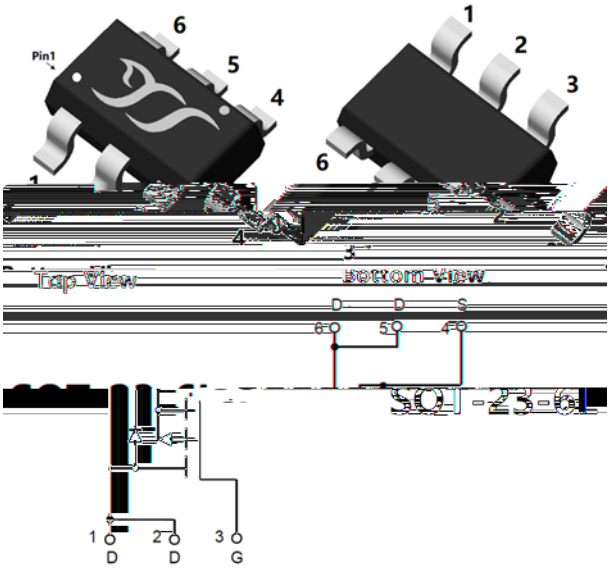
# P-Channel Enhancement Mode Field Effect Transistor




## Product Summary

| | |
|---|---|
| $V_{DS}$ | -30V |
| $I_D$ | -6A |
| $R_{DS(ON)}$( at $V_{GS}$=-10V) | ＜43m |
| $R_{DS(ON)}$( at $V_{GS}$=-4.5V) | ＜65m |

## General Description

Trench Power LV MOSFET technology
High density cell design for Low RDS(ON)
High Speed switching

Epoxy Meets UL 94 V-0 Flammability Rating
Halogen Free

## Applications

Battery protection
Load switch
Power management

**Absolute Maximum Ratings** ($T_A$=25℃ unless otherwise noted)

| Parameter | | Symbol | Limit | Unit |
|---|---|---|---|---|
| Drain-source Voltage | | $V_{DS}$ | -30 | V |
| Gate-source Voltage | | $V_{GS}$ | ±20 | V |
| Drain Current | $T_A$=25℃ | $I_D$ | -6 | A |
| | $T_A$=100℃ | | -3.8 | |
| Pulsed Drain Current [A] | | $I_{DM}$ | -40 | A |
| Total Power Dissipation [B] | $T_A$=25℃ | $P_D$ | 1.25 | W |
| | $T_A$=100℃ | | 0.5 | |
| Junction and Storage Temperature Range | | $T_J$ ,$T_{STG}$ | -55～+150 | ℃ |

**Thermal resistance**

| Parameter | | Symbol | Typ | Max | Units |
|---|---|---|---|---|---|
| Thermal Resistance Junction-to-Ambient [C] | Steady-State | R | 80 | 100 | ℃/W |

**Ordering Information** (Example)

| PREFERED P/N | PACKING CODE | Marking | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|---|
| YJJ06P03B | F2 | 0306B | 3000 | 30000 | 120000 | 7 reel |

**Electrical Characteristics** ($T_J$=25℃ unless otherwise noted)

| Parameter | Symbol | Conditions | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| **Static Parameter** | | | | | | |
| Drain-Source Breakdown Voltage | $BV_{DSS}$ | $V_{GS}$= 0V, $I_D$=- | -30 | - | - | V |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=-30V, $V_{GS}$=0V | - | - | -1 | |
| | | $V_{DS}$=-30V, $V_{GS}$=0V, Tj=150℃ | - | - | -100 | |
| Gate-Body Leakage Current | $I_{GSS}$ | $V_{GS}$= ±20V, $V_{DS}$=0V | - | - | ±100 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$= $V_{GS}$, $I_D$=- | -1 | -1.5 | -2.5 | |

