100V N Channel Enhancement Mode MOSFET 100 V N 沟道增强型 MOS 管

**VDS= 100V**

**RDS(ON), Vgs@10V, Ids@1.0A = 270mΩ**

**RDS(ON), Vgs@4.5V, Ids@0.5A = 340mΩ**

**Features 特性**

Advanced trench process technology 高级的加工技术

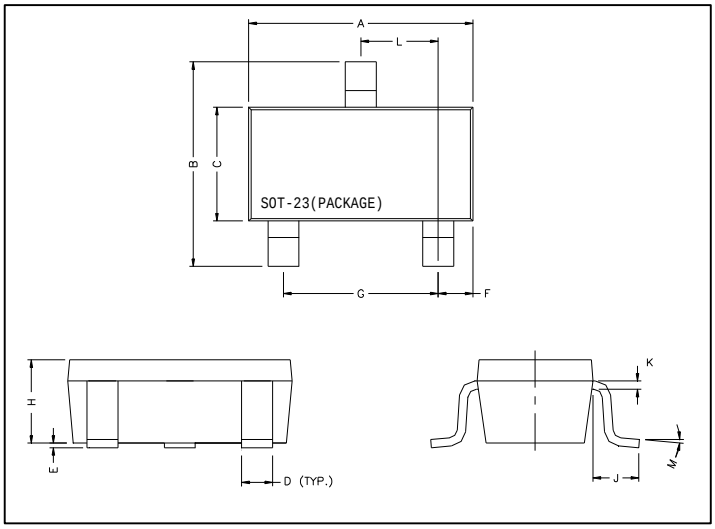
High Density Cell Design For Ultra Low OnResistance

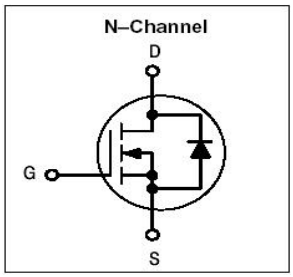
极低的导通电阻高密度的单元设计

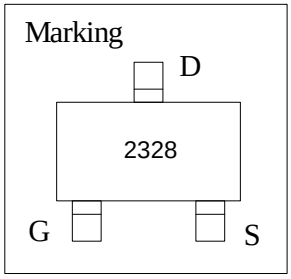
Improved ShootThrough FOM 改进的成型工艺

Package Dimensions 封装尺寸及外形图

Package Dimensions 封装尺寸及外形图




| REF. | Millimeter | | REF. | Millimeter | |
|---|---|---|---|---|---|
| | Min. | Max. | | Min. | Max. |
| A | 2.70 | 3.10 | G | 1.90 REF. | |
| B | 2.40 | 2.80 | H | 1.00 | 1.30 |
| C | 1.40 | 1.60 | K | 0.10 | 0.20 |
| D | 0.35 | 0.50 | J | 0.40 | - |
| E | 0 | 0.10 | L | 0.85 | 1.15 |
| F | 0.45 | 0.55 | M | 0° | 10° |

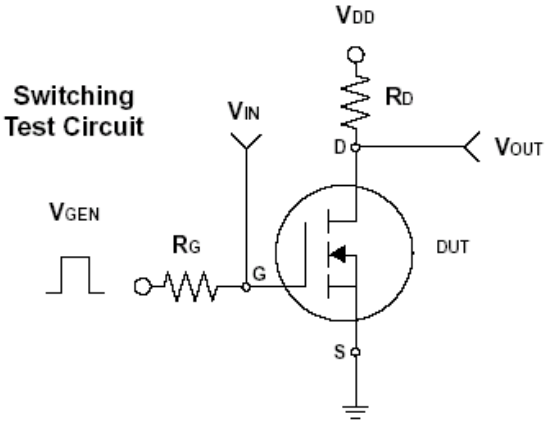
Maximum Ratings and Thermal Characteristics (TA = 25oC unless otherwise noted) 25 °C 极限参数和热特性

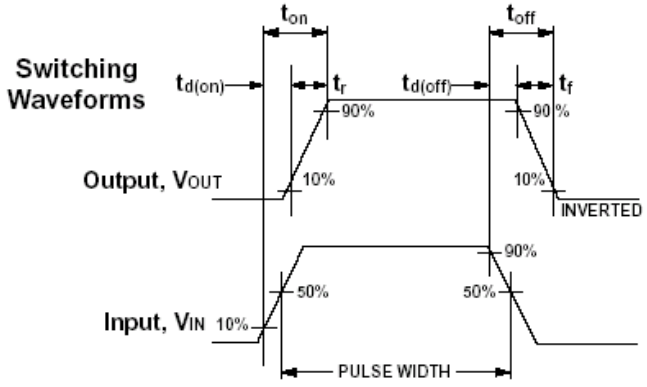
| **Parameter 极限参数** | | **Symbol 符号** | **Limit 范围** | **Unit 单位** |
|---|---|---|---|---|
| DrainSource Voltage 漏源电压 | | $V_{DS}$ | 100 | V |
| GateSource Voltage 栅源电压 | | $V_{GS}$ | ± 20 | |
| Continuous Drain Current 连续漏极电流 | | $I_D$ | 1.2 | A |
| Pulsed Drain Current 脉冲漏极电流 | | $I_{DM}$ | 5 | |
| Maximum Power Dissipation 最大耗散功率 | TA = 25°C | $P_D$ | 1 | W |
| | TA = 75°C | | 0.5 | |
| Operating Junction and Storage Temperature Range 使用及储存温度 | | $T_J$, $T_{stg}$ | -55 to 150 | °C |
| JunctiontoAmbient Thermal Resistance (PCB mounted) 结环热阻 | | $R_{\theta JA}$ | 125 | °C/W |

## ELECTRICAL CHARACTERISTICS 一般电气特性

| Parameter 参数 | 符号 | Test Condition 测试条件 | 最小值 | 典型值 | 最大值 | 单位 |
|---|---|---|---|---|---|---|
| **Static 静态参数** | | | | | | |
| DrainSource Breakdown Voltage 漏源击穿电压 | $BV_{DSS}$ | $V_{GS}$ = 0V, $I_D$ = 250uA | 100 | | | V |
| DrainSource OnState Resistance 漏源导通电阻 | $R_{DS(on)}$ | $V_{GS}$ = 4.5V, $I_D$ = 0.5A | | 275 | 340 | mΩ |
| DrainSource OnState Resistance 漏源导通电阻 | $R_{DS(on)}$ | $V_{GS}$ = 10V, $I_D$ = 1.0A | | 230 | 270 | |
| Gate Threshold Voltage 开启电压 | $V_{GS(th)}$ | $V_{DS}$ =$V_{GS}$, $I_D$ = 250uA | 1.5 | 2.5 | 3.5 | V |
| Zero Gate Voltage Drain Current 零栅压漏极电流 | $I_{DSS}$ | $V_{DS}$ = 60V, $V_{GS}$ = 0V | | | 1 | uA |
| Gate Body Leakage 漏极短路时截止栅电流 | $I_{GSS}$ | $V_{GS}$ = ± 20V, $V_{DS}$ = 0V | | | ±100 | nA |
| Forward Transconductance 正向跨导 | $g_{fs}$ | $V_{DS}$ = 5V, $I_D$ = 1A | | 2.4 | | S |
| **Dynamic 动态参数** | | | | | | |
| Total Gate Charge 栅极总电荷 | $Q_g$ | $V_{DS}$ =80V, $I_D$ = 1.0A<br>$V_{GS}$ = 10V | | 9.7 | | nC |
| GateSource Charge 栅源极电荷 | $Q_{gs}$ | | | 1.6 | | |
| GateDrain Charge 栅漏极电荷 | $Q_{gd}$ | | | 1.7 | | |
| TurnOn Delay Time 导通延迟时间 | $t_{d(on)}$ | $V_{DD}$ = 50V, $R_L$ = 6.8Ω<br>$I_D$ =1.0A, $V_{GEN}$ = 10V<br>$R_G$ =3.3Ω | | 1.6 | | ns |
| TurnOn Rise Time 导通上升时间 | $t_r$ | | | 19 | | |
| TurnOff Delay Time 关断延迟时间 | $t_{d(off)}$ | | | 13.6 | | |
| TurnOff Fall Time 关断下降时间 | $t_f$ | | | 19 | | |
| Input Capacitance 输入电容 | $C_{iss}$ | $V_{DS}$ = 15V, $V_{GS}$ = 0V<br>f = 1.0 MHz | | 508 | | pF |
| Output Capacitance 输出电容 | $C_{oss}$ | | | 29 | | |
| Reverse Transfer Capacitance 反向传输电容 | $C_{rss}$ | | | 16.4 | | |
| **SourceDrain Diode 源漏二极管参数** | | | | | | |
| Max. Diode Forward Current 最大正向电流 | $I_S$ | | | | 1.2 | A |
| Diode Forward Voltage 正向电压 | $V_{SD}$ | $I_S$ = 2.0A, $V_{GS}$ = 0V | | | 1.2 | V |

Note :
1.The data tested by surface mounted on a 1 inch$^2$ FR-4 board with 2OZ copper.
2.The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%
3.The power dissipation is limited by 150˚C junction temperature
4.The data is theoretically the same as $I_D$ and $I_{DM}$ , in real applications , should be limited by total power dissipation.



## Typical Characteristics

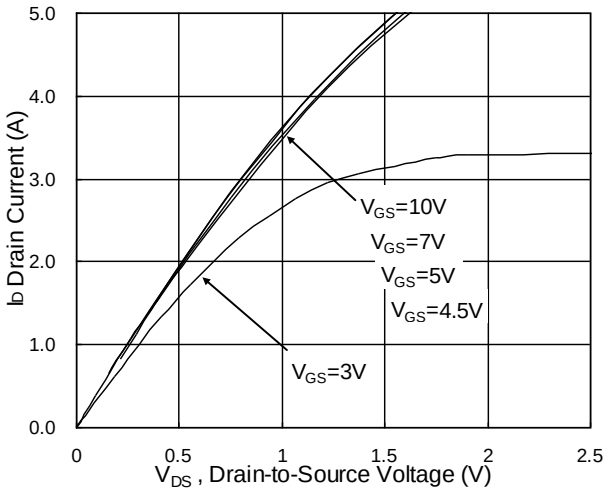



**Fig.1 Typical Output Characteristics**

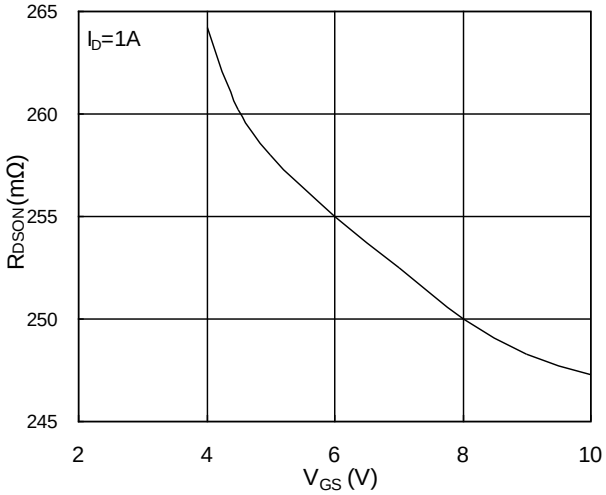



**Fig.2 On-Resistance vs. Gate-Source**

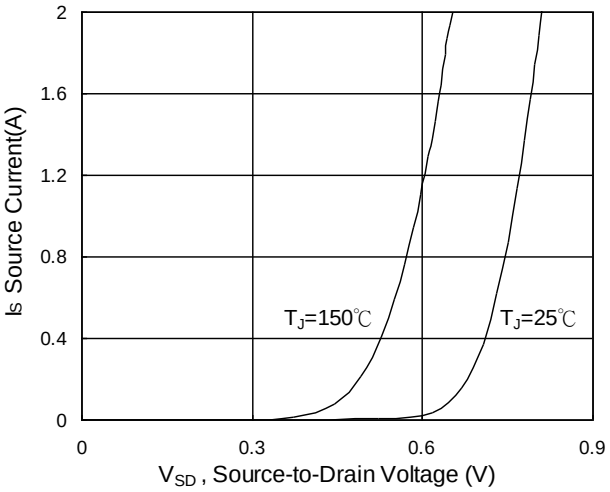



**Fig.3 Forward Characteristics of Reverse**

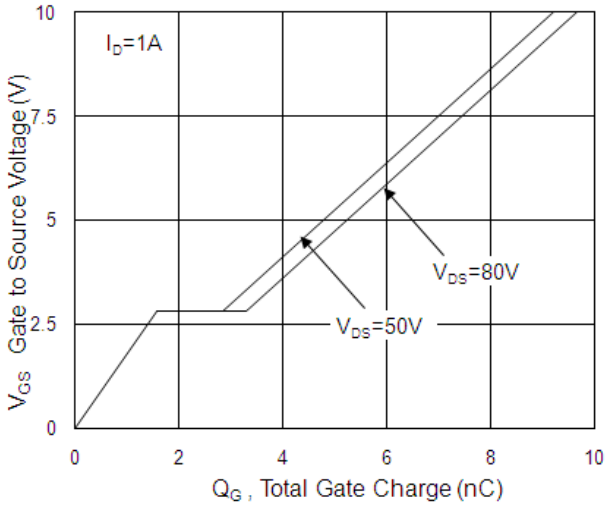



**Fig.4 Gate-Charge Characteristics**

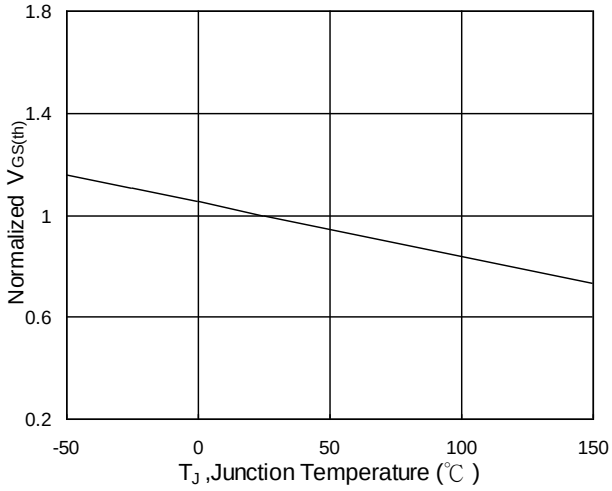



**Fig.5 Normalized $V_{GS(th)}$ vs. $T_J$**

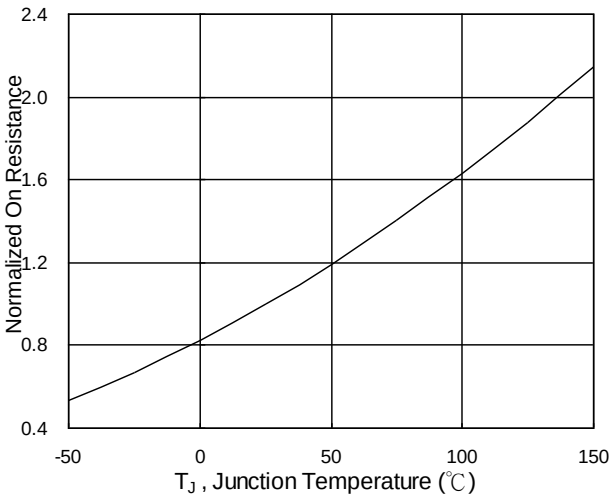



**Fig.6 Normalized $R_{DSON}$ vs. $T_J$**