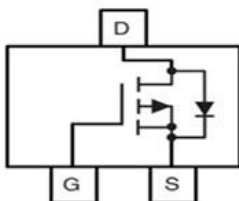


**SOT-23-3L -20V P Channel Enhancement 沟道增强型  
MOS Field Effect Transistor 场效应管**



■ **Absolute Maximum Ratings 最大额定值**

| Characteristic 特性参数                    | Symbol 符号                            | Rat 额定值  | Unit 单位                   |
|----------------------------------------|--------------------------------------|----------|---------------------------|
| Drain-Source Voltage 漏极-源极电压           | $BV_{DSS}$                           | -20      | V                         |
| Gate- Source Voltage 栅极-源极电压           | $V_{GS}$                             | $\pm 10$ | V                         |
| Drain Current (continuous)漏极电流-连续      | $I_D$ (at $T_A = 25^\circ\text{C}$ ) | -3       | A                         |
| Drain Current (pulsed)漏极电流-脉冲          | $I_{DM}$                             | -18      | A                         |
| Total Device Dissipation 总耗散功率         | $P_D$ (at $T_A = 25^\circ\text{C}$ ) | 700      | mW                        |
| Thermal Resistance Junction-Ambient 热阻 | $R_{\theta JA}$                      | 178      | $^\circ\text{C}/\text{W}$ |
| Junction/Storage Temperature 结温/储存温度   | $T_J, T_{stg}$                       | -55~150  | $^\circ\text{C}$          |

■ **Device Marking 产品字标**

**FSS2301=A1SHB**

**■ Electrical Characteristics 电特性**

 (T<sub>A</sub>=25℃ unless otherwise noted 如无特殊说明, 温度为 25℃)

| Characteristic<br>特性参数                                                                                                                                                                                   | Symbol<br>符号        | Min<br>最小值 | Typ<br>典型值       | Max<br>最大值       | Unit<br>单位 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------|------------------|------------------|------------|
| Drain-Source Breakdown Voltage<br>漏极-源极击穿电压(I <sub>D</sub> = -250uA, V <sub>GS</sub> =0V)                                                                                                                | BV <sub>DSS</sub>   | -20        | —                | —                | V          |
| Gate Threshold Voltage<br>栅极开启电压(I <sub>D</sub> = -250uA, V <sub>GS</sub> = V <sub>DS</sub> )                                                                                                            | V <sub>GS(th)</sub> | -0.4       | -0.6             | -1               | V          |
| Zero Gate Voltage Drain Current<br>零栅压漏极电流(V <sub>GS</sub> =0V, V <sub>DS</sub> = -20V)                                                                                                                  | I <sub>DSS</sub>    | —          | —                | 1                | uA         |
| Gate Body Leakage<br>栅极漏电流(V <sub>GS</sub> =±10V, V <sub>DS</sub> =0V)                                                                                                                                   | I <sub>GSS</sub>    | —          | —                | ±100             | nA         |
| Static Drain-Source On-State Resistance<br>静态漏源导通电阻(I <sub>D</sub> = -3A, V <sub>GS</sub> = -4.5V)<br>(I <sub>D</sub> = -2A, V <sub>GS</sub> = -2.5V)<br>(I <sub>D</sub> = -1A, V <sub>GS</sub> = -1.8V) | R <sub>DS(ON)</sub> | —          | 81<br>109<br>152 | 94<br>127<br>187 | mΩ         |
| Diode Forward Voltage Drop<br>内附二极管正向压降(I <sub>SD</sub> = -2A, V <sub>GS</sub> =0V)                                                                                                                      | V <sub>SD</sub>     | —          | —                | -1.2             | V          |
| Input Capacitance 输入电容<br>(V <sub>GS</sub> =0V, V <sub>DS</sub> = -10V, f=1MHz)                                                                                                                          | C <sub>ISS</sub>    | —          | 327              | —                | pF         |
| Common Source Output Capacitance<br>共源输出电容(V <sub>GS</sub> =0V, V <sub>DS</sub> = -10V, f=1MHz)                                                                                                          | C <sub>OSS</sub>    | —          | 62               | —                | pF         |
| Reverse Transfer Capacitance<br>反馈电容(V <sub>GS</sub> =0V, V <sub>DS</sub> = -10V, f=1MHz)                                                                                                                | C <sub>RSS</sub>    | —          | 55               | —                | pF         |
| Total Gate Charge 栅极电荷密度<br>(V <sub>DS</sub> = -10V, I <sub>D</sub> = -2A, V <sub>GS</sub> = -4.5V)                                                                                                      | Q <sub>g</sub>      | —          | 4.5              | —                | nC         |
| Gate Source Charge 栅源电荷密度<br>(V <sub>DS</sub> = -10V, I <sub>D</sub> = -2A, V <sub>GS</sub> = -4.5V)                                                                                                     | Q <sub>gs</sub>     | —          | 0.85             | —                | nC         |
| Gate Drain Charge 栅漏电荷密度<br>(V <sub>DS</sub> = -10V, I <sub>D</sub> = -2A, V <sub>GS</sub> = -4.5V)                                                                                                      | Q <sub>gd</sub>     | —          | 1.4              | —                | nC         |
| Turn-ON Delay Time 开启延迟时间<br>(V <sub>DS</sub> = -10V I <sub>D</sub> = -1A, R <sub>GEN</sub> =2.5 Ω, V <sub>GS</sub> = -4.5V)                                                                             | t <sub>d(on)</sub>  | —          | 6                | —                | ns         |
| Turn-ON Rise Time 开启上升时间<br>(V <sub>DS</sub> = -10V I <sub>D</sub> = -1A, R <sub>GEN</sub> =2.5 Ω, V <sub>GS</sub> = -4.5V)                                                                              | t <sub>r</sub>      | —          | 30               | —                | ns         |
| Turn-OFF Delay Time 关断延迟时间<br>(V <sub>DS</sub> = -10V I <sub>D</sub> = -1A, R <sub>GEN</sub> =2.5 Ω, V <sub>GS</sub> = -4.5V)                                                                            | t <sub>d(off)</sub> | —          | 45               | —                | ns         |
| Turn-OFF Fall Time 关断下降时间<br>(V <sub>DS</sub> = -10V I <sub>D</sub> = -1A, R <sub>GEN</sub> =2.5 Ω, V <sub>GS</sub> = -4.5V)                                                                             | t <sub>f</sub>      | —          | 46               | —                | ns         |