## Typical Electrical and Thermal Characteristics Diagrams

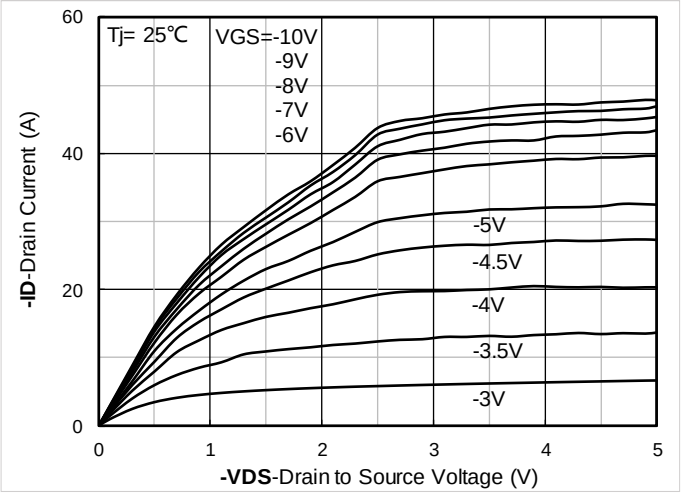



Figure 1. Output Characteristics

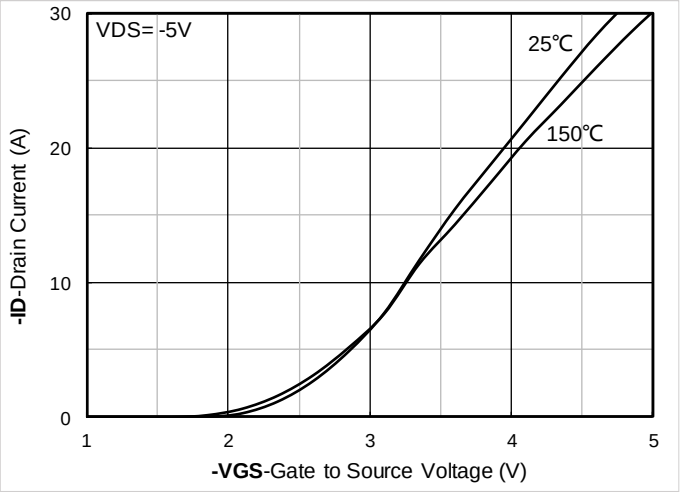



Figure 2. Transfer Characteristics

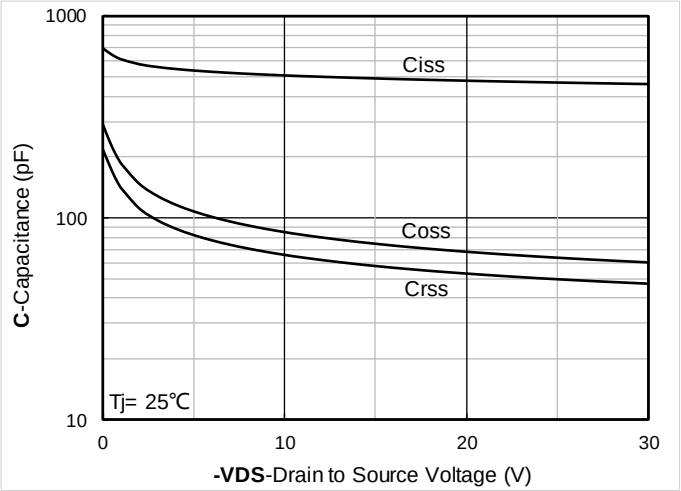



Figure 3. Capacitance Characteristics

Figure 4. Gate Charge

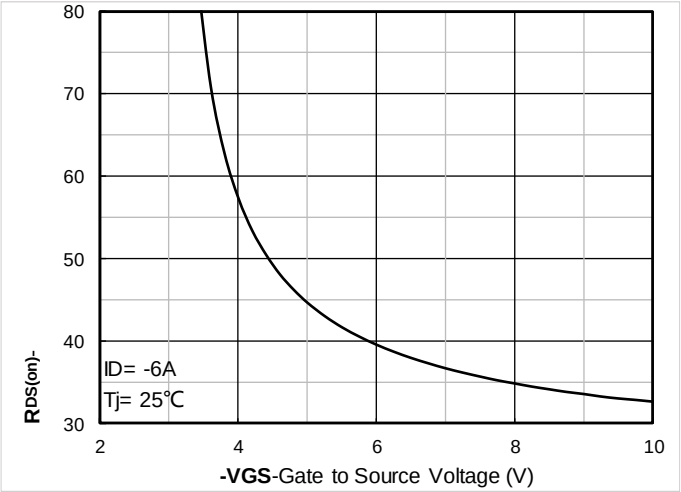



Figure 5. On-Resistance vs Gate to Source Voltage

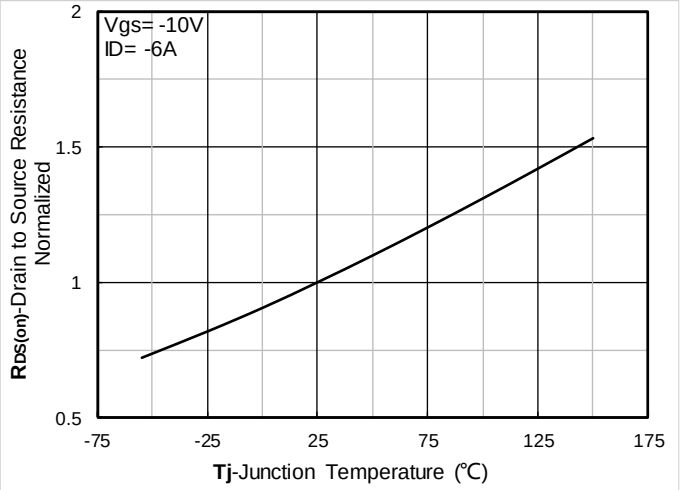



Figure 6. Normalized On-Resistance

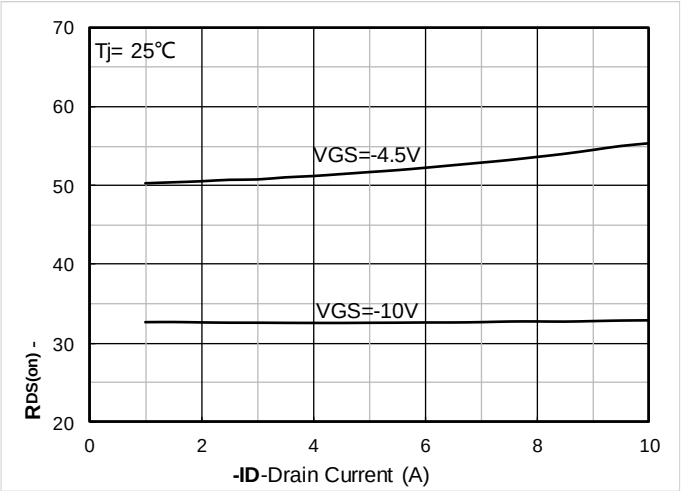



Figure 7. RDS(on) VS Drain Current

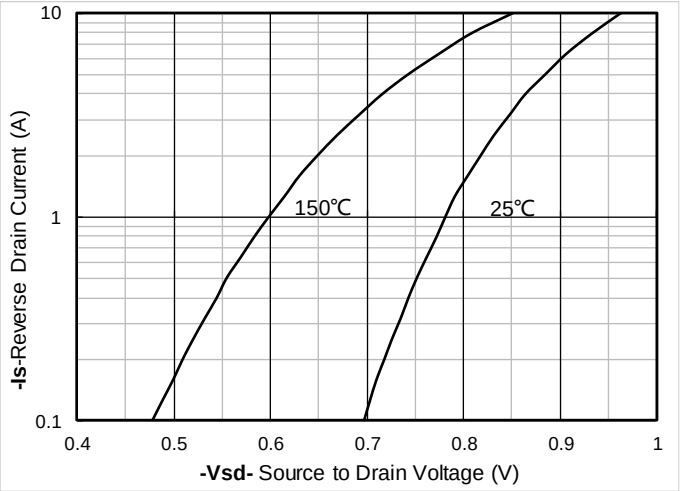



Figure 8. Forward characteristics of reverse diode

