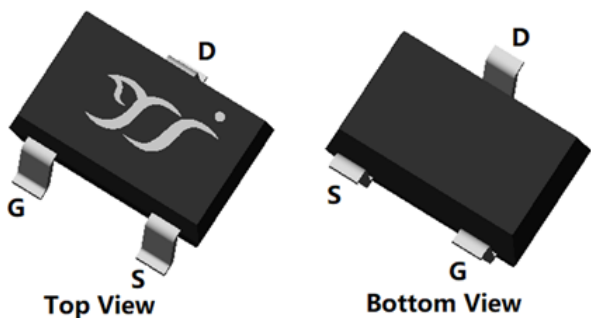
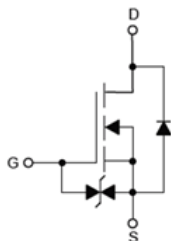


N-Channel Enhancement Mode Field Effect Transistor



SOT-323



Product Summary

- V_{DS} 30 V
- I_D 200mA
- $R_{DS(ON)}$ (at $V_{GS}=10V$) $< 2.5\Omega$
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) $< 3\Omega$

General Description

- Trench Power LV MOSFET technology
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free

Applications

- Power management
- Portable equipment

■ Absolute Maximum Ratings ($T_A=25^\circ C$ unless otherwise noted)

| Parameter | Symbol | Limit | Unit | |
|--|----------------|-----------|------|----|
| Drain-source Voltage | V_{DS} | 30 | V | |
| Gate-source Voltage | V_{GS} | ± 20 | V | |
| Drain Current | I_D | $T_A=25$ | 200 | mA |
| | | $T_A=100$ | 125 | |
| Pulsed Drain Current ^A | I_{DM} | 800 | mA | |
| Total Power Dissipation ^B | P_D | $T_A=25$ | 250 | mW |
| | | $T_A=100$ | 100 | |
| Junction and Storage Temperature Range | T_J, T_{STG} | -55~+150 | | |

■ Thermal resistance

| Parameter | Symbol | Typ | Max | Units |
|---|-----------------|-----|-----|-------------|
| Thermal Resistance Junction-to-Ambient ^C | $R_{\theta JA}$ | 400 | 500 | $^{\circ}W$ |

■ Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | Marking | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|---------|----------------------|-------------------------|----------------------------|---------------|
| 2SK3018KWJ | F2 | KN | 3000 | 30000 | 120000 | 7" reel |