■ Typical Characteristic Curve 典型特性曲线

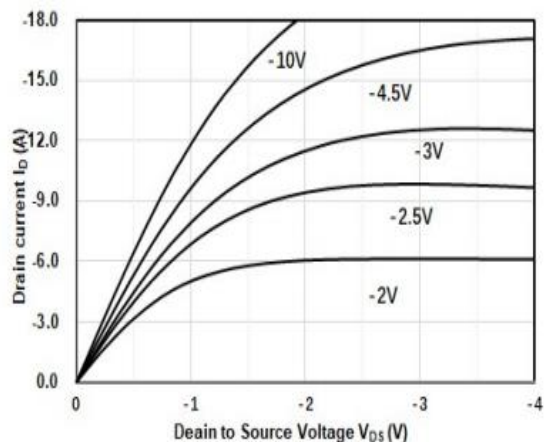


Figure 1: Output Characteristics

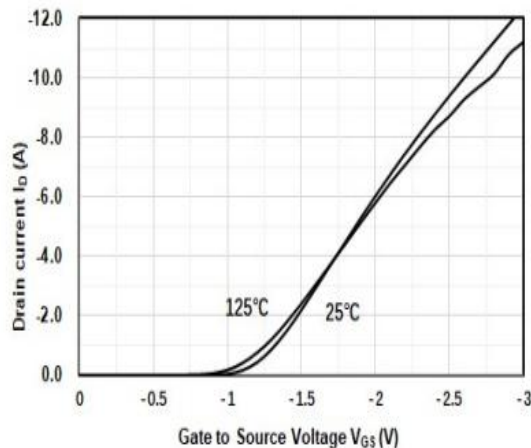


Figure 2: Transfer Characteristics

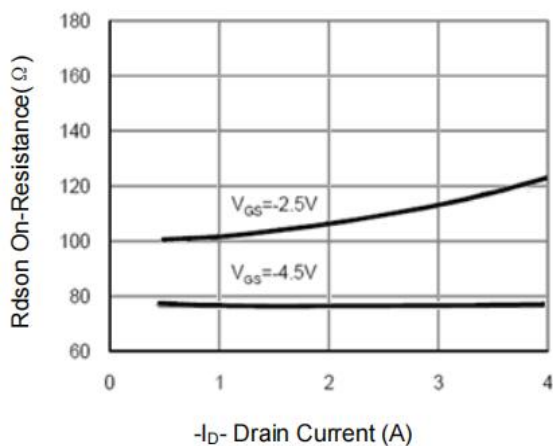


Figure 3: On-Resistance vs. Drain Current

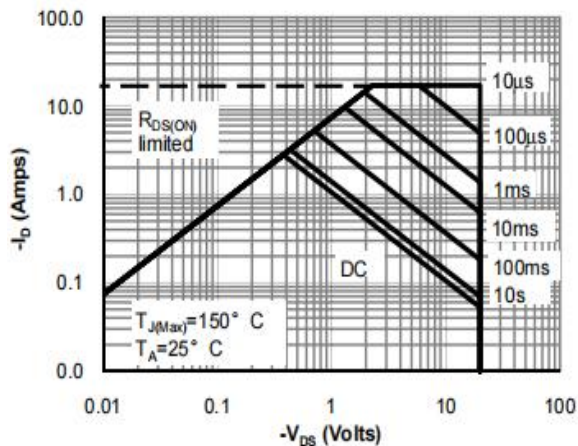


Figure 4: Safe Operating Area

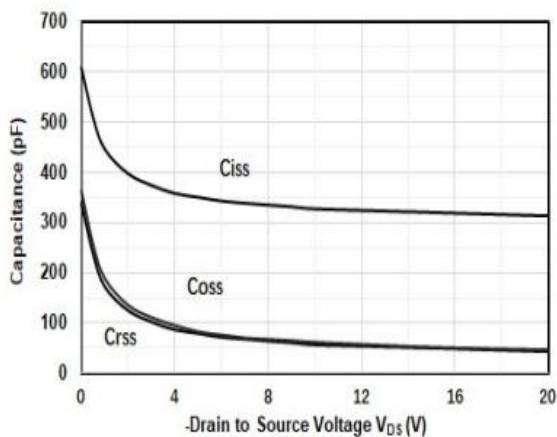


Figure 5: Capacitance Characteristics

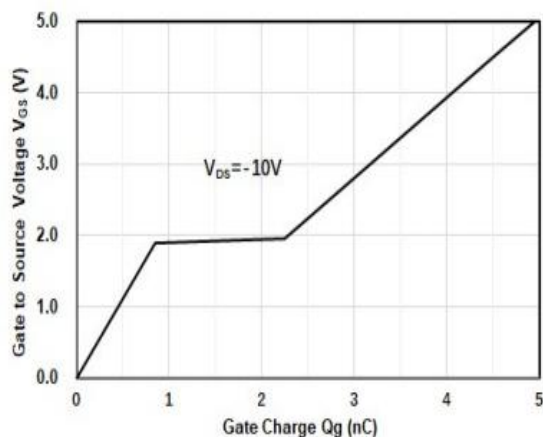
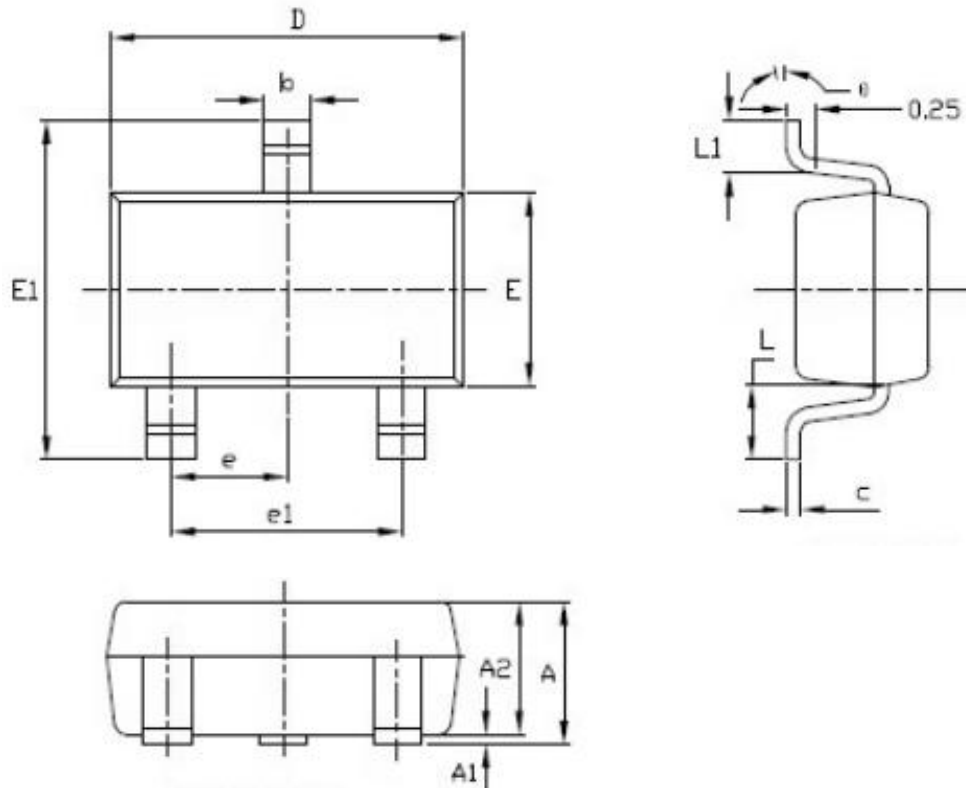


Figure 6: Gate-Charge Characteristics

■ **Dimension 外形封装尺寸**



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 1.050                     | 1.250 | 0.041                | 0.049 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 1.050                     | 1.150 | 0.041                | 0.045 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.100                     | 0.200 | 0.004                | 0.008 |
| D      | 2.820                     | 3.020 | 0.111                | 0.119 |
| E      | 1.500                     | 1.700 | 0.059                | 0.067 |
| E1     | 2.650                     | 2.950 | 0.104                | 0.116 |
| e      | 0.900                     | 1.00  | 0.035                | 0.039 |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.450                     | 0.650 | 0.018                | 0.026 |
| L1     | 0.300                     | 0.600 | 0.012                | 0.024 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |