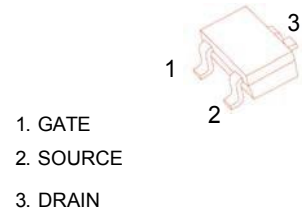


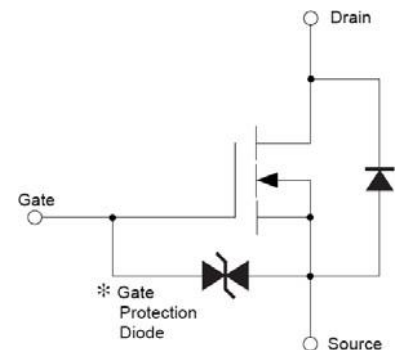
### FEATURES

- Low on-resistance
- Fast switching speed
- Low voltage drive makes this device ideal for portable equipment
- Easily designed drive circuits
- Easy to parallel

### SOT-323



### Equivalent circuit



### MOSFET MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ unless otherwise noted)

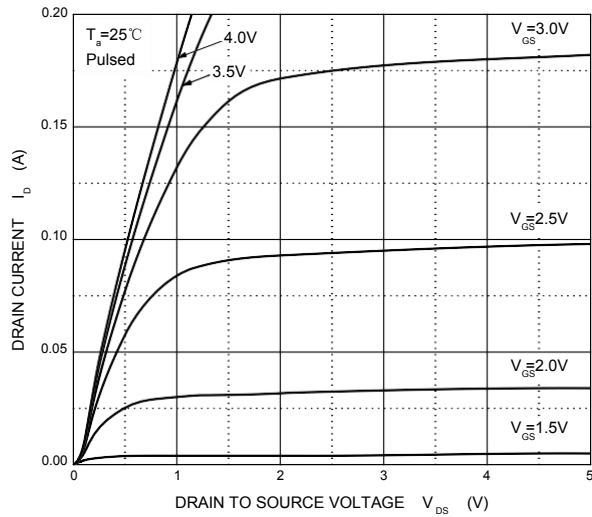
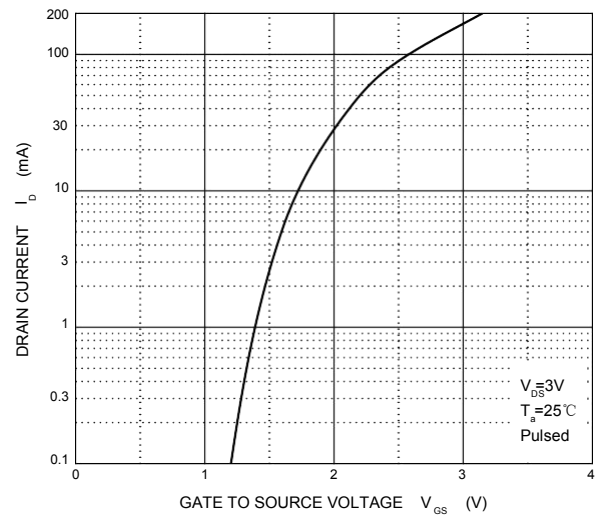
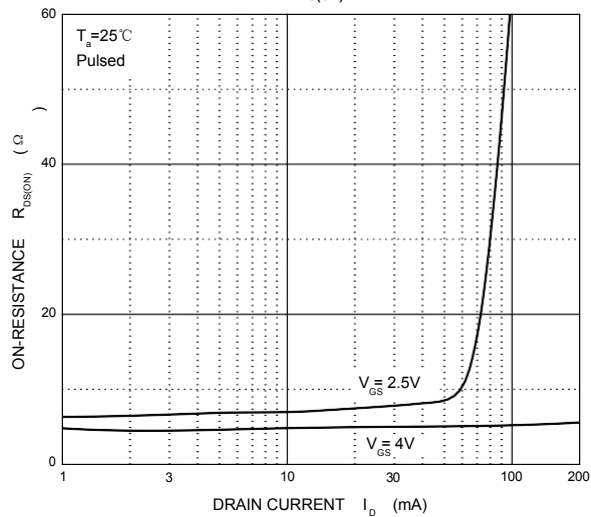
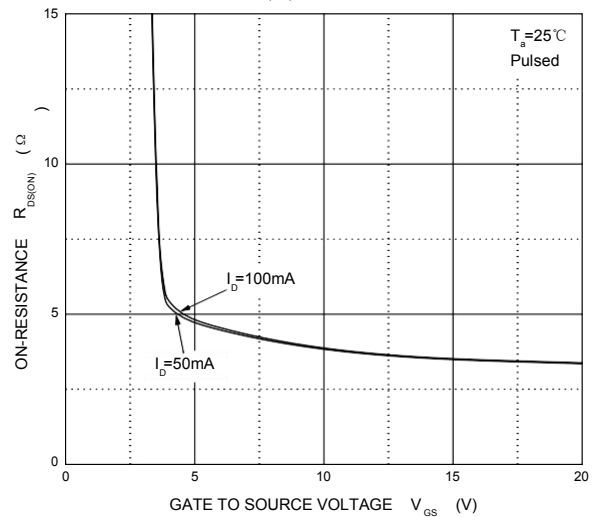
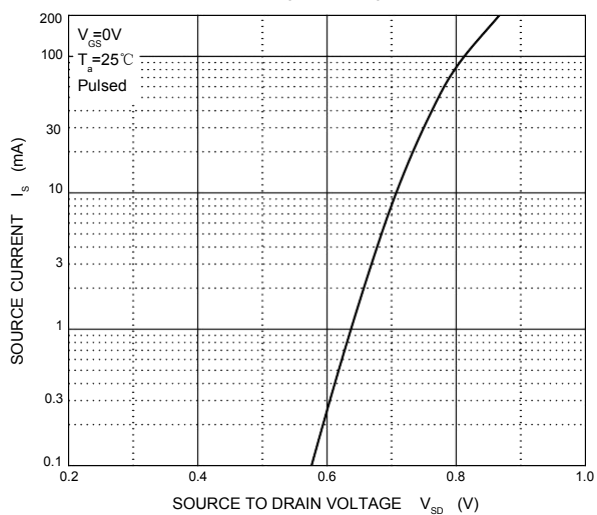
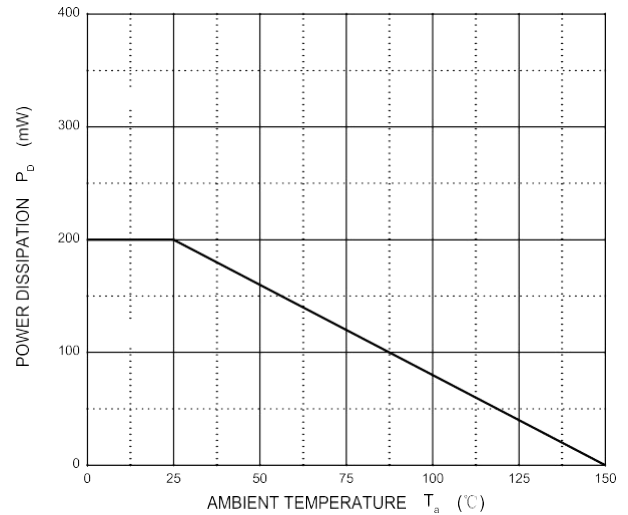
| Symbol          | Parameter                                   | Value    | Units              |
|-----------------|---------------------------------------------|----------|--------------------|
| $V_{DS}$        | Drain-Source voltage                        | 30       | V                  |
| $V_{GS}$        | Gate-Source Voltage                         | $\pm 20$ | V                  |
| $I_D$           | Continuous Drain Current                    | 0.1      | A                  |
| $P_D$           | Power Dissipation                           | 0.2      | W                  |
| $T_J$           | Junction Temperature                        | 150      | $^\circ\text{C}$   |
| $T_{stg}$       | Storage Temperature                         | -55-150  | $^\circ\text{C}$   |
| $R_{\theta JA}$ | Thermal Resistance from Junction to Ambient | 625      | $^\circ\text{C/W}$ |

