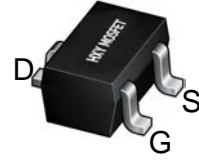




Description

The 2SK3018W uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 4.5V. This device is suitable for use as a Battery protection or in other Switching application.



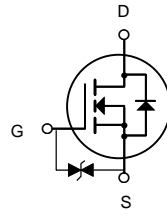
SOT-323

General Features

$V_{DS} = 30V$ $I_D = 0.1A$

$R_{DS(ON)} < 2.2\Omega @ V_{GS}=10V$

ESD Rating: HBM $\geq 2000V$



N-Channel MOSFET

Application

Battery protection

Load switch

Uninterruptible power supply

Package Marking and Ordering Information

| Product ID | Pack | Marking | Qty(PCS) |
|------------|---------|---------|----------|
| 2SK3018W | SOT-323 | KN | 3000 |

Absolute Maximum Ratings ($T_C=25^\circ\text{C}$ unless otherwise noted)

| Symbol | Parameter | Limit | Unit |
|-----------------|--|---------------------------|--------------------|
| V_{DS} | Drain-Source Voltage | 30 | V |
| V_{GS} | Gate-Source Voltage | ± 20 | V |
| I_D | Continuous Drain Current ($T_J = 150^\circ\text{C}$) | $T_A = 25^\circ\text{C}$ | 0.1 |
| | | $T_A = 100^\circ\text{C}$ | 0.07 |
| I_{DM} | Drain Current-Pulsed (Note 1) | 0.65 | A |
| P_D | Maximum Power Dissipation | 0.35 | W |
| T_J, T_{STG} | Operating Junction and Storage Temperature Range | -55 To 150 | $^\circ\text{C}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction-to-Ambient (Note 2) | 200 | $^\circ\text{C/W}$ |



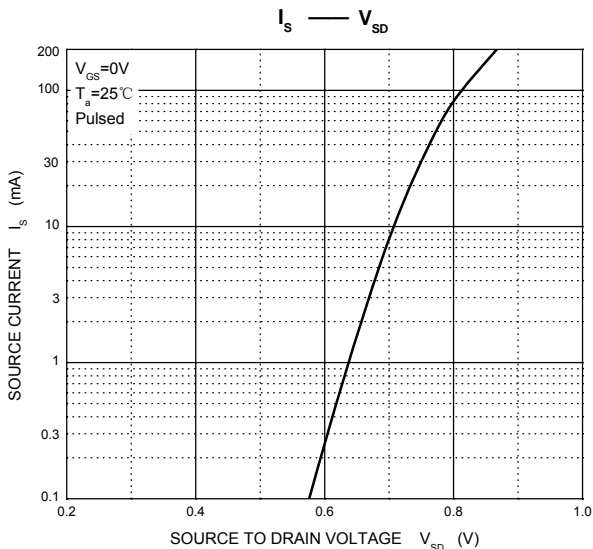
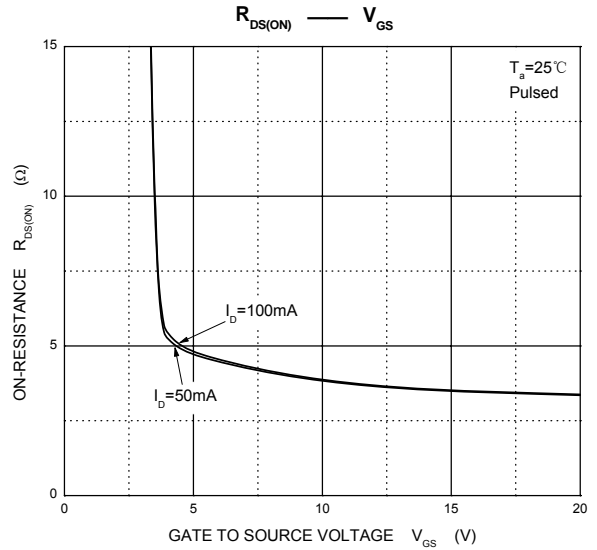
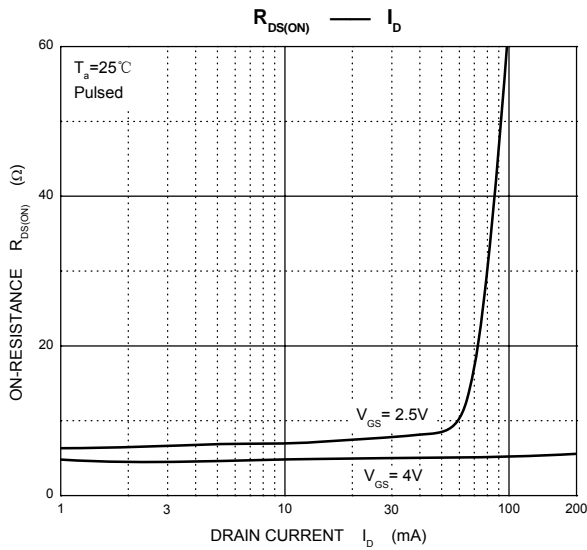
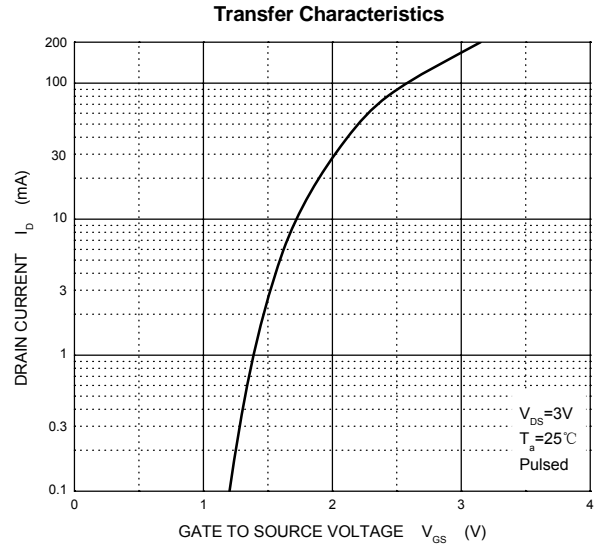
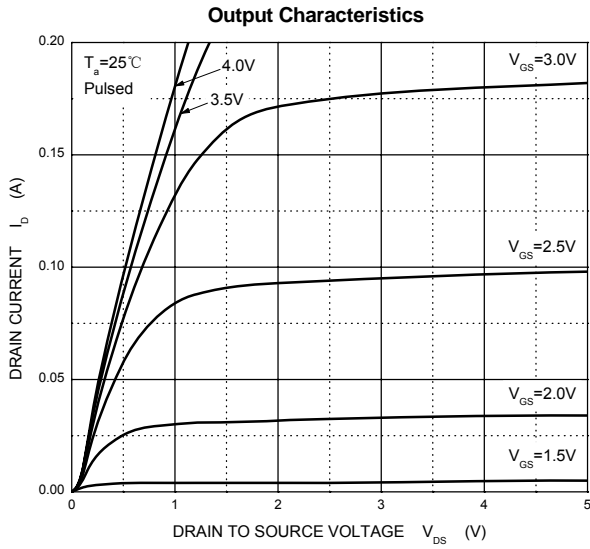
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

