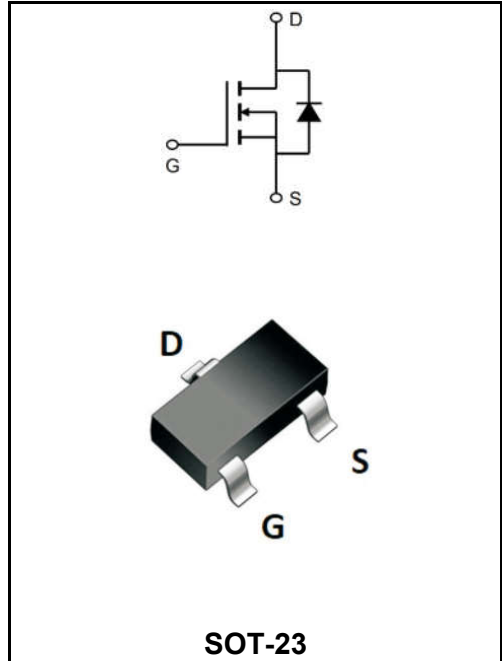


30V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

| | |
|----------------------------------------------------|------------------------------|
| I_D | 5.8A |
| V_{DSS} | 30V |
| R_{DS(on)-typ(@V_{GS}=10V)} | < 38mΩ (Type:29 mΩ) |



Application

- ◆ Lithium battery protection
- ◆ Wireless impact
- ◆ Mobile phone fast charging

Product Specification Classification

| Part Number | Package | Marking | Pack |
|-------------|---------|---------|--------------|
| YFW3404B | SOT-23 | 3404B | 3000PCS/Tape |

Maximum Ratings at T_c=25°C unless otherwise specified

| Characteristics | Symbols | Value | Units |
|-----------------------------------------------|----------------------------------------|-------------|-------------|
| Drain-Source Voltage | V_{DS} | 30 | V |
| Gate - Source Voltage | V_{GS} | ±20 | V |
| Continuous Drain Current T _A =25°C | I_D | 5.8 | A |
| Continuous Drain Current T _A =70°C | I_D | 2.6 | A |
| Pulsed Drain Current | I_{DM} | 1.6 | A |
| Power Dissipation T _A = 25°C | P_D | 1 | W |
| Thermal Resistance, Junction to Ambient | R_{θJA} | 125 | °C/W |
| Operating and Storage Temperature Range | T_J , T_{STG} | -55 to +150 | °C |

Maximum Ratings at Tc=25°C unless otherwise specified

| Characteristics | Test Condition | Symbols | Min | Typ | Max | Units |
|----------------------------------------------------------|--------------------------------------------------------|---------------------------|-----|-----|------|-----------|
| Drain-Source Breakdown Voltage | $V_{GS}=0V, I_D=250\mu A$ | V(BR)DSS | 30 | 32 | - | V |
| Zero Gate Voltage Drain Current | $V_{DS}=30V, V_{GS}=0V$ | I_{DSS} | - | - | 1.0 | μA |
| Gate to Body Leakage Current | $V_{GS}=\pm 20V, V_{DS}=0V$ | I_{GSS} | - | - | ±100 | nA |
| Gate -Threshold Voltage | $V_{DS}=V_{GS}, I_D=250\mu A$ | V_{GS(th)} | 1.2 | 1.5 | 2.5 | V |
| Static Drain-Source on-Resistance note2 | $V_{GS}=10V, I_D=4A$ | R_{DS(ON)} | - | 29 | 38 | mΩ |
| | $V_{GS}=4.5V, I_D=3A$ | | - | 45 | 65 | |
| Input Capacitance | $V_{DS}=15V$ $V_{GS}=0V$ $f=1.0MHz$ | C_{iss} | - | 233 | - | μF |
| Output Capacitance | | C_{oss} | - | 44 | - | |
| Reverse Transfer Capacitance | | C_{rss} | - | 33 | - | |
| Total Gate Charge | $V_{DS}=15V$ $V_{GS}=10V$ $I_D=2A$ | Q_g | - | 3 | - | nC |
| Gate-Source Charge | | Q_{gs} | - | 0.5 | - | |
| Gate-Drain("Miller") Charge | | Q_{gd} | - | 0.8 | - | |
| Turn-on delay time | $V_{DS}=15V, I_D=4A,$ $R_{GEN}=3\Omega, V_{GS}=10V$ | t_{d(on)} | - | 4 | - | ns |
| Turn-on Rise Time | | T_r | - | 2.1 | - | |
| Turn-Off Delay Time | | t_{d(OFF)} | - | 15 | - | |
| Turn-Off Fall Time | | t_f | - | 3.2 | - | |
| Maximum Continuous Drain to Source Diode Forward Current | | I_S | - | - | 4 | A |
| Maximum Pulsed Drain to Source Diode Forward Current | | I_{SM} | - | - | 16 | A |
| Drain to Source Diode Forward Voltage | $V_{GS}=0V, I_S=4A$ | V_{SD} | - | - | 1.2 | V |

Note :

- 1、 The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2、 The data tested by pulsed , pulse width $\cong 300\mu s$, duty cycle $\cong 2\%$
- 3、 The power dissipation is limited by 150°C junction temperature
- 4、 The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation.