■



Typical Electrical and Thermal Characteristics Diagrams

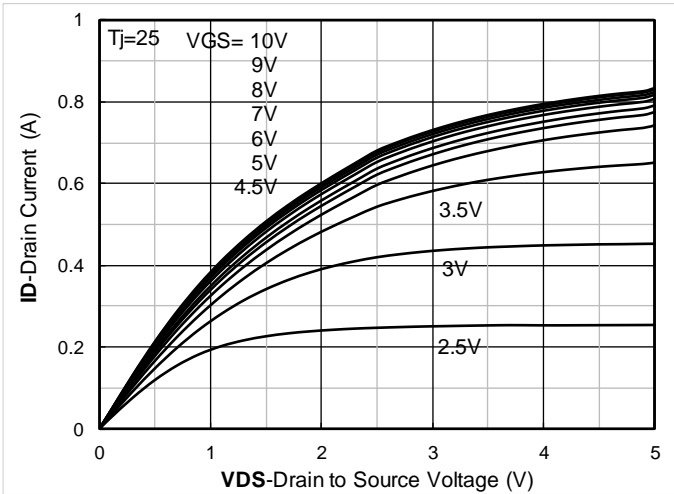


Figure 1. Output Characteristics

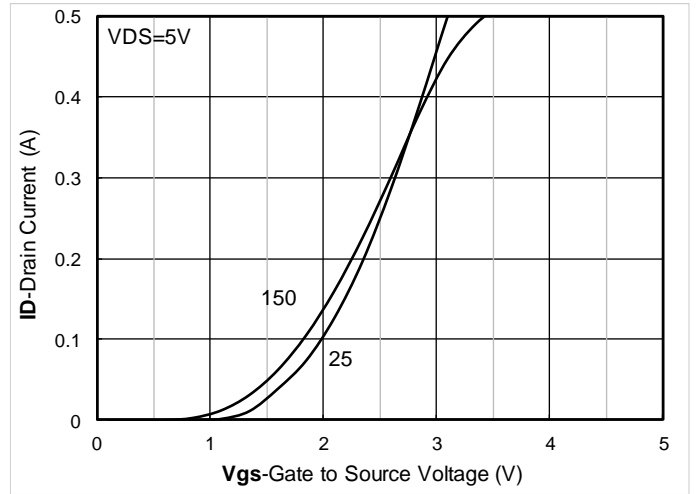


Figure 2. Transfer Characteristics

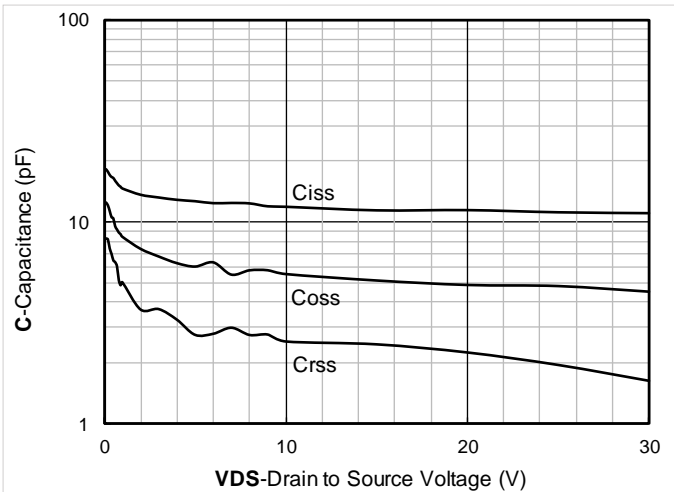


Figure 3. Capacitance Characteristics

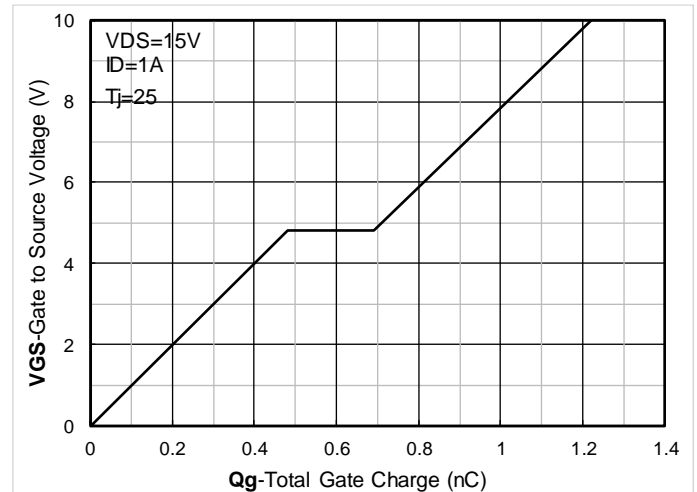


Figure 4. Gate Charge

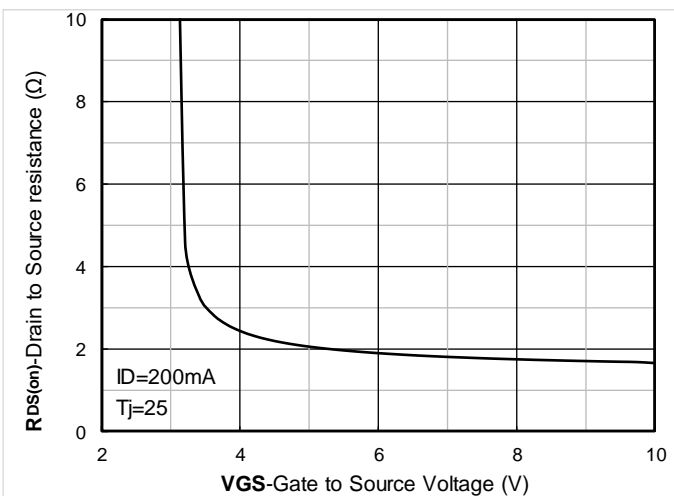


Figure 5. On-Resistance vs Gate to Source Voltage

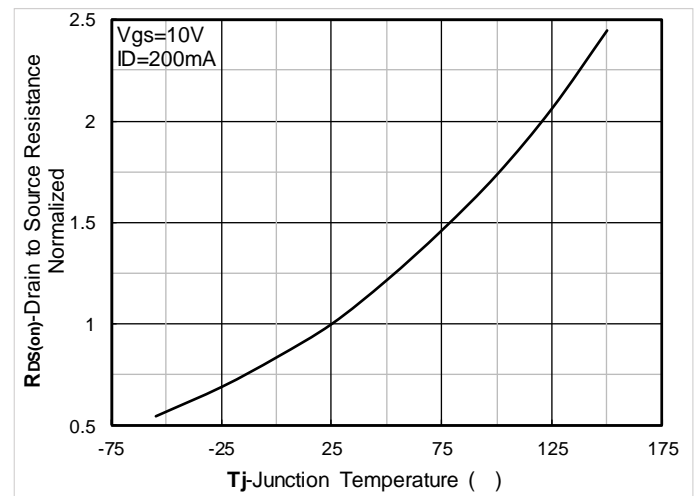


Figure 6. Normalized On-Resistance

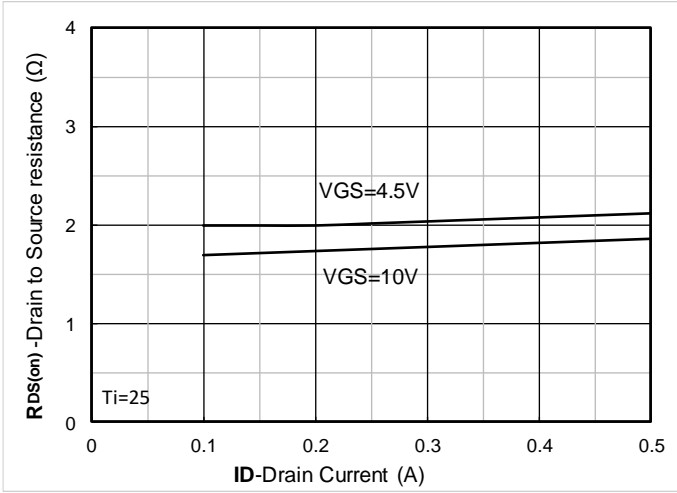


Figure 7. RDS(on) VS Drain Current

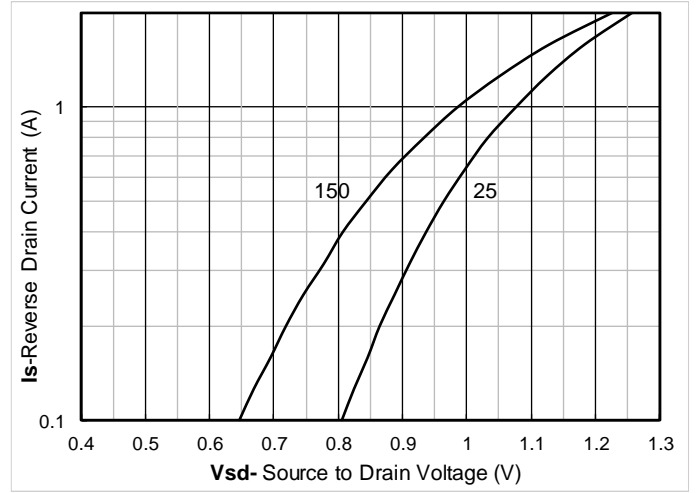


Figure 8. Forward characteristics of reverse diode

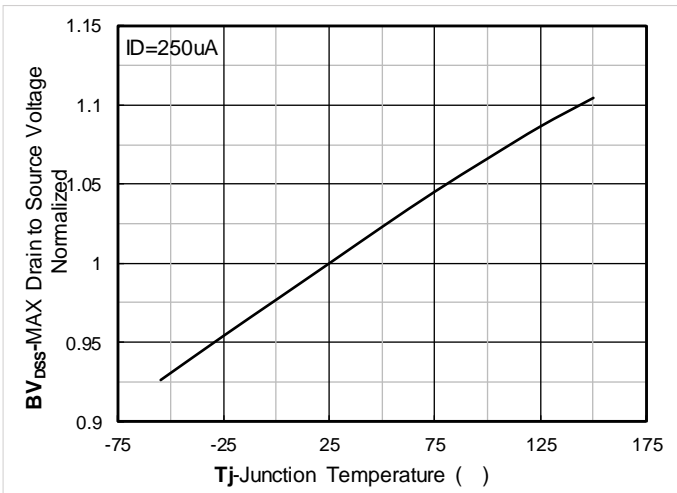


Figure 9. Normalized breakdown voltage

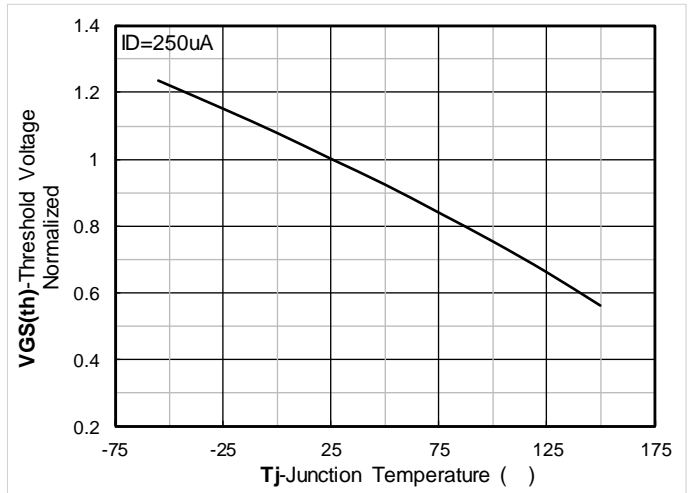


Figure 10. Normalized Threshold voltage

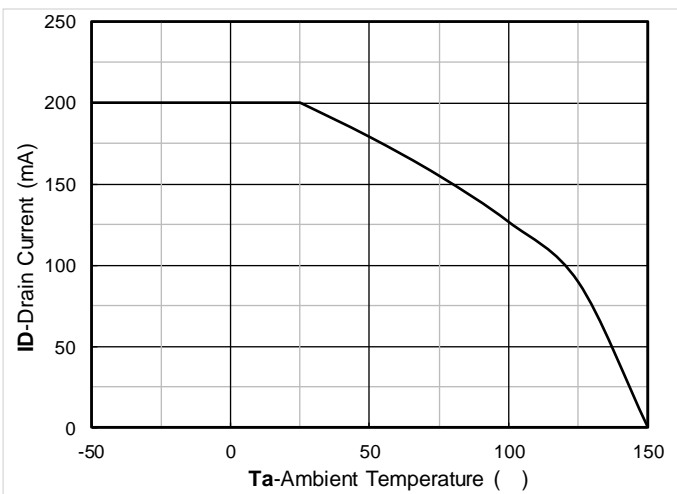


