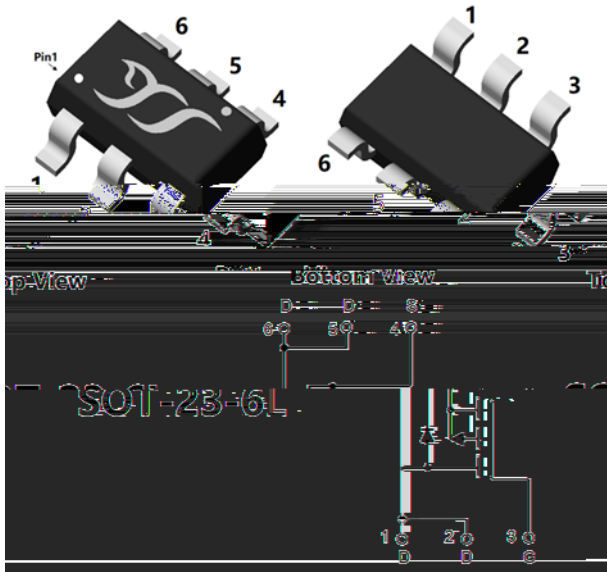




# YJJ06P03B

## 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 ( $T_A=25^{\circ}C$ unless otherwise noted)

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

### Thermal resistance

| Parameter   |              | Symbol | Typ | Max | Units         |
|---|--------------|--------|-----|-----|---------------|
| Thermal Resistance Junction-to-Ambient <sup>C</sup> | Steady-State | R      | 80  | 100 | $^{\circ}C/W$ |

### Ordering Information (Example)

| PREFERRED 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        |



# YJJ06P03B

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

| Parameter                       | Symbol       | Conditions                                      | Min | Typ  | Max       | Units |
|---------------------------------|--------------|---|-----|------|-----------|-------|
| <b>Static Parameter</b>         |              |   |     |      |           |       |
| 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        |       |
|                                 |              | $V_{DS}=-30V, V_{GS}=0V, T_J=150^\circ\text{C}$ | -   | -    | -100      |       |
| Gate-Body Leakage Current       | $I_{GSS}$    | $V_{GS}=\pm 20V, V_{DS}=0V$                     | -   | -    | $\pm 100$ | nA    |
| Gate Threshold Voltage          | $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=-$                          | -1  | -1.5 | -2.5      |       |