Ratings and Characteristic Curves

Typical Characteristics

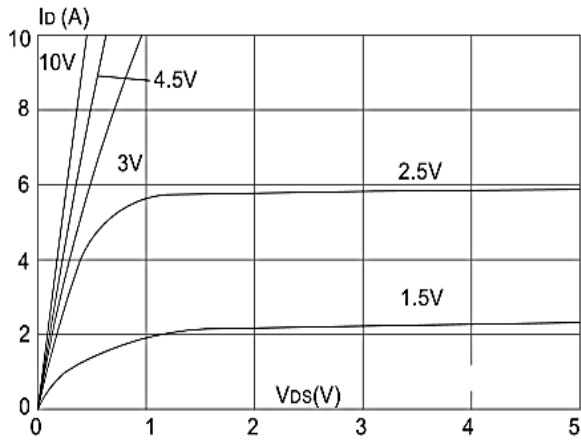


Figure1: Output Characteristics

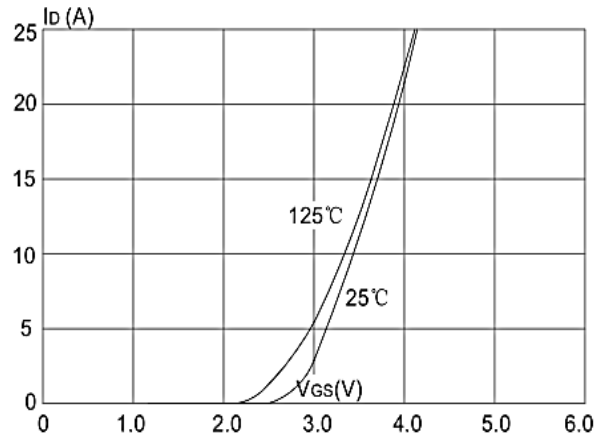


Figure 2: Typical Transfer Characteristics

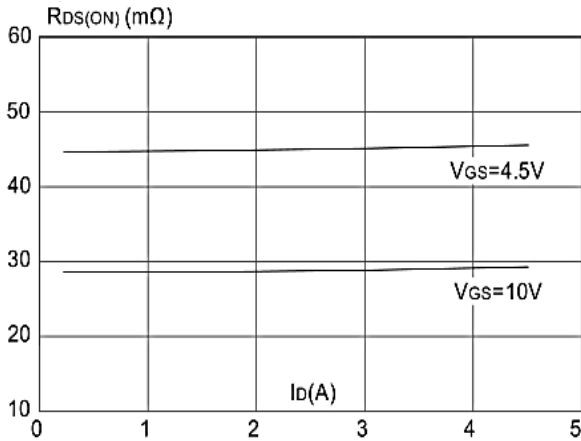


Figure 3: On-resistance vs. Drain Current

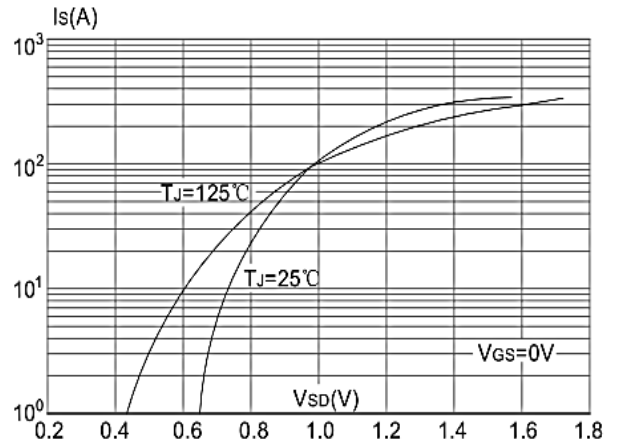


Figure 4: Body Diode Characteristics

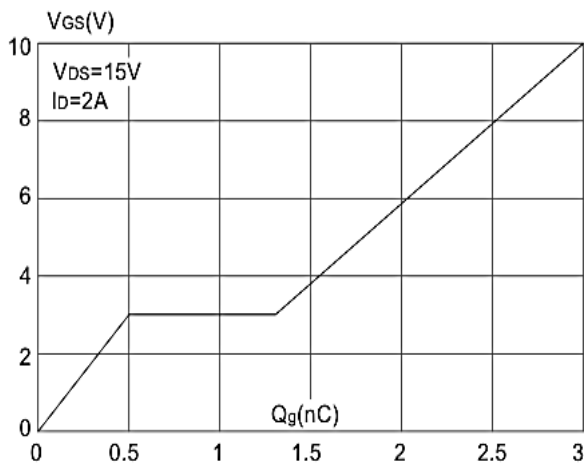


Figure 5: Gate Charge Characteristics

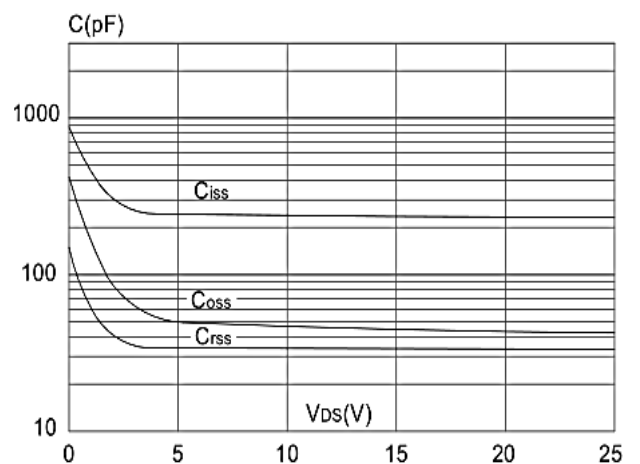


