

## N-Channel Enhancement Mode MOSFET

### Feature

- 16V/6A,  $R_{DS(ON)} = 50m\Omega$  (MAX) @  $V_{GS} = 4.5V$ .  
 $R_{DS(ON)} = 55m\Omega$  (MAX) @  $V_{GS} = 2.5V$ .
- Super High dense cell design for extremely low  $R_{DS(ON)}$ .
- Reliable and Rugged.
- SC-59 for Surface Mount Package.

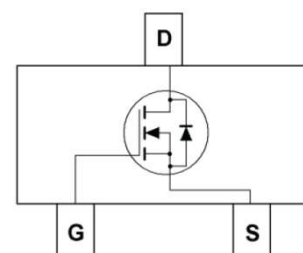
| $BV_{DSS}$ | $R_{DS(ON)}$ | $I_D$ |
|------------|--------------|-------|
| 16V        | 40m $\Omega$ | 6A    |

### Applications

- LI-ION Protection Circuit



SC-59



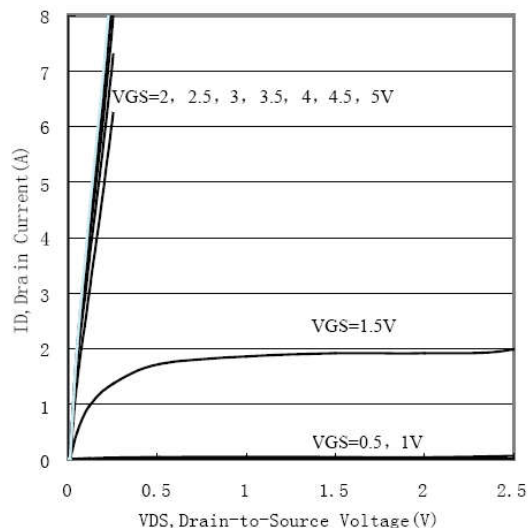
### Absolute Maximum Ratings $T_A=25^\circ\text{C}$ Unless Otherwise noted

| Parameter                | Symbol   | Limit    | Units |
|--------------------------|----------|----------|-------|
| Drain-Source Voltage     | $V_{DS}$ | 16       | V     |
| Gate-Source Voltage      | $V_{GS}$ | $\pm 12$ | V     |
| Drain Current-Continuous | $I_D$    | 6        | A     |

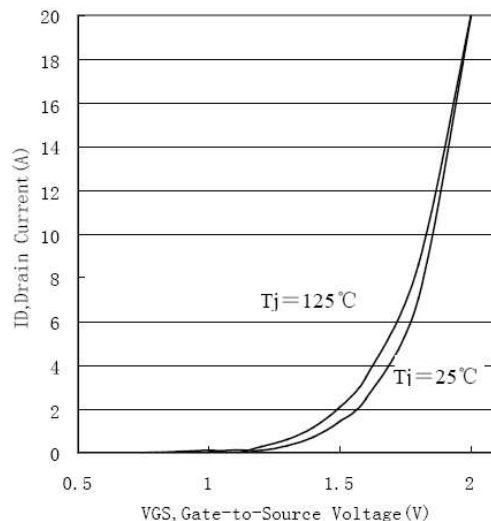
### Electrical Characteristics $T_A=25^\circ\text{C}$ Unless Otherwise noted

| Parameter                                              | Symbol  | Test Conditions     | Min | Typ. | Max  | Units |
|--------------------------------------------------------|---------|---------------------|-----|------|------|-------|
| Off Characteristics                                    |         |                     |     |      |      |       |
| Drain to Source Breakdown Voltage                      | BVDSS   | VGS=0V, ID=250 uA   | 16  | -    | -    | V     |
| Zero-Gate Voltage Drain Current                        | IDSS    | VDS=6V, VGS=0V      | -   | -    | 1    | uA    |
| Gate Body Leakage Current, Forward                     | IGSSF   | VGS=12V, VDS=0V     | -   | -    | 300  | nA    |
| Gate Body Leakage Current, Reverse                     | IGSSR   | VGS=-12V, VDS=0V    | -   | -    | -300 | nA    |
| On Characteristics                                     |         |                     |     |      |      |       |
| Gate Threshold Voltage                                 | VGS(th) | VGS= VDS, ID=250μA  | 0.4 | -    | 1.3  | V     |
| Static Drain-source                                    | RDS(ON) | VGS =4.5V, ID =6.0A | -   | 40   | 50   | m Ω   |
| On-Resistance                                          |         | VGS =2.5V, ID =5.2A | -   | 44   | 55   | m Ω   |
| Drain-Source Diode Characteristics and Maximum Ratings |         |                     |     |      |      |       |
| Drain-Source Diode Forward Voltage                     | VSD     | VGS =0V, IS=1.5A    |     |      | 1.2  | V     |

