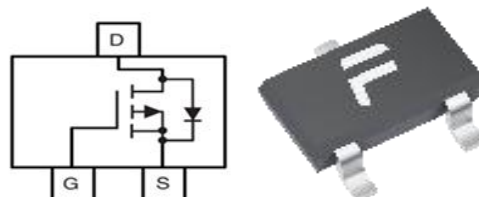


**SOT-23 -60V P Channel Enhancement 沟道增强型  
MOS Field Effect Transistor 场效应管**



■ **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           | $BV_{DSS}$                     | -60      | V            |
| Gate- Source Voltage 栅极-源极电压           | $V_{GS}$                       | $\pm 20$ | V            |
| Drain Current (continuous)漏极电流-连续      | $I_D$ (at $T_A = 25^\circ C$ ) | -170     | mA           |
| Drain Current (pulsed)漏极电流-脉冲          | $I_{DM}$                       | -1.2     | A            |
| Total Device Dissipation 总耗散功率         | $P_D$ (at $T_A = 25^\circ C$ ) | 225      | mW           |
| Thermal Resistance Junction-Ambient 热阻 | $R_{\theta JA}$                | 625      | $^\circ C/W$ |
| Junction/Storage Temperature 结温/储存温度   | $T_J, T_{stg}$                 | -55~150  | $^\circ C$   |

■ **Device Marking 产品字标**

**BSS84=PD9**

**Electrical Characteristics 电特性**

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

| 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>   | -60        | —          | —          | 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> | -0.9       | -1.4       | -2         | V          |
| Zero Gate Voltage Drain Current<br>零栅压漏极电流(V <sub>GS</sub> =0V, V <sub>DS</sub> = -60V)                                                                    | I <sub>DSS</sub>    | —          | —          | 1          | uA         |
| Gate Body Leakage<br>栅极漏电流(V <sub>GS</sub> =±20V, 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> = -150mA, V <sub>GS</sub> = -10V)<br>(I <sub>D</sub> = -150mA, V <sub>GS</sub> = -4.5V) | R <sub>DS(ON)</sub> | —          | 3.3<br>3.5 | 8<br>10    | Ω          |
| Diode Forward Voltage Drop<br>内附二极管正向压降 (I <sub>SD</sub> = -170mA, 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> = -30V, f=1MHz)                                                                            | C <sub>ISS</sub>    | —          | 43         | —          | pF         |
| Common Source Output Capacitance<br>共源输出电容(V <sub>GS</sub> =0V, V <sub>DS</sub> = -30V, f=1MHz)                                                            | C <sub>OSS</sub>    | —          | 3          | —          | pF         |
| Reverse Transfer Capacitance<br>反馈电容(V <sub>GS</sub> =0V, V <sub>DS</sub> = -30V, f=1MHz)                                                                  | C <sub>RSS</sub>    | —          | 1.8        | —          | pF         |
| Total Gate Charge 栅极电荷密度<br>(V <sub>DS</sub> = -30V, I <sub>D</sub> = -150mA, V <sub>GS</sub> =10V)                                                        | Q <sub>g</sub>      | —          | 1.7        | —          | nC         |
| Gate Source Charge 栅源电荷密度<br>(V <sub>DS</sub> = -30V, I <sub>D</sub> = -150mA, V <sub>GS</sub> =10V)                                                       | Q <sub>gs</sub>     | —          | 0.57       | —          | nC         |
| Gate Drain Charge 栅漏电荷密度<br>(V <sub>DS</sub> = -30V, I <sub>D</sub> = -150mA, V <sub>GS</sub> =10V)                                                        | Q <sub>gd</sub>     | —          | 0.25       | —          | nC         |
| Turn-ON Delay Time 开启延迟时间<br>(V <sub>DS</sub> =-30V I <sub>D</sub> =-150mA, R <sub>GEN</sub> =3 Ω, V <sub>GS</sub> =-10V)                                  | t <sub>d(on)</sub>  | —          | 9          | —          | ns         |
| Turn-ON Rise Time 开启上升时间<br>(V <sub>DS</sub> =-30V I <sub>D</sub> =-150mA, R <sub>GEN</sub> =3 Ω, V <sub>GS</sub> =-10V)                                   | t <sub>r</sub>      | —          | 19         | —          | ns         |
| Turn-OFF Delay Time 关断延迟时间<br>(V <sub>DS</sub> =-30V I <sub>D</sub> =-150mA, R <sub>GEN</sub> =3 Ω, V <sub>GS</sub> =-10V)                                 | t <sub>d(off)</sub> | —          | 15         | —          | ns         |
| Turn-OFF Fall Time 关断下降时间<br>(V <sub>DS</sub> =-30V I <sub>D</sub> =-150mA, R <sub>GEN</sub> =3 Ω, V <sub>GS</sub> =-10V)                                  | t <sub>f</sub>      | —          | 77         | —          | ns         |

## ■ Typical Characteristic Curve 典型特性曲线

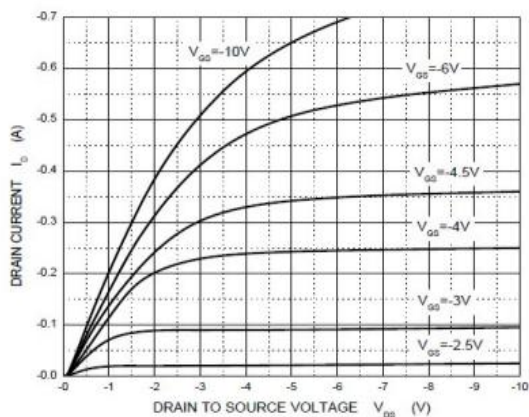


Figure 1: Output Characteristics

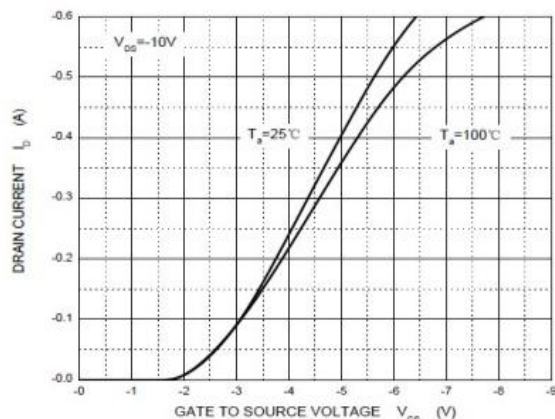


Figure 2: Transfer Characteristics

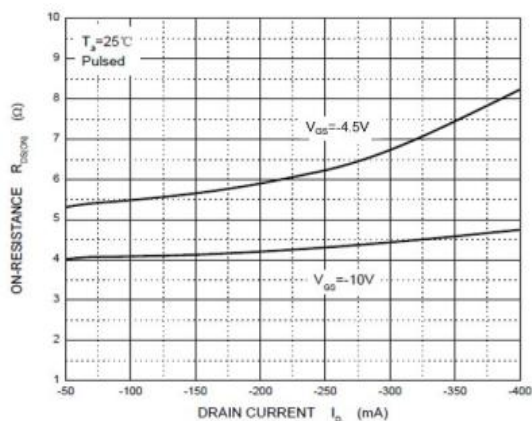


Figure 3: On-Resistance vs. Drain Current

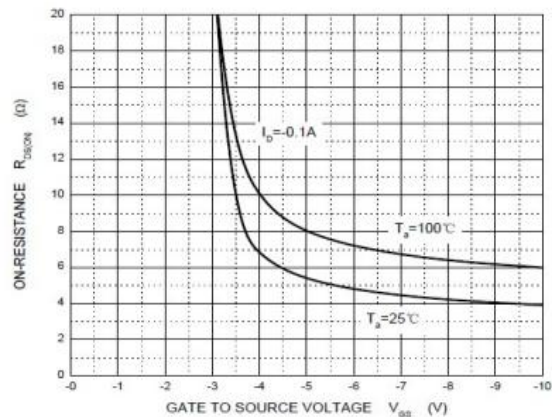


Figure 4: On-Resistance vs.  $V_{GS}$

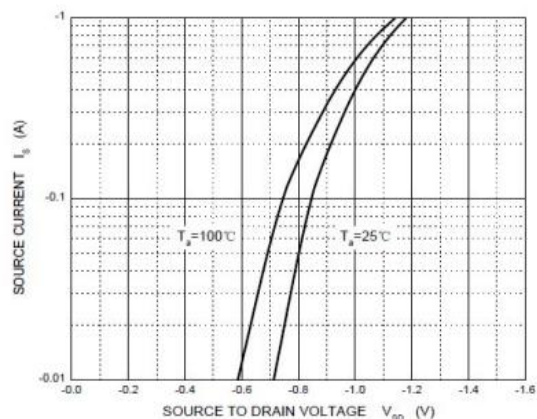


Figure 5: Diode Characteristics

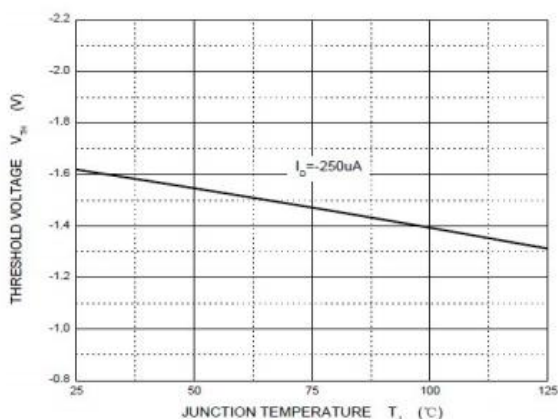
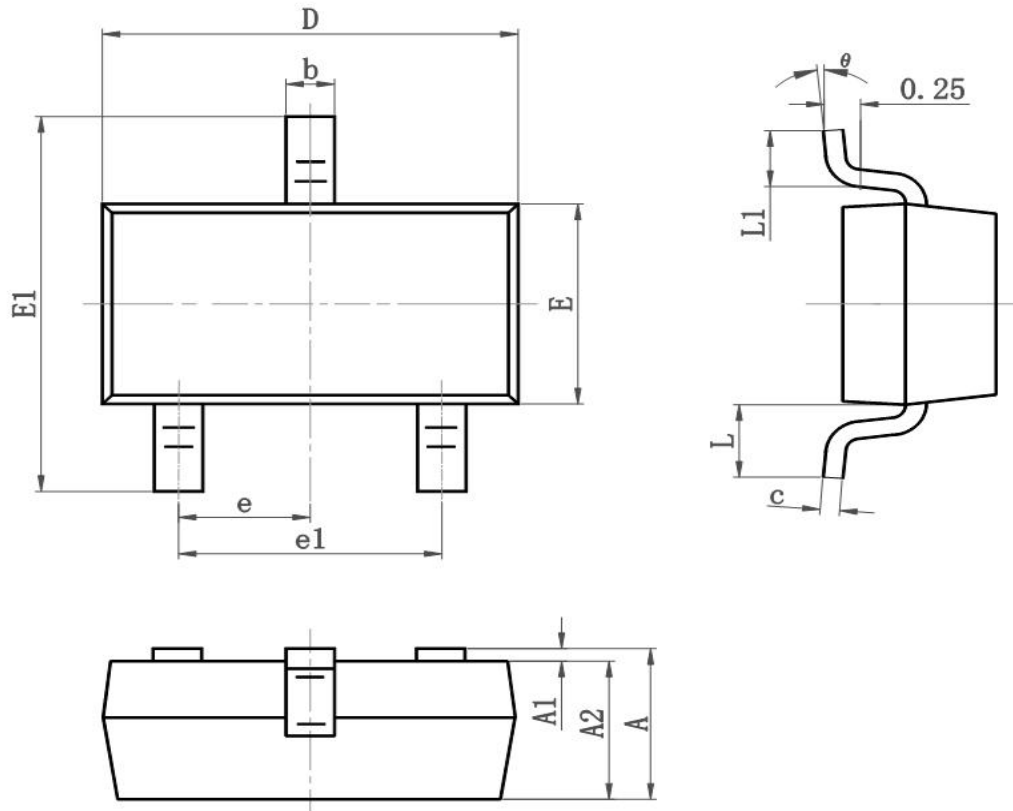


Figure 6: Threshold Voltage vs.  $T_J$

■ Dimension 外形封装尺寸



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.050 | 0.035                | 0.041 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.800                     | 3.000 | 0.110                | 0.118 |
| E      | 1.200                     | 1.400 | 0.050                | 0.055 |
| E1     | 2.250                     | 2.550 | 0.089                | 0.100 |
| e      | 0.900                     | 1.00  | 0.035                | 0.039 |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.500                     | 0.600 | 0.020                | 0.024 |
| L1     | 0.300                     | 0.500 | 0.012                | 0.020 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |