

## P-Channel Enhancement Mode MOSFET

### Feature

- 30V/-3.2A,  $R_{DS(ON)} = 55\text{m}\Omega(\text{MAX})$  @ $V_{GS} = -10\text{V}$ .
- $R_{DS(ON)} = 70\text{m}\Omega(\text{MAX})$  @ $V_{GS} = -4.5\text{V}$ .
- $R_{DS(ON)} = 120\text{m}\Omega(\text{MAX})$  @ $V_{GS} = -2.5\text{V}$ .

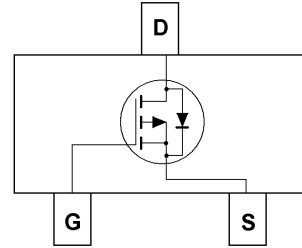
Super High dense cell design for extremely low  $R_{DS(ON)}$

Reliable and Rugged

SOT-23 for Surface Mount Package



SOT-23



### Applications

- Power Management
- Portable Equipment and Battery Powered Systems.

### Absolute Maximum Ratings

$T_A = 25^\circ\text{C}$  Unless Otherwise noted

| Parameter                | Symbol   | Limit    | Units |
|--------------------------|----------|----------|-------|
| Drain-Source Voltage     | $V_{DS}$ | -30      | V     |
| Gate-Source Voltage      | $V_{GS}$ | $\pm 12$ | V     |
| Drain Current-Continuous | $I_D$    | -3.2     | A     |

### Electrical Characteristics

$T_A = 25^\circ\text{C}$  Unless Otherwise noted

| Parameter   | Symbol       | Test Conditions                             | Min  | Typ. | Max  | Units            |
|---|--------------|---|------|------|------|------------------|
| <b>Off Characteristics</b>                                    |              |   |      |      |      |                  |
| Drain to Source Breakdown Voltage                             | BVDSS        | $V_{GS} = 0\text{V}, I_D = -250\mu\text{A}$ | -30  | -    | -    | V                |
| Zero-Gate Voltage Drain Current                               | IDSS         | $V_{DS} = -24\text{V}, V_{GS} = 0\text{V}$  | -    | -    | -1   | $\mu\text{A}$    |
| Gate Body Leakage Current, Forward                            | IGSSF        | $V_{GS} = 12\text{V}, V_{DS} = 0\text{V}$   | -    | -    | 100  | nA               |
| Gate Body Leakage Current, Reverse                            | IGSSR        | $V_{GS} = -12\text{V}, V_{DS} = 0\text{V}$  | -    | -    | -100 | nA               |
| <b>On Characteristics</b>                                     |              |   |      |      |      |                  |
| Gate Threshold Voltage  | $V_{GS(th)}$ | $V_{GS} = V_{DS}, I_D = -250\mu\text{A}$    | -0.7 | -    | -1.3 | V                |
| Static Drain-source On-Resistance                             | RDS(ON)      | $V_{GS} = -10\text{V}, I_D = -3.2\text{A}$  | -    | 50   | 55   | $\text{m}\Omega$ |
|   |              | $V_{GS} = -4.5\text{V}, I_D = -3.0\text{A}$ | -    | 60   | 70   | $\text{m}\Omega$ |
|   |              | $V_{GS} = -2.5\text{V}, I_D = -1.0\text{A}$ | -    | 80   | 120  | $\text{m}\Omega$ |
| <b>Drain-Source Diode Characteristics and Maximum Ratings</b> |              |   |      |      |      |                  |
| Drain-Source Diode Forward Voltage                            | VSD          | $V_{GS} = 0\text{V}, I_S = -1.0\text{A}$    |      |      | -1.0 | V                |