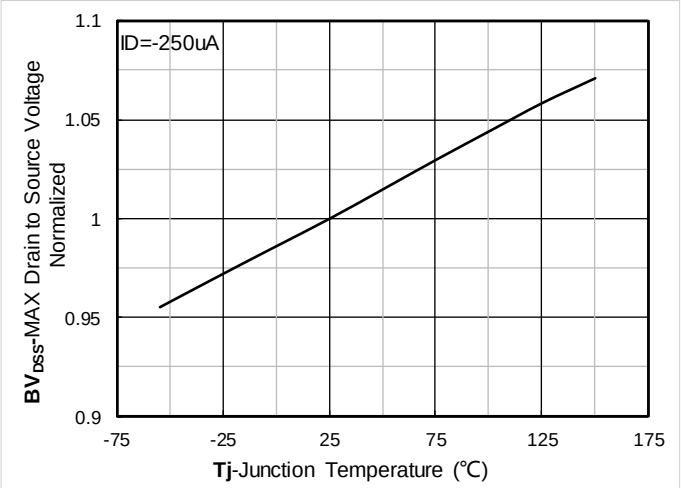



Figure 9. Normalized breakdown voltage

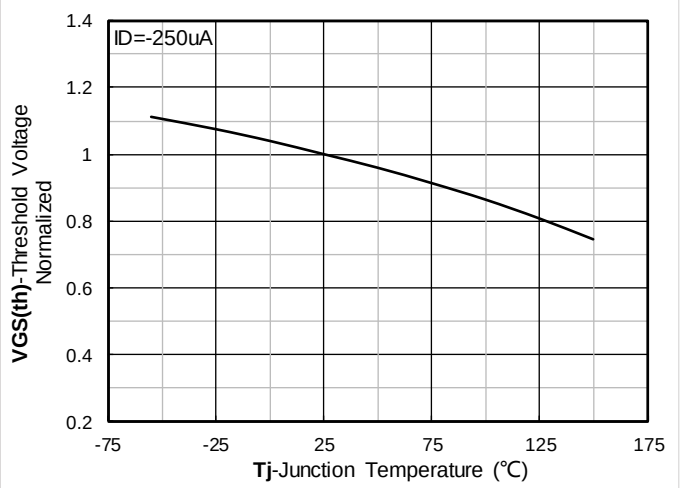



Figure 10. Normalized Threshold voltage

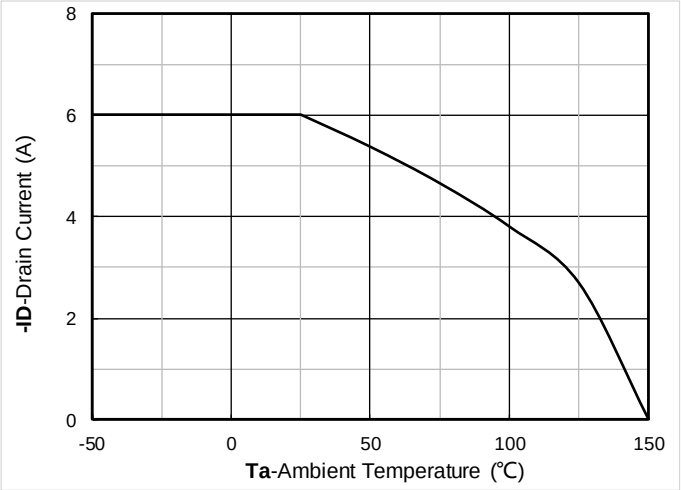



Figure 11. Current dissipation

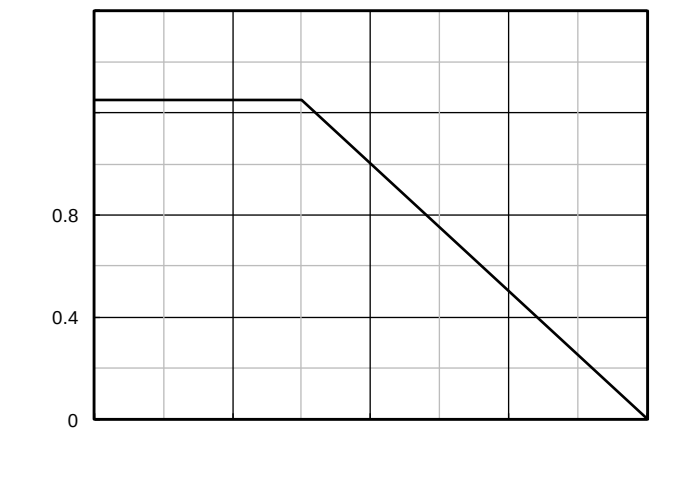


Figure 12. Power dissipation

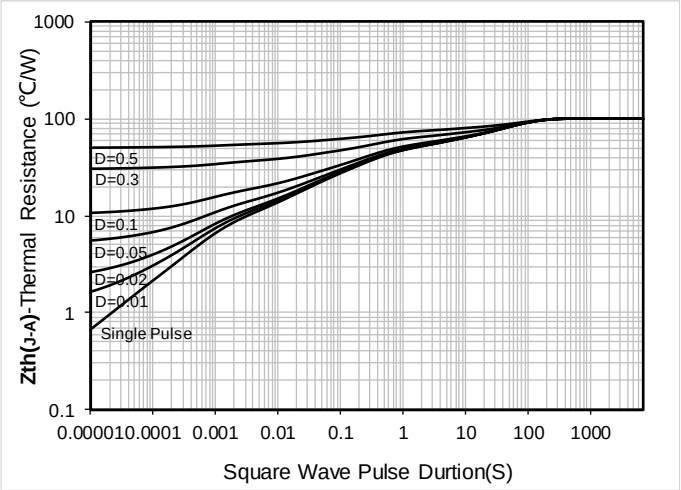



