, $V_{DS}$=0V | - | - | ±100 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$= $V_{GS}$,$I_D$=250μA | 0.8 | - | 1.5 | V |
| Drain-Source On-stage Resistance | $R_{DS(ON)}$ | $V_{GS}$=10V,$I_D$=5.8A | - | 35 | 45 | mΩ |
| | | $V_{GS}$=4.5V,$I_D$=5A | - | 45 | 65 | |

## Dynamic Characteristics

| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Input capacitance | $C_{iss}$ | $V_{DS}$=15V | - | 160 | - | pF |
| Output capacitance | $C_{oss}$ | $V_{GS}$=0V | - | 85 | - | |
| Reverse transfer capacitance | $C_{rss}$ | f=1MHz | - | 25 | - | |
| Gate Resistance | $R_g$ | f=1MHz | - | 3.4 | - | Ω |
| Total Gate Charge | $Q_g$ | $V_{DS}$=15V | - | - | - | nC |
| Gate Source Charge | $Q_{gs}$ | $V_{GS}$=4.5V | - | - | - | |
| Gate Drain Charge | $Q_{gd}$ | $I_D$=5.8A | - | - | - | |
| Turn-on delay Time | $t_{d(on)}$ | $V_{GS}$=10V | - | 20 | - | ns |
| Rise time | $t_r$ | $V_{DS}$=15V | - | 50 | - | |
| Turn-off delay Time | $t_{d(off)}$ | $R_L$=2.7Ω | - | 120 | - | |
| Fall time | $t_f$ | $R_G$=3Ω | - | 70 | - | |

## Reverse Diode Characteristics

| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Body Diode Forward Voltage | $V_{SD}$ | $V_{GS}$=0V,$I_{SD}$=1A | - | 0.85 | 1.2 | V |
| Reverse Recovery Time | $t_{rr}$ | $V_{GS}$=0V,$I_{SD}$=5A | - | 10 | - | ns |
| Reverse Recovery Charge | $Q_{rr}$ | $d_i/d_t$=100A/μs | - | 15 | - | nC |