Typical Electrical and Thermal Characteristics Diagrams

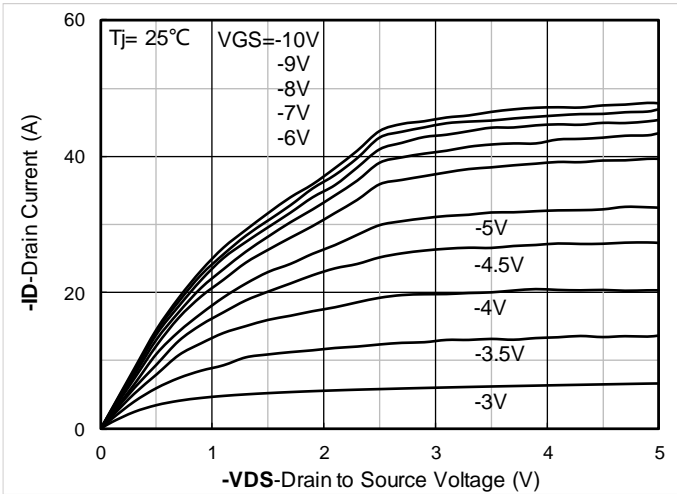


Figure 1. Output Characteristics

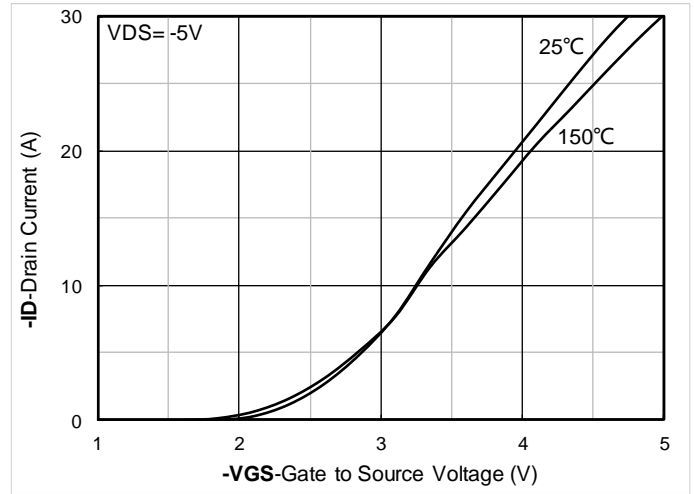


Figure 2. Transfer Characteristics

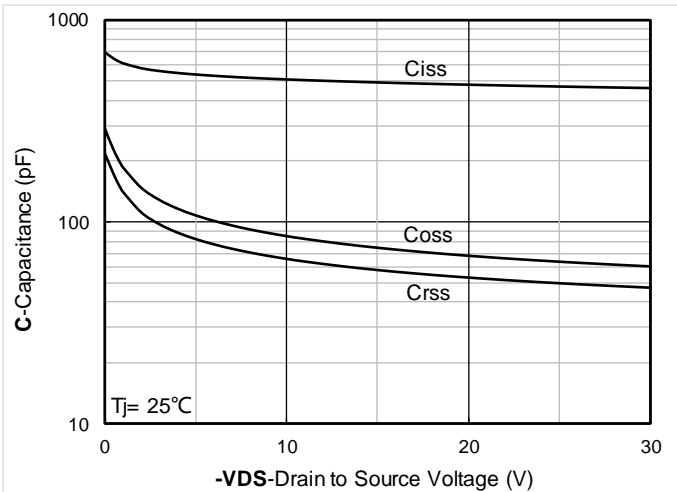


Figure 3. Capacitance Characteristics



Figure 4. Gate Charge

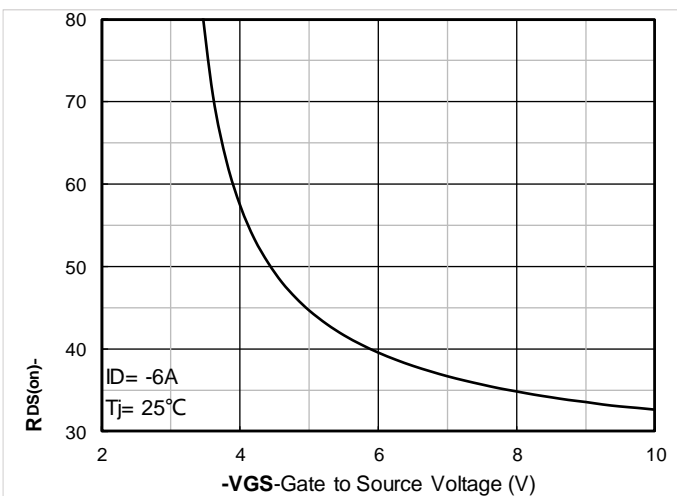


Figure 5. On-Resistance vs Gate to Source Voltage

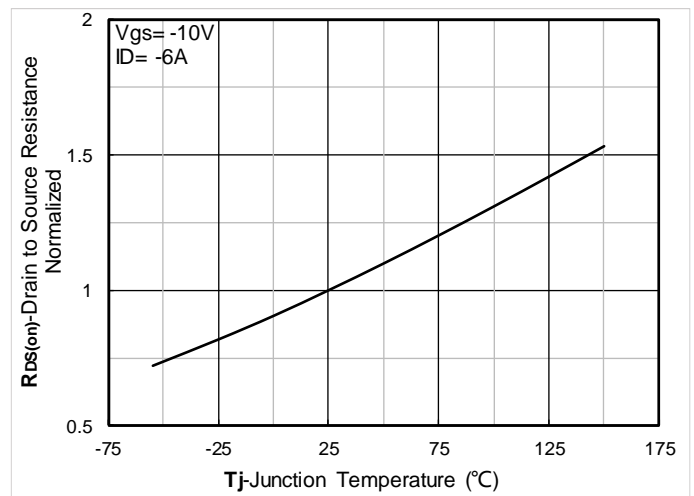


Figure 6. Normalized On-Resistance



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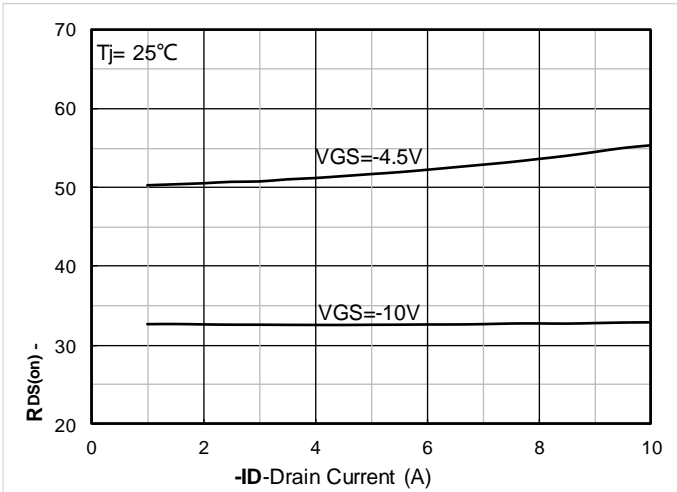


