

Plastic-Encapsulate MOSFETS

N-channel MOSFET

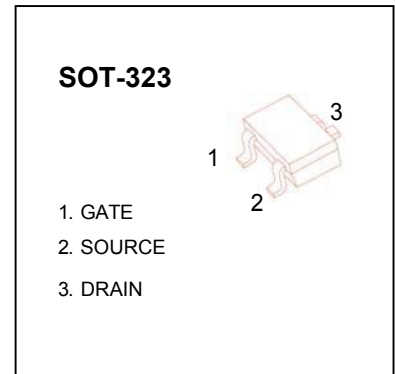
FEATURES

- Low on-resistance
- Fast switching speed
- Low voltage drive makes this device ideal for portable equipment
- Easily designed drive circuits
- Easy to parallel

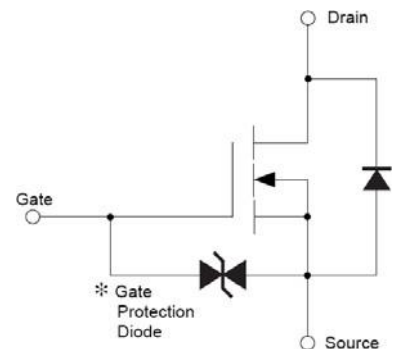
Marking: KN

MOSFET MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$ unless otherwise noted)

| Symbol | Parameter | Value | Units |
|-----------------|---|----------|--------------------|
| V_{DS} | Drain-Source voltage | 30 | V |
| V_{GSS} | Gate-Source Voltage | ± 20 | V |
| I_D | Continuous Drain Current | 0.1 | A |
| P_D | Power Dissipation | 0.2 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature | -55-150 | $^\circ\text{C}$ |
| $R_{\theta JA}$ | Thermal Resistance from Junction to Ambient | 625 | $^\circ\text{C/W}$ |