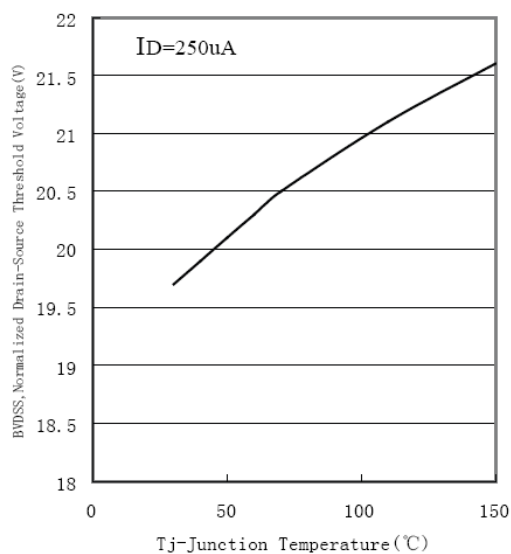
## Typical Characteristics



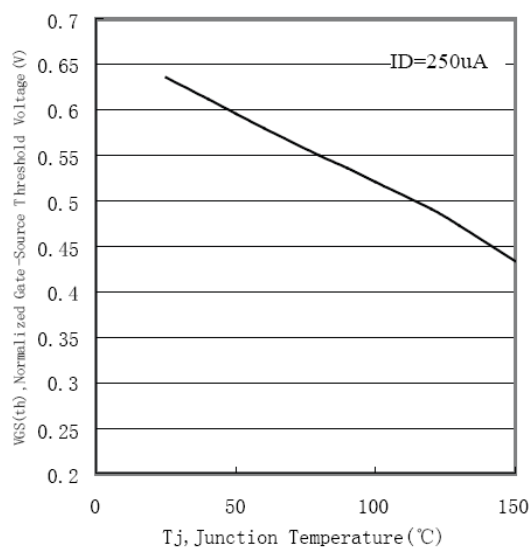
**Figure 1. Output Characteristics**



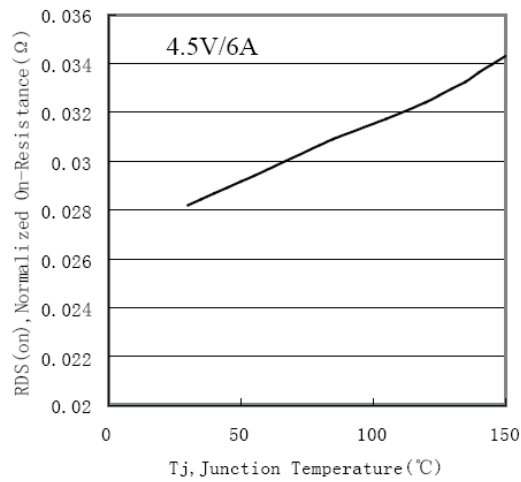
**Figure 2. Transfer Characteristics**



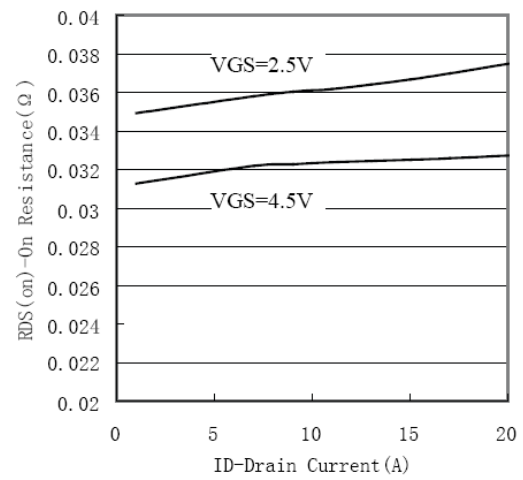
**Figure 3. Breakdown Voltage Variation with Temperature**



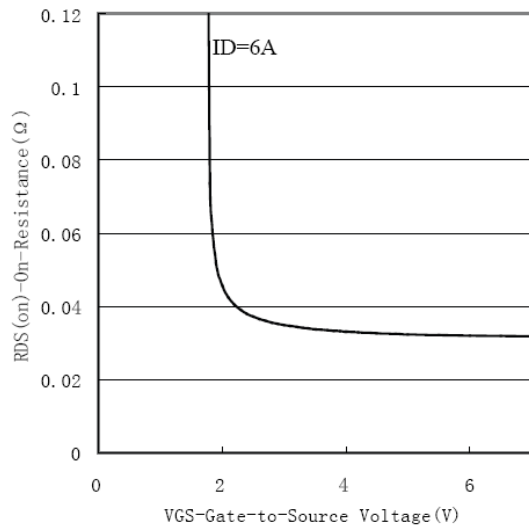
**Figure 4. Gate Threshold Variation with Temperature**



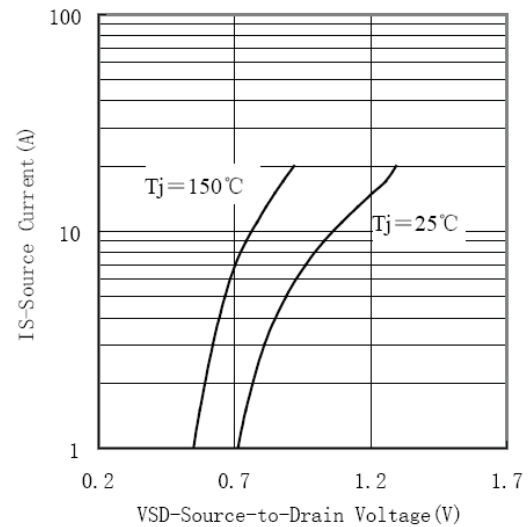
**Figure 5. On-Resistance Variation with Temperature**



**Figure 6. On-Resistance vs. Drain Current**



**Figure 7. On-Resistance vs. Gate-to-Source Voltage**



**Figure 8. Source-Drain Diode Forward Voltage**

## Package Outline Dimensions (UNIT: mm)

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