Figure 11. Current dissipation

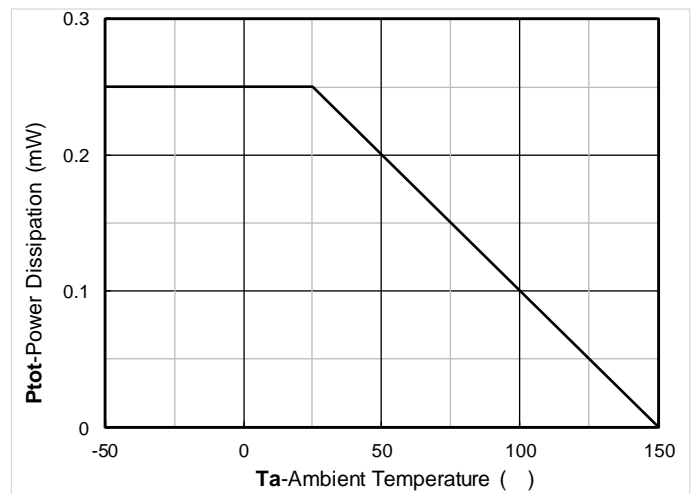


Figure 12. Power dissipation

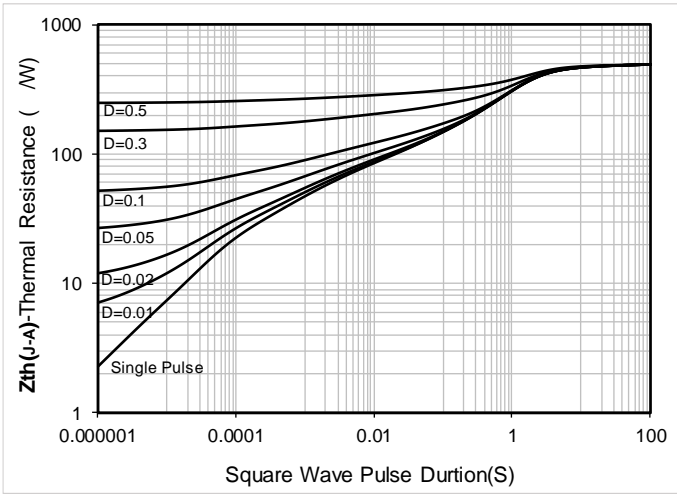


Figure 13. Maximum Transient Thermal Impedance

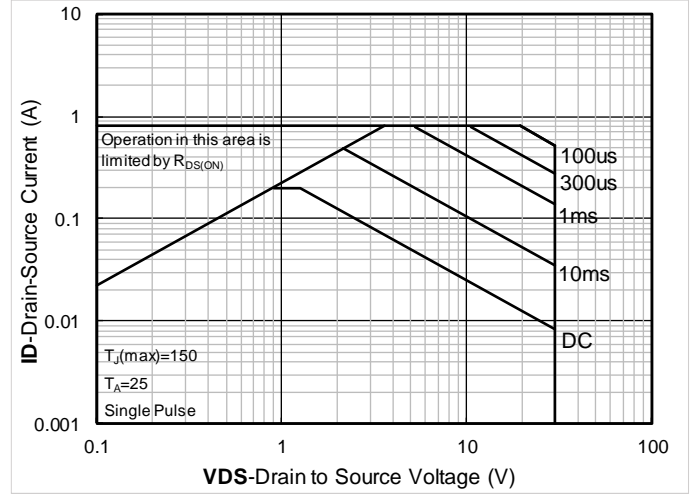


Figure 14. Safe Operation Area

■ Test Circuits & Waveforms

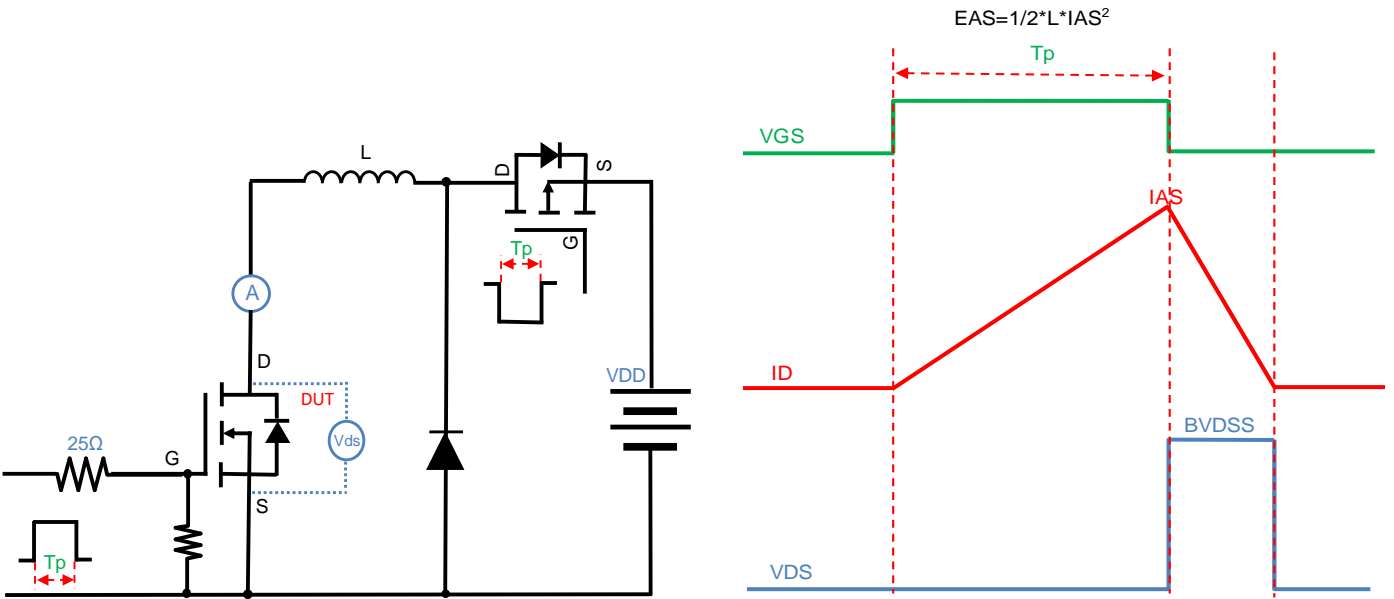


Figure A. Unclamped Inductive Switching (UIS) Test Circuit & Waveform



Figure B. Gate Charge Test Circuit & Waveform