Figure 6: Capacitance Characteristics

Ratings and Characteristic Curves

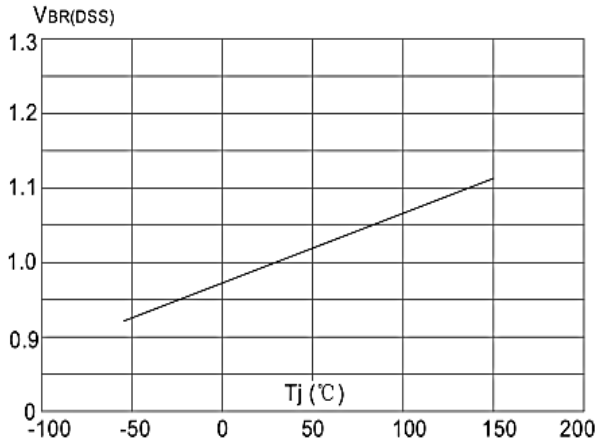


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

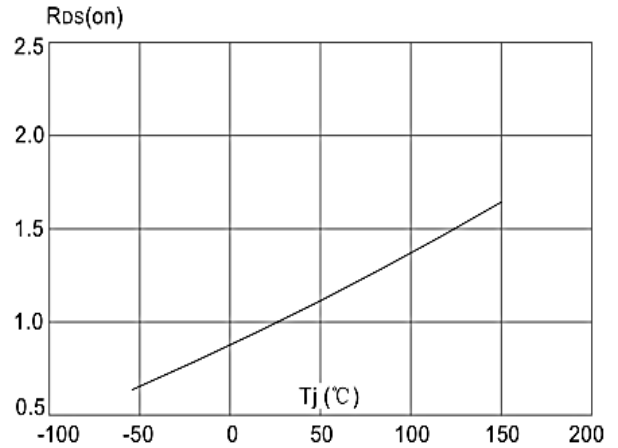


Figure 8: Normalized on Resistance vs. Junction Temperature

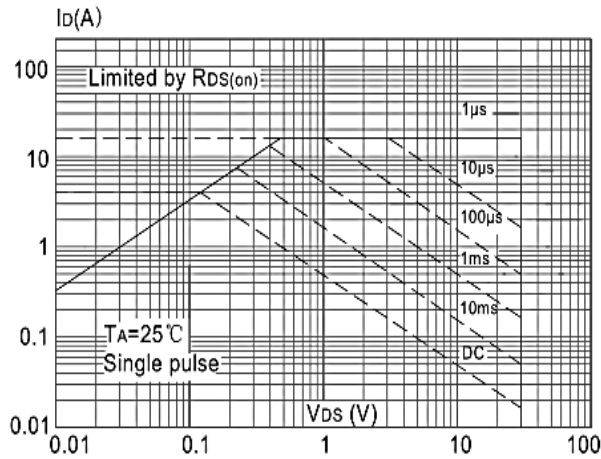


Figure 9: Maximum Safe Operating Area vs. Case Temperature

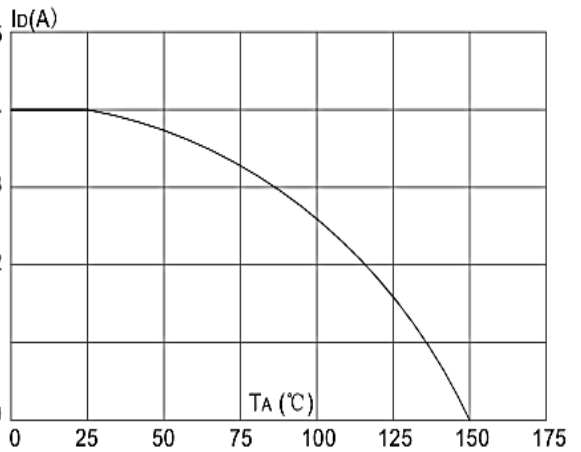


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

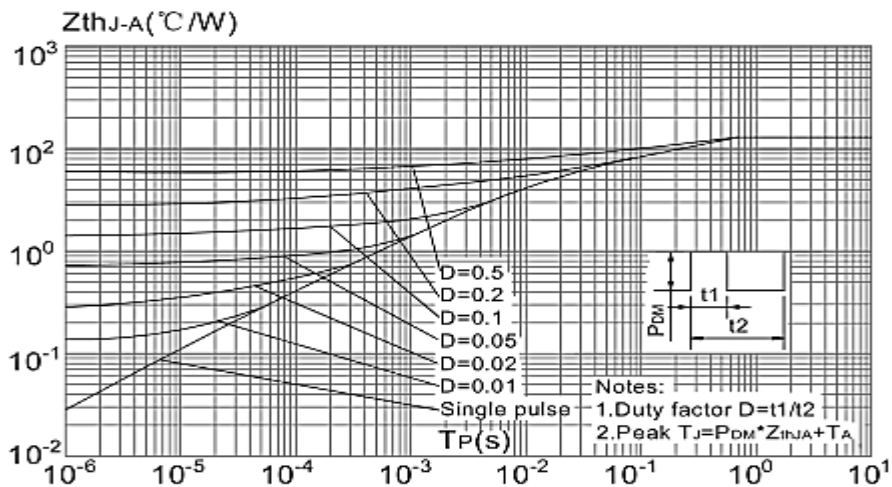