## Typical Characteristics

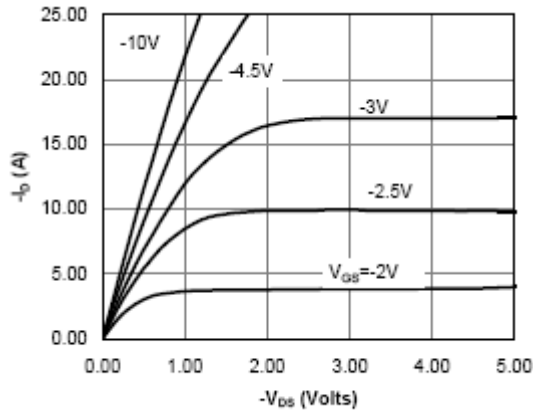


Fig 1: On-Region Characteristics

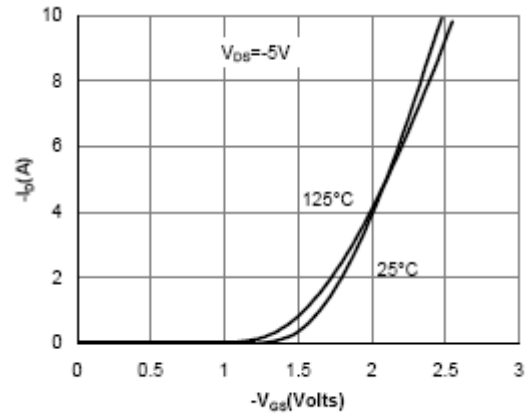


Figure 2: Transfer Characteristics

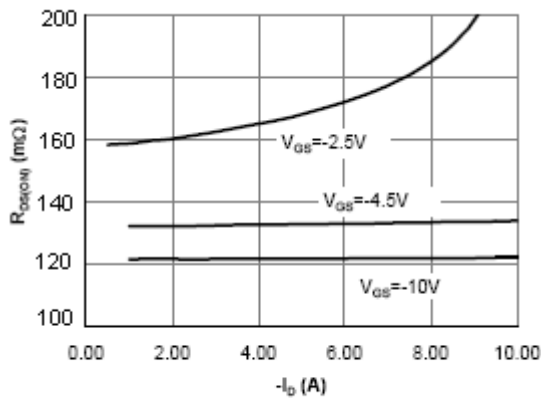


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

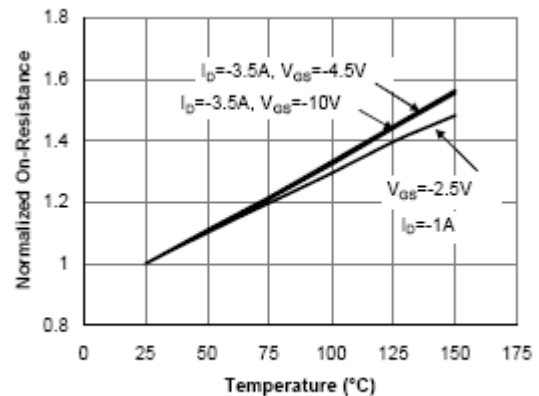