### MOSFET ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ unless otherwise noted)

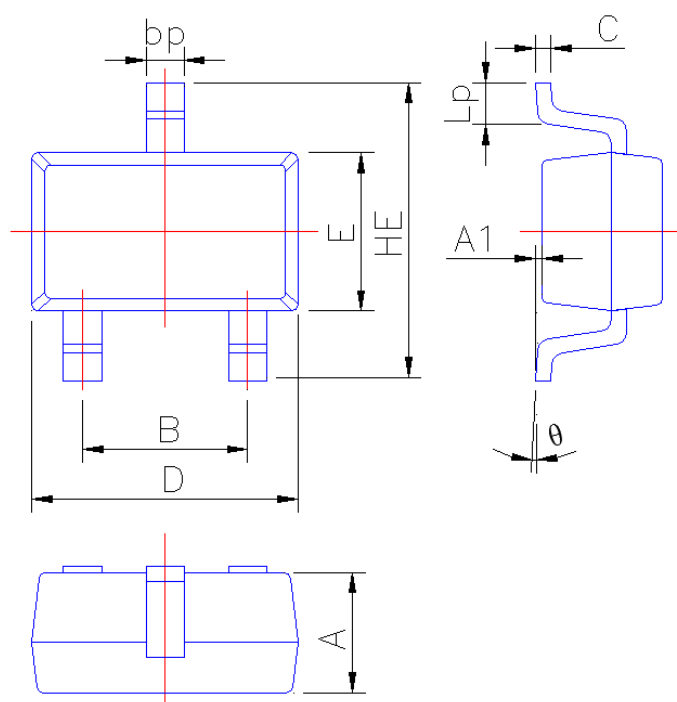
| Parameter                       | Symbol               | Test Condition                                                                                               | Min | Typ | Max | Units |
|---------------------------------|----------------------|--------------------------------------------------------------------------------------------------------------|-----|-----|-----|-------|
| Off Characteristics             |                      |                                                                                                              |     |     |     |       |
| Drain-Source Breakdown Voltage  | V <sub>(BR)DSS</sub> | V <sub>GS</sub> = 0V, I <sub>D</sub> = 10μA                                                                  | 30  |     |     | V     |
| Zero Gate Voltage Drain Current | I <sub>DSS</sub>     | V <sub>DS</sub> =30V,V <sub>GS</sub> = 0V                                                                    |     |     | 0.2 | μA    |
| Gate –Source leakage current    | I <sub>GSS</sub>     | V <sub>GS</sub> =±20V, V <sub>DS</sub> = 0V                                                                  |     |     | ±10 | uA    |
| Gate Threshold Voltage          | V <sub>GS(th)</sub>  | V <sub>DS</sub> = 3V, I <sub>D</sub> =100μA                                                                  | 0.8 |     | 1.5 | V     |
| Drain-Source On-Resistance      | R <sub>DS(on)</sub>  | V <sub>GS</sub> = 4V, I <sub>D</sub> =10mA                                                                   |     |     | 8   | Ω     |
|                                 |                      | V <sub>GS</sub> =2.5V,I <sub>D</sub> =1mA                                                                    |     |     | 13  | Ω     |
| Forward Transconductance        | g <sub>FS</sub>      | V <sub>DS</sub> =3V, I <sub>D</sub> = 10mA                                                                   | 20  |     |     | mS    |
| Dynamic Characteristics*        |                      |                                                                                                              |     |     |     |       |
| Input Capacitance               | C <sub>iss</sub>     | V <sub>DS</sub> =5V,V <sub>GS</sub> =0V,f =1MHz                                                              |     | 13  |     | pF    |
| Output Capacitance              | C <sub>oss</sub>     |                                                                                                              |     | 9   |     | pF    |
| Reverse Transfer Capacitance    | C <sub>rss</sub>     |                                                                                                              |     | 4   |     | pF    |
| Switching Characteristics*      |                      |                                                                                                              |     |     |     |       |
| Turn-On Delay Time              | t <sub>d(on)</sub>   | V <sub>GS</sub> =5V, V <sub>DD</sub> =5V,<br>I <sub>D</sub> =10mA, R <sub>g</sub> =10Ω, R <sub>L</sub> =500Ω |     | 15  |     | ns    |
| Rise Time                       | t <sub>r</sub>       |                                                                                                              |     | 35  |     | ns    |
| Turn-Off Delay Time             | t <sub>d(off)</sub>  |                                                                                                              |     | 80  |     | ns    |
| Fall Time                       | t <sub>f</sub>       |                                                                                                              |     | 80  |     | ns    |

\*These parameters have no way to verify

# Typical Characteristics

**Output Characteristics**

**Transfer Characteristics**

 **$R_{DS(ON)}$  —  $I_D$** 

 **$R_{DS(ON)}$  —  $V_{GS}$** 

 **$I_S$  —  $V_{SD}$** 

 **$P_D$  —  $T_a$** 


## SOT-323 Package Outline Dimensions



| Symbol | Dimension in Millimeters |       |
|--------|--------------------------|-------|
|        | Min                      | Max   |
| A      | 0.90                     | 1.00  |
| A1     | 0.010                    | 0.100 |
| B      | 1.20                     | 1.40  |
| bp     | 0.25                     | 0.45  |
| C      | 0.09                     | 0.15  |
| D      | 2.00                     | 2.20  |
| E      | 1.15                     | 1.35  |
| HE     | 2.15                     | 2.55  |
| Lp     | 0.25                     | 0.46  |
| θ      | 0°                       | 6°    |