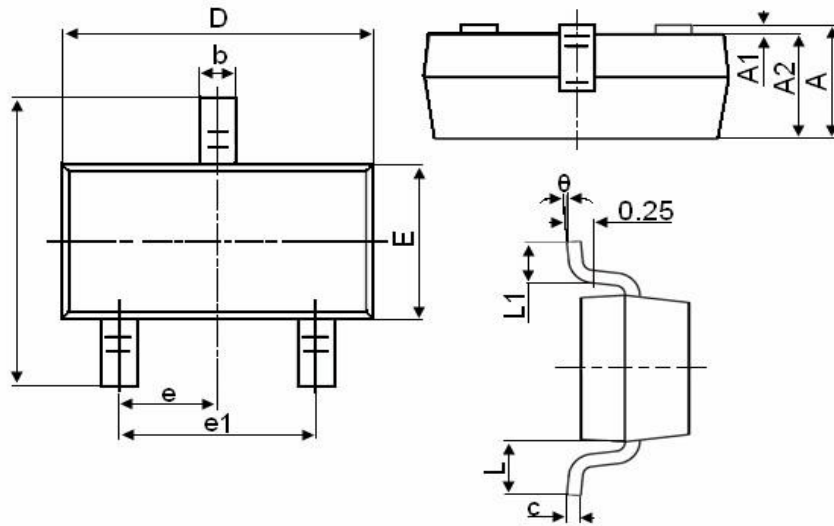


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

SOT-23



| Symbol | Dimensions in Millimeters | |
|--------|---------------------------|-------|
| | MIN. | MAX. |
| A | 0.900 | 1.150 |
| A1 | 0.000 | 0.100 |
| A2 | 0.900 | 1.050 |
| b | 0.300 | 0.500 |
| c | 0.080 | 0.150 |
| D | 2.800 | 3.000 |
| E | 1.200 | 1.400 |
| E1 | 2.250 | 2.550 |
| e | 0.950TYP | |
| e1 | 1.800 | 2.000 |
| L | 0.550REF | |
| L1 | 0.300 | 0.500 |
| θ | 0° | 8° |