Figure 4: On-Resistance vs. Junction Temperature

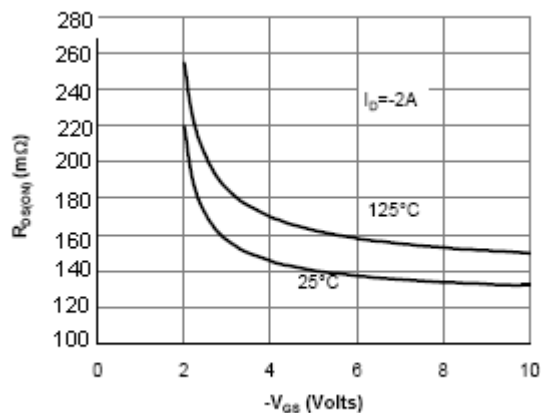


Figure 5: On-Resistance vs. Gate-Source Voltage

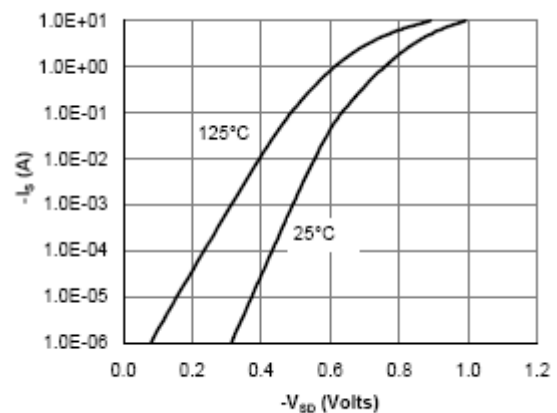
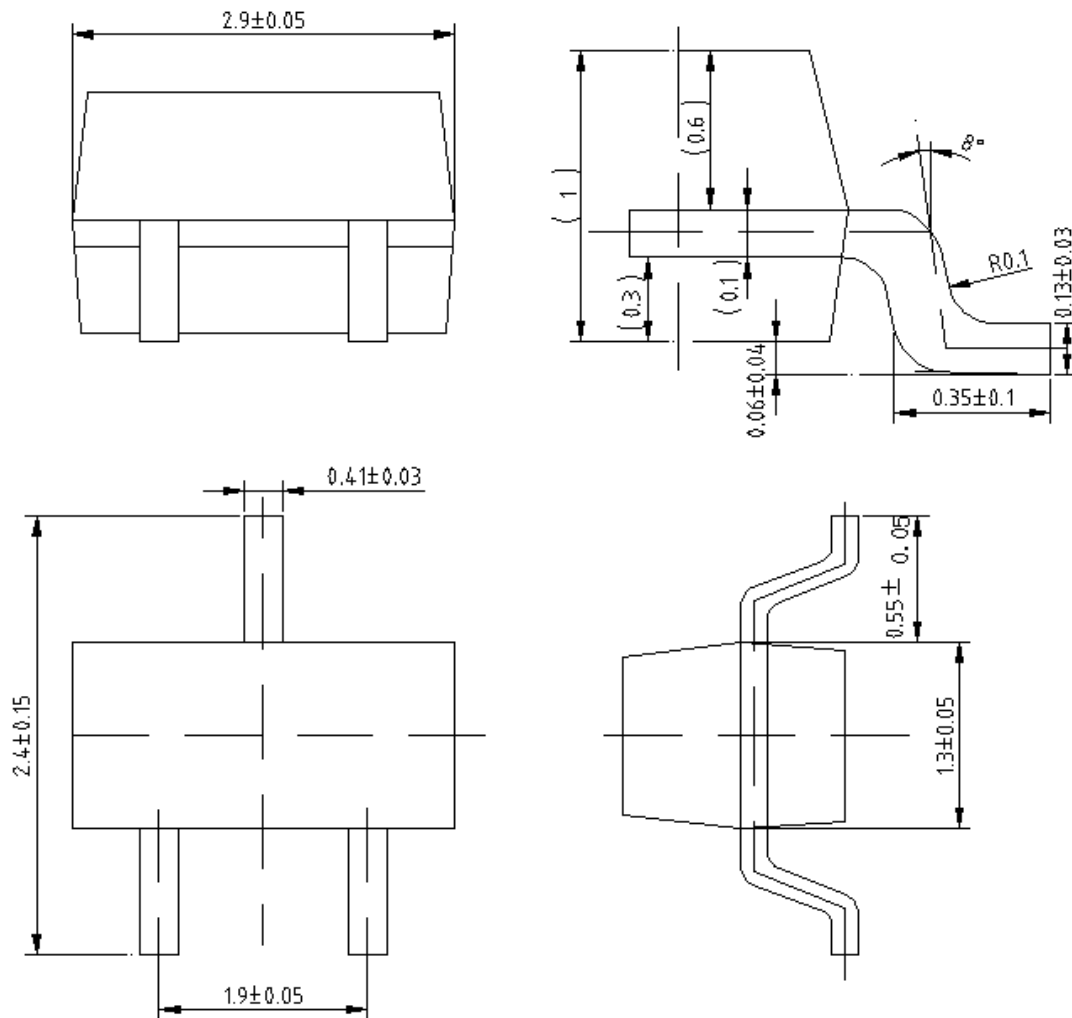


Figure 6: Body-Diode Characteristics

## Package Outline Dimensions (UNIT: mm)

### SOT-23



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