

## SOT-23-3 Plastic-Encapsulate Transistors

3400 MOSFET(N-Channel)

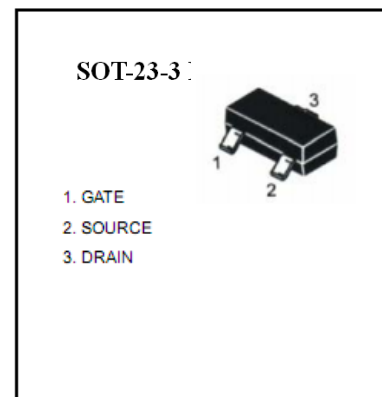
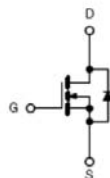
## FEATURES

High Power and current handing capability

Lead free product is acquired

Surface Mout Package

MARKING: XORB18



## MAXIMUM RATINGS (TA=25°C unless otherwise noted)

| Symbol           | Parameter            | Value   | Units |
|------------------|----------------------|---------|-------|
| V <sub>DS</sub>  | Drain-Source voltage | 30      | V     |
| V <sub>GS</sub>  | Gate-Source voltage  | ±12     | V     |
| I <sub>D</sub>   | Drain current        | 5.8     | A     |
| P <sub>D</sub>   | Power Dissipation    | 1.4     | W     |
| T <sub>j</sub>   | Junction Temperature | -55-150 | °C    |
| T <sub>stg</sub> | Storage Temperature  | -55-150 | °C    |

ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25°C unless otherwise specified)

| Parameter                          | Symbol               | Test conditions                                                                         | MIN | TYP  | MAX  | UNIT |
|------------------------------------|----------------------|-----------------------------------------------------------------------------------------|-----|------|------|------|
| Drain-Source Breakdown Voltage     | V <sub>(BR)DSS</sub> | V <sub>GS</sub> =0V, I <sub>D</sub> =250uA                                              | 30  |      |      | V    |
| Gate-Threshold Voltage             | V <sub>th(GS)</sub>  | V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250 uA                              | 0.7 | 0.9  | 1.4  | V    |
| Gate-body Leakage                  | I <sub>GSS</sub>     | V <sub>DS</sub> =0V, V <sub>GS</sub> =±12V                                              |     |      | ±100 | nA   |
| Zero Gate Voltage Drain Current    | I <sub>DSS</sub>     | V <sub>DS</sub> =30V, V <sub>GS</sub> =0V                                               |     |      | 1    | uA   |
| Drain-Source On-Resistance         | R <sub>DS(ON)</sub>  | V <sub>GS</sub> =2. 5V, I <sub>D</sub> =4A                                              |     |      | 59   | m Ω  |
|                                    |                      | V <sub>GS</sub> =4. 5V, I <sub>D</sub> =2.9A                                            |     |      | 45   | m Ω  |
|                                    |                      | V <sub>GS</sub> =10V, I <sub>D</sub> =2.9A                                              |     |      | 41   | m Ω  |
| Forward Trans conductance          | g <sub>fs</sub>      | V <sub>DS</sub> =5V, I <sub>D</sub> =2.9A                                               | 10  |      |      | s    |
| Dynamic Characteristics            |                      |                                                                                         |     |      |      |      |
| Input Capacitance                  | C <sub>iss</sub>     | V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1MHz                                       |     | 623  |      | pF   |
| Output Capacitance                 | C <sub>oss</sub>     |                                                                                         |     | 99   |      |      |
| Reverse Transfer Capacitance       | C <sub>rss</sub>     |                                                                                         |     | 77   |      |      |
| Switching Capacitance              |                      |                                                                                         |     |      |      |      |
| Turn-on Delay Time                 | t <sub>d(on)</sub>   | V <sub>DD</sub> =15V, I <sub>D</sub> =2. 9A, V <sub>GS</sub> =10V R <sub>GEN</sub> =3 Ω |     | 3.3  |      | nS   |
| Turn-on Rise Time                  | t <sub>r</sub>       |                                                                                         |     | 4.8  |      | nS   |
| Turn-off Delay Time                | t <sub>d(off)</sub>  |                                                                                         |     | 26   |      | nS   |
| Turn-off Fall Time                 | t <sub>f</sub>       |                                                                                         |     | 4    |      | nS   |
| Total Gate Charge                  | Q <sub>g</sub>       | V <sub>DS</sub> =15V, I <sub>D</sub> =5. 8A, V <sub>GS</sub> =4. 5V,                    |     | 9.5  |      | nC   |
| Gate-Source Charge                 | Q <sub>gs</sub>      |                                                                                         |     | 1.5  |      | nC   |
| Gate-Drain Charge                  | Q <sub>gd</sub>      |                                                                                         |     | 3    |      | nC   |
| Drain-Source Diode Characteristics |                      |                                                                                         |     |      |      |      |
| Diode Forward Voltage              | V <sub>SD</sub>      | V <sub>GS</sub> =0V, I <sub>D</sub> =2. 9A                                              |     | 0.75 | 1.2  | V    |
| Diode Forward Current              | I <sub>S</sub>       |                                                                                         |     |      | 2.9  | A    |

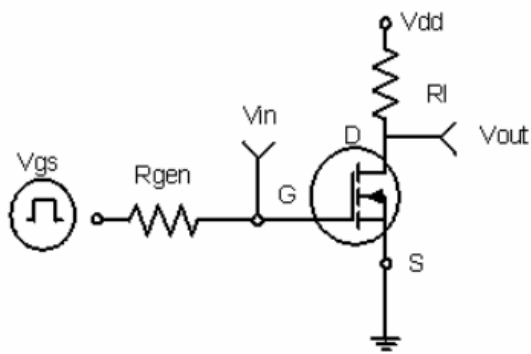


Figure 1: Switching Test Circuit

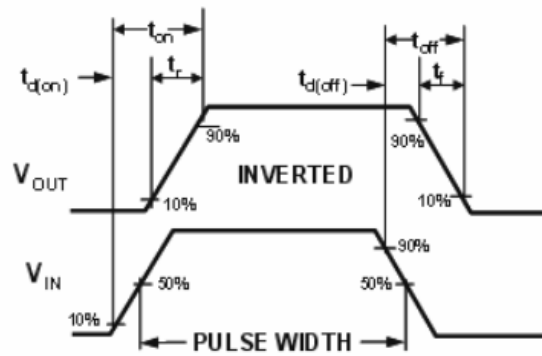


Figure 2: Switching Waveforms