| Parameter | Symbol | Test Condition | Min | Typ | Max | Units | |
|-----------------------------------|--------------|---|-----|-----|---------|----------|----|
| Off Characteristics | | | | | | | |
| Drain-Source Breakdown Voltage | V_{DS} | $V_{GS} = 0V, I_D = 10\mu A$ | 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 | $R_{DS(on)}$ | $V_{GS} = 10V, I_D = 10mA$ | | 1.5 | 2.2 | Ω | |
| | | $V_{GS} = 4.5V, I_D = 1mA$ | | 2 | 3 | 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.

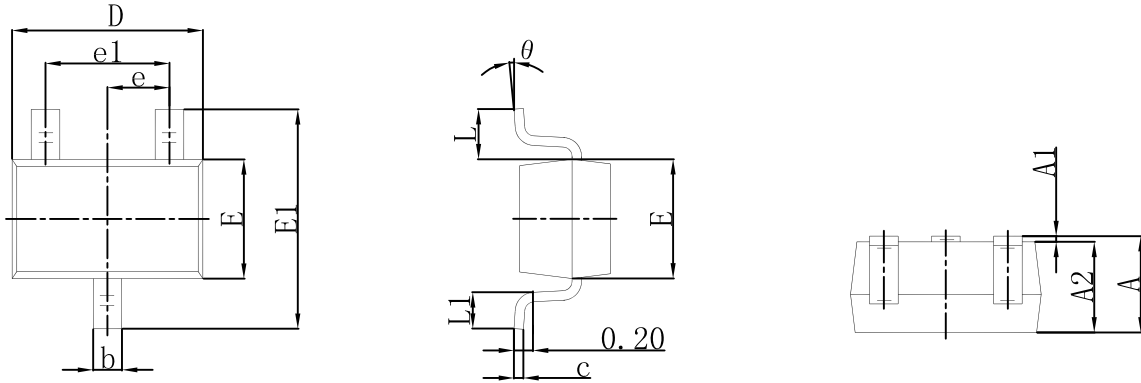


Typical Characteristics





SOT-323 Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 0.900 | 1.100 | 0.035 | 0.043 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.000 | 0.035 | 0.039 |
| b | 0.200 | 0.400 | 0.008 | 0.016 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.000 | 2.200 | 0.079 | 0.087 |
| E | 1.150 | 1.350 | 0.045 | 0.053 |
| E1 | 2.150 | 2.450 | 0.085 | 0.096 |
| e | 0.650 TYP | | 0.026 TYP | |
| e1 | 1.200 | 1.400 | 0.047 | 0.055 |
| L | 0.525 REF | | 0.021 REF | |
| L1 | 0.260 | 0.460 | 0.010 | 0.018 |
| θ | 0° | 8° | 0° | 8° |



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