Figure C. Resistive Switching Test Circuit & Waveform

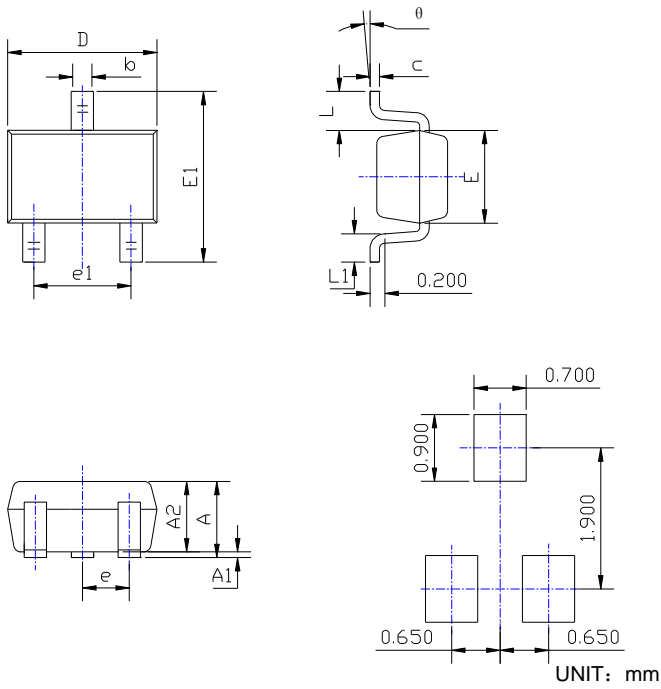


Figure D. Diode Recovery Test Circuit & Waveform



2SK3018KWJ

■ SOT-323 Package information



| SYMBOL | DIMENSIONS | | | |
|--------|------------|-------|------------|-------|
| | INCHES | | Millimeter | |
| | MIN. | MAX. | MIN. | MAX. |
| A | 0.035 | 0.043 | 0.900 | 1.100 |
| A1 | 0.000 | 0.004 | 0.000 | 0.100 |
| A2 | 0.035 | 0.039 | 0.900 | 1.000 |
| b | 0.006 | 0.016 | 0.150 | 0.400 |
| c | 0.004 | 0.010 | 0.100 | 0.250 |
| D | 0.071 | 0.087 | 1.800 | 2.200 |
| E | 0.045 | 0.053 | 1.150 | 1.350 |
| E1 | 0.085 | 0.096 | 2.150 | 2.450 |
| e | 0.026 TYP | | 0.650 TYP | |
| e1 | 0.047 | 0.055 | 1.200 | 1.400 |
| L | 0.021 REF | | 0.525 REF | |
| L1 | 0.010 | 0.018 | 0.260 | 0.460 |
| θ | 0° | 8° | 0° | 8° |

- NOTE:
1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



2SK3018KWJ

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