Figure 7. RDS(on) VS Drain Current

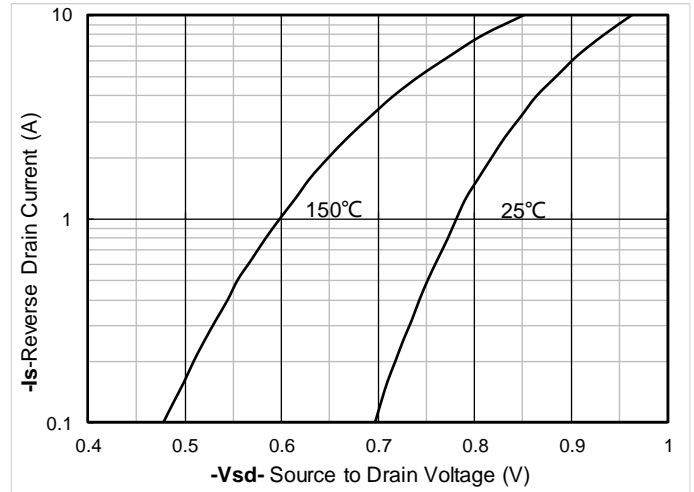


Figure 8. Forward characteristics of reverse diode

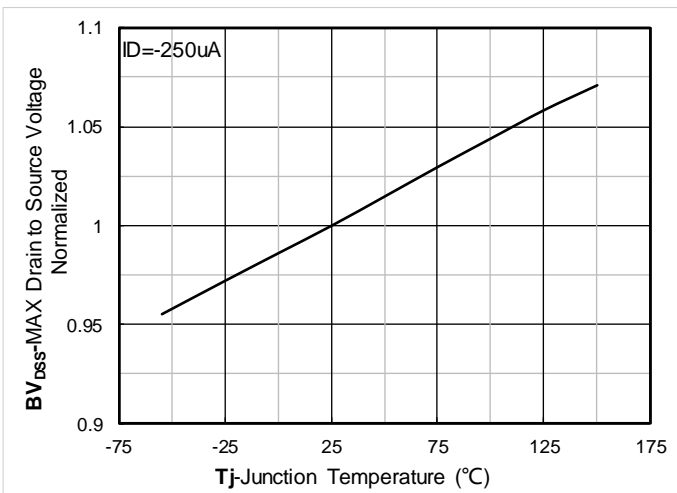


Figure 9. Normalized breakdown voltage

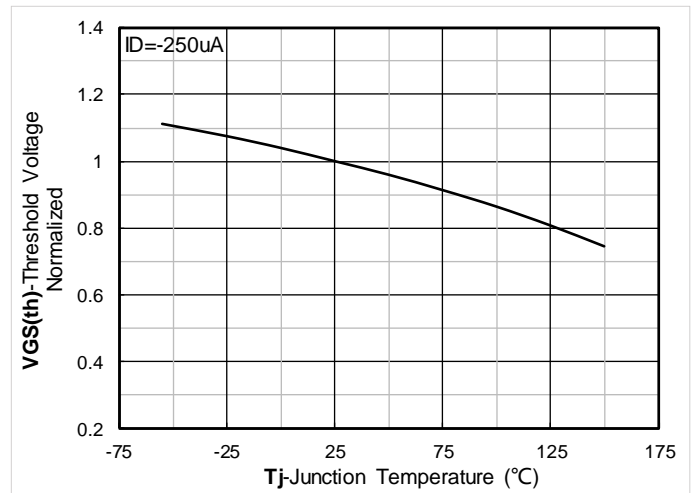


Figure 10. Normalized Threshold voltage

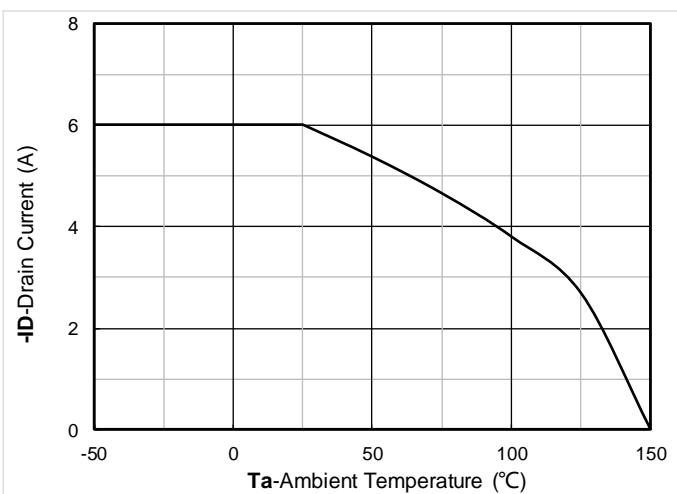


Figure 11. Current dissipation

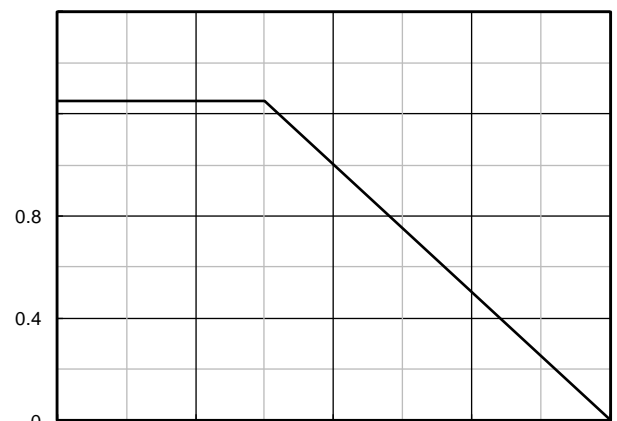


Figure 12. Power dissipation

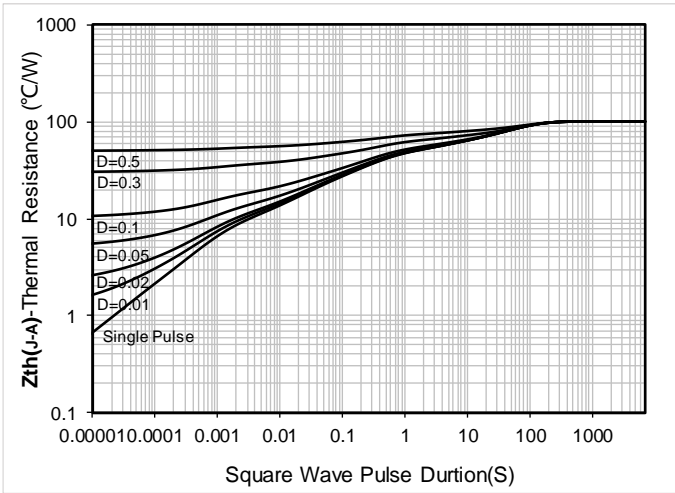


Figure 13. Maximum Transient Thermal Impedance