Figure 13. Maximum Transient Thermal Impedance

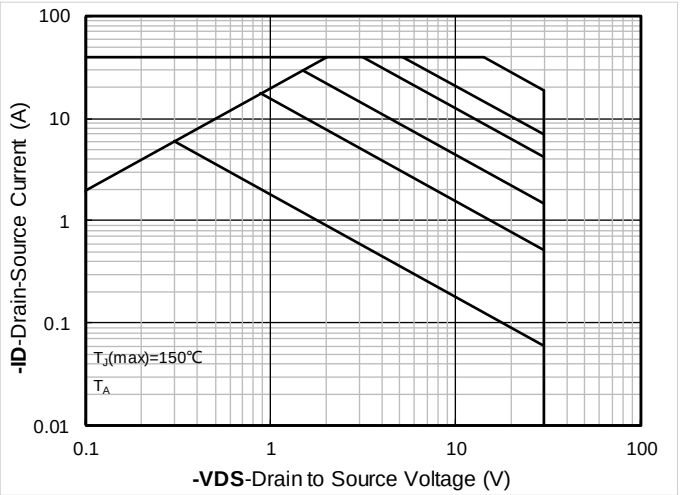
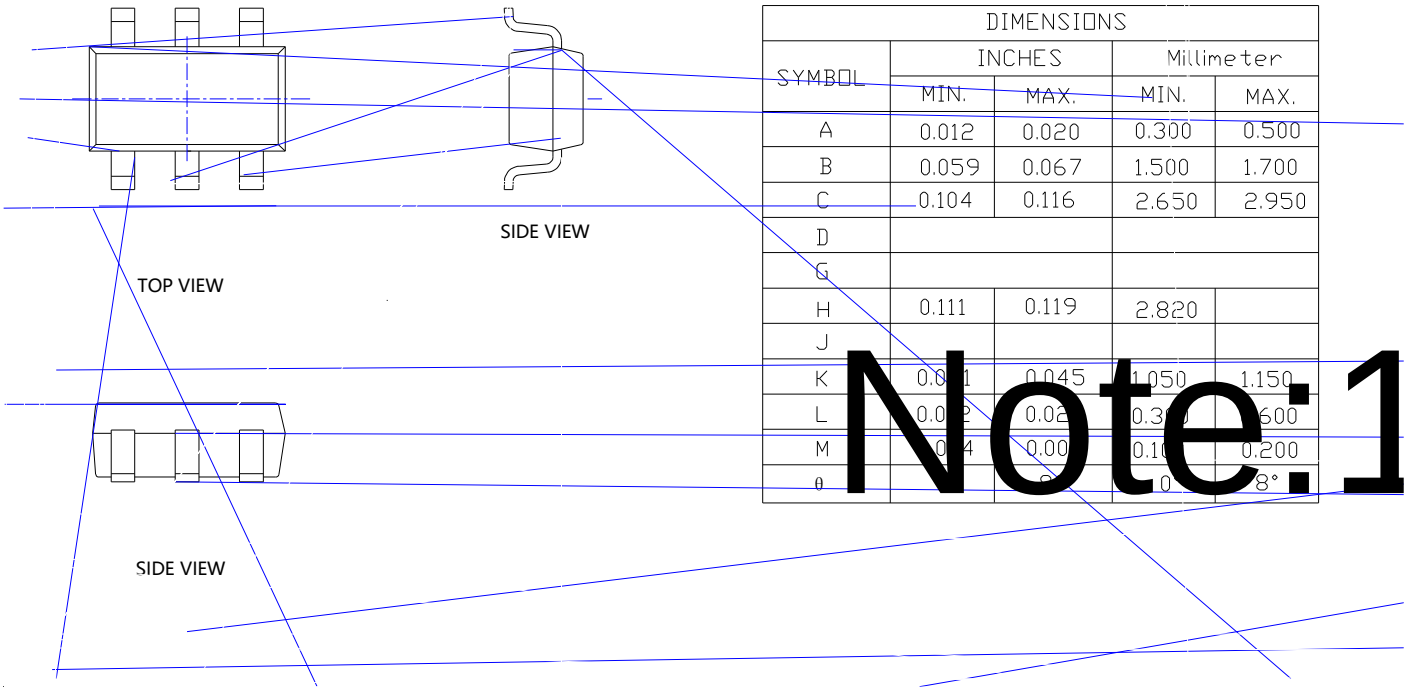



Figure 14. Safe Operation Area

## SOT-23-6L Package information




| DIMENSIONS | | | | |
|---|---|---|---|---|
| SYMBOL | INCHES | | Millimeter | |
| | MIN. | MAX. | MIN. | MAX. |
| A | 0.012 | 0.020 | 0.300 | 0.500 |
| B | 0.059 | 0.067 | 1.500 | 1.700 |
| C | 0.104 | 0.116 | 2.650 | 2.950 |
| D | | | | |
| G | | | | |
| H | 0.111 | 0.119 | 2.820 | |
| J | | | | |
| K | 0.041 | 0.045 | 1.050 | 1.150 |
| L | 0.012 | 0.020 | 0.300 | 0.600 |
| M | 0.004 | 0.008 | 0.100 | 0.200 |
| θ | | | 0° | 8° |

Note:1

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