Equivalent circuit

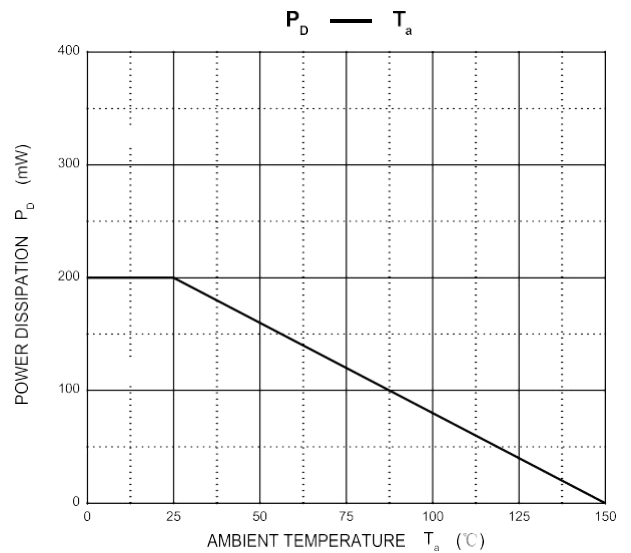
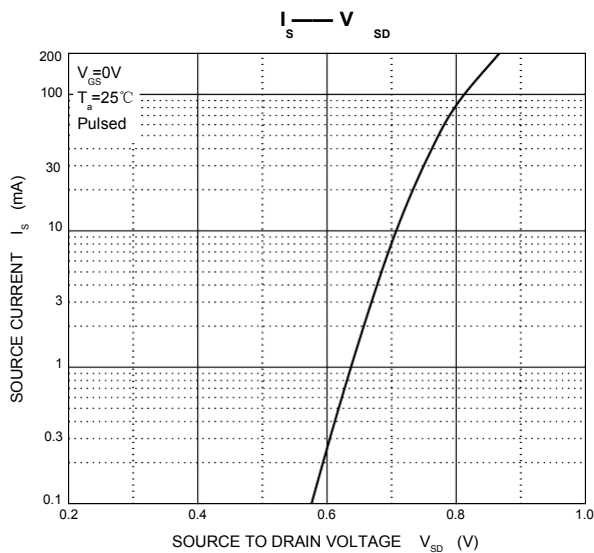
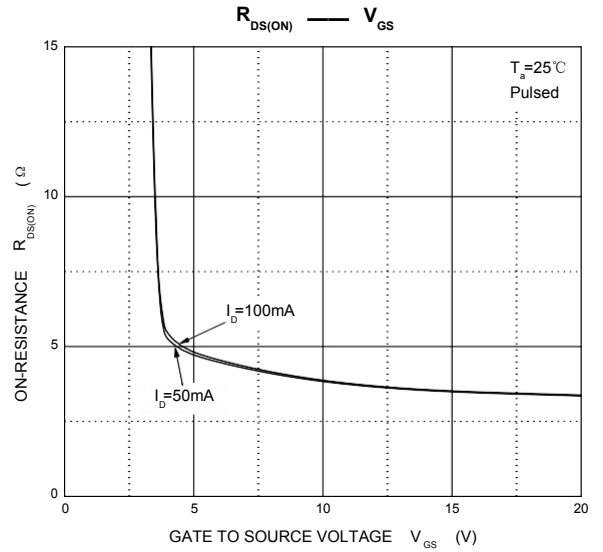
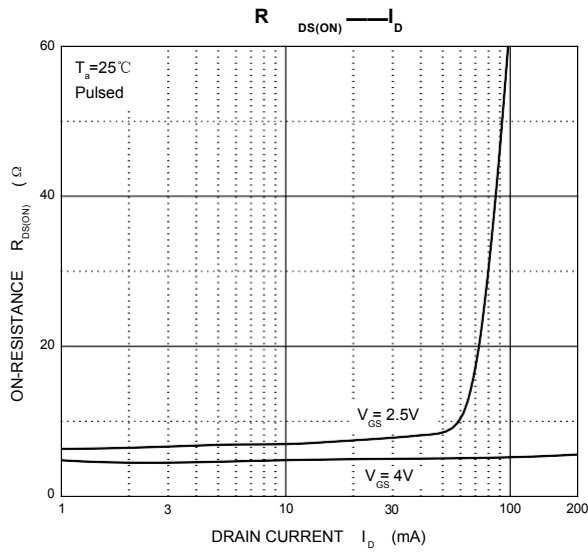
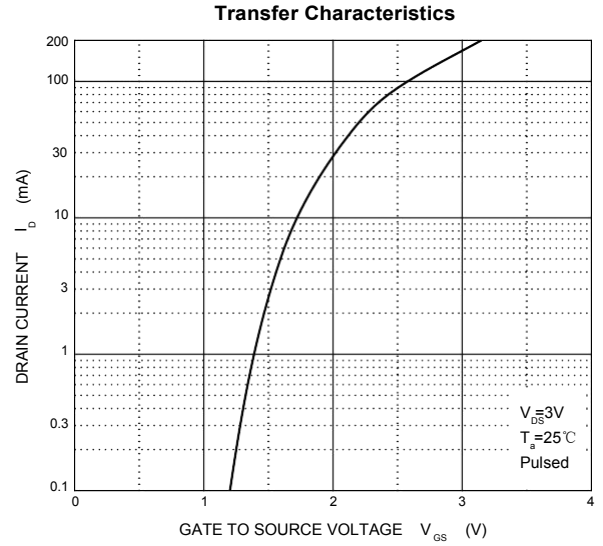
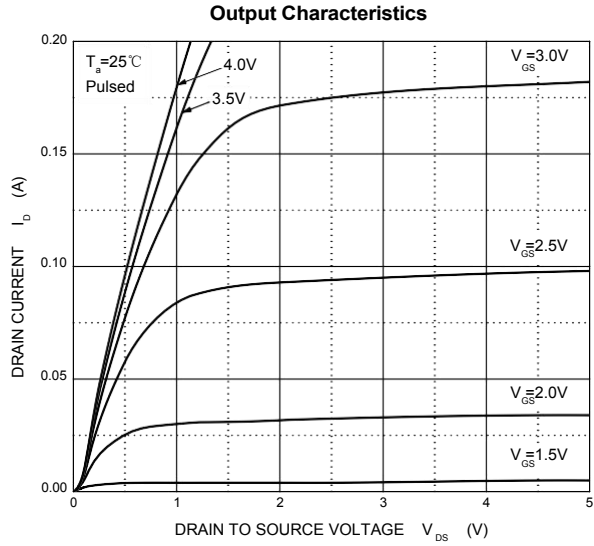


MOSFET ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$ unless otherwise noted)

| Parameter | Symbol | Test Condition | Min | Typ | Max | Units |
|-----------------------------------|---------------|---|-----|-----|---------|----------|
| Off Characteristics | | | | | | |
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = 10\mu A$ | 30 | | | V |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS} = 30V, V_{GS} = 0V$ | | | 0.2 | μA |
| Gate -Source leakage current | I_{GSS} | $V_{GS} = \pm 20V, V_{DS} = 0V$ | | | ± 2 | μA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS} = 3V, I_D = 100\mu A$ | 0.8 | | 1.5 | V |
| Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS} = 4V, I_D = 10mA$ | | | 8 | Ω |
| | | $V_{GS} = 2.5V, I_D = 1mA$ | | | 13 | Ω |
| Forward Transconductance | g_{FS} | $V_{DS} = 3V, I_D = 10mA$ | 20 | | | mS |
| Dynamic Characteristics* | | | | | | |
| Input Capacitance | C_{iss} | $V_{DS} = 5V, V_{GS} = 0V, f = 1MHz$ | | 13 | | pF |
| Output Capacitance | C_{oss} | | | 9 | | pF |
| Reverse Transfer Capacitance | C_{rss} | | | 4 | | pF |
| Switching Characteristics* | | | | | | |
| Turn-On Delay Time | $t_{d(on)}$ | $V_{GS} = 5V, V_{DD} = 5V, I_D = 10mA, R_g = 10\Omega, R_L = 500\Omega$ | | 15 | | ns |
| Rise Time | t_r | | | 35 | | ns |
| Turn-Off Delay Time | $t_{d(off)}$ | | | 80 | | ns |
| Fall Time | t_f | | | 80 | | ns |

*These parameters have no way to verify

Typical Characteristics



SOT-323 Package Outline Dimensions

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