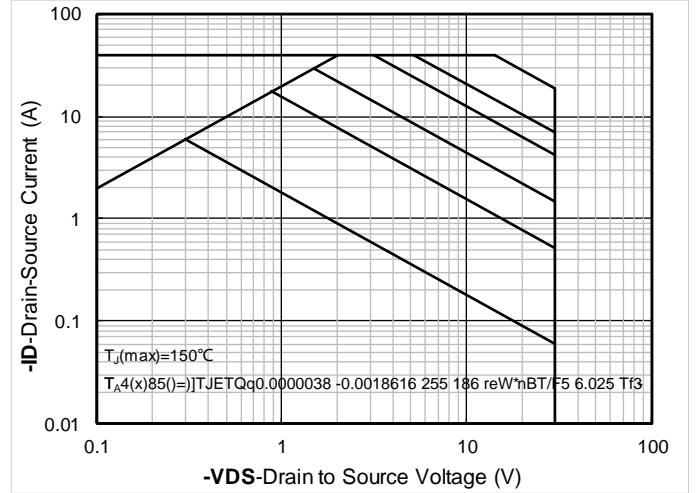
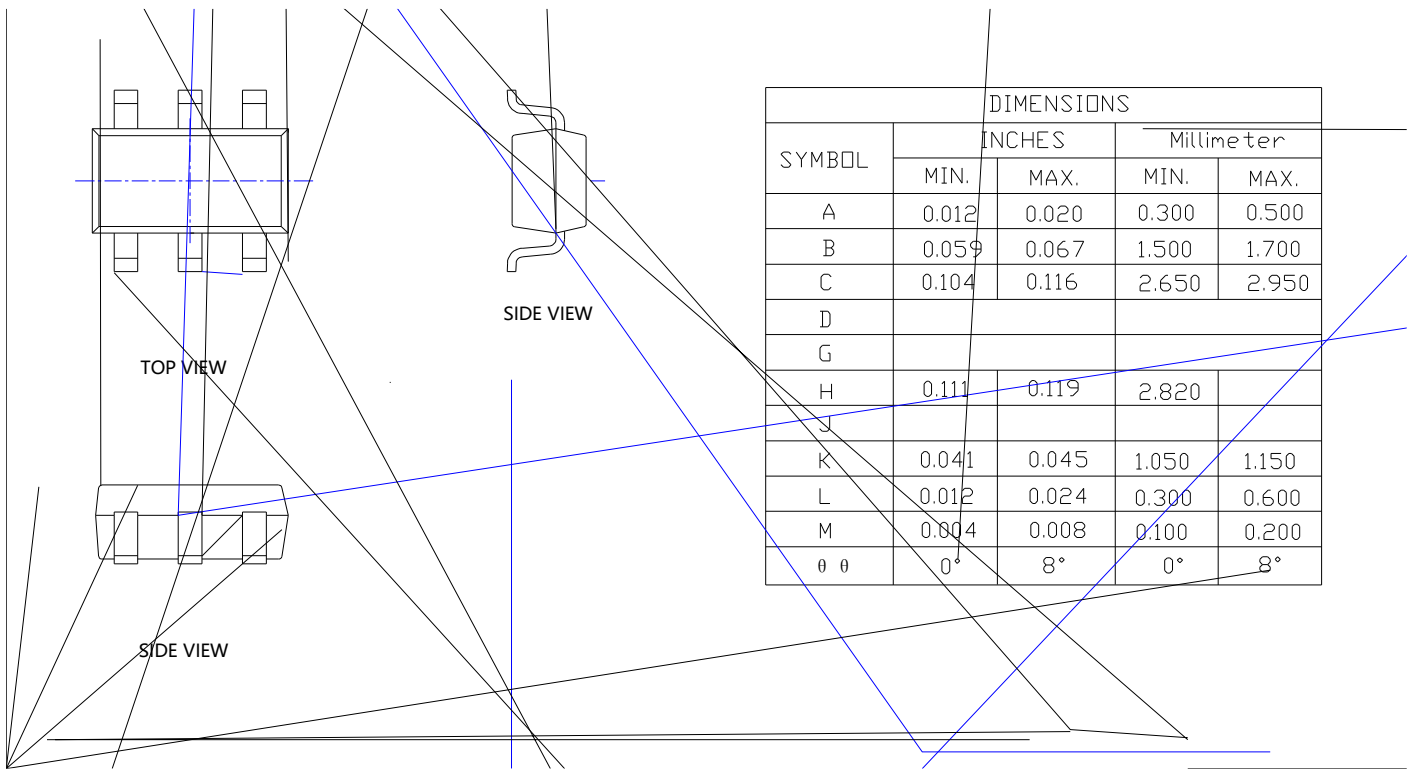


Figure 14. Safe Operation Area



# YJJ06P03B

## SOT-23-6L Package information





## YJJ06P03B

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