

## General Description

The WST02N20B is the highest performance trench N-ch MOSFETs with extreme high cell density, which provide excellent  $R_{DS(ON)}$  and gate charge for most of the small power switching and load switch applications.

The WST02N20B meet the RoHS and Green Product requirement with full function reliability approved.

## Features

- 100% UIS + Rg Tested
- Reliable and Rugged
- Lead Free and Green Devices Available (RoHS Compliant)

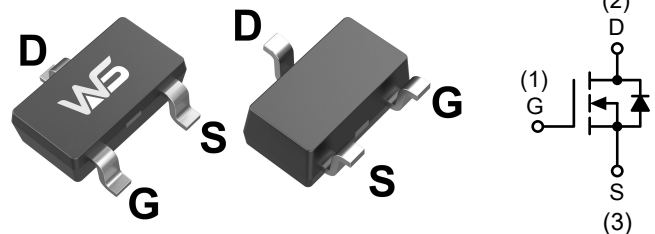
## Product Summary

| $BV_{DSS}$ | $R_{DS(ON)}$  | $I_D$ |
|------------|---------------|-------|
| 200V       | 680m $\Omega$ | 1.2A  |

## Applications

- DC-DC converter for Networking.
- Load Switch

## SOT-23-3L Pin Configuration



## Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

| Symbol                | Parameter                              | Rating                 | Unit             |                    |
|-----------------------|--|------------------------|------------------|--------------------|
| <b>Common Ratings</b> |  |                        |                  |                    |
| $V_{DSS}$             | Drain-Source Voltage                   | 200                    | V                |                    |
| $V_{GSS}$             | Gate-Source Voltage                    | $\pm 25$               |                  |                    |
| $T_J$                 | Maximum Junction Temperature           | 150                    | $^\circ\text{C}$ |                    |
| $T_{STG}$             | Storage Temperature Range              | -55 to 150             |                  |                    |
| $I_S$                 | Diode Continuous Forward Current       | $T_A=25^\circ\text{C}$ | A                |                    |
| $I_D$                 | Continuous Drain Current               | $T_A=25^\circ\text{C}$ | 1.2              | A                  |
|                       |  | $T_A=70^\circ\text{C}$ | 0.96             |                    |
| $I_{DM}^a$            | Pulsed Drain Current                   | $T_A=25^\circ\text{C}$ | 4.8              | A                  |
| $P_D$                 | Maximum Power Dissipation              | $T_A=25^\circ\text{C}$ | 2.5              | W                  |
|                       |  | $T_A=70^\circ\text{C}$ | 1.6              |                    |
| $R_{\theta JA}^c$     | Thermal Resistance-Junction to Ambient | $t \leq 10\text{s}$    | 50               | $^\circ\text{C/W}$ |
|                       |  | Steady State           | 90               | $^\circ\text{C/W}$ |
| $I_{AS}^b$            | Avalanche Current, Single pulse        | $L=0.5\text{mH}$       | 1                | A                  |
| $E_{AS}^b$            | Avalanche Energy, Single pulse         | $L=0.5\text{mH}$       | 0.25             | mJ                 |

Note a : Pulse width limited by max. junction temperature.

Note b : UIS tested and pulse width limited by maximum junction temperature  $150^\circ\text{C}$  (initial temperature  $T_J=25^\circ\text{C}$ ).

Note c : Surface mounted on  $1\text{in}^2$  pad area.

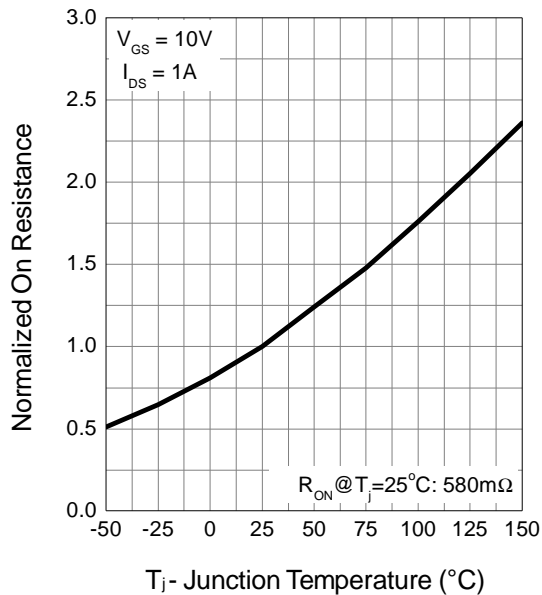




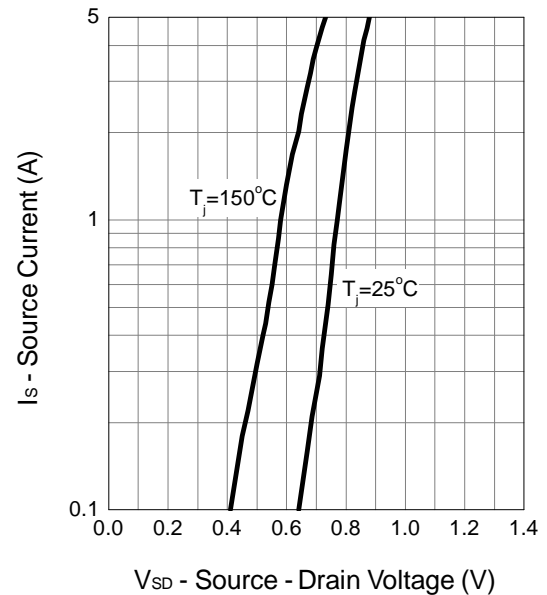


### Typical Operating Characteristics (Cont.)

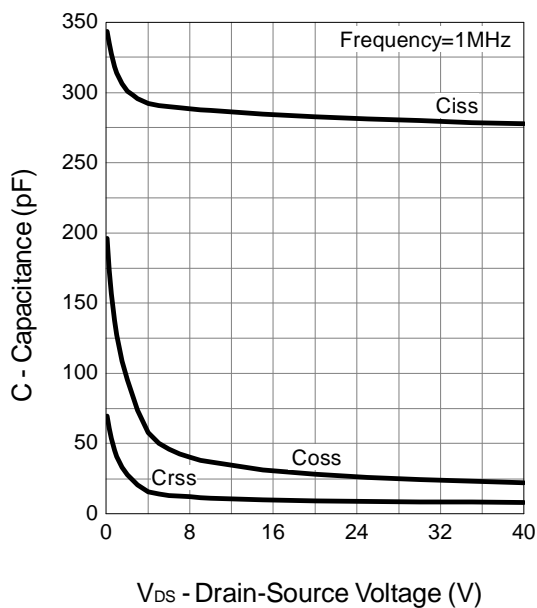
**Drain-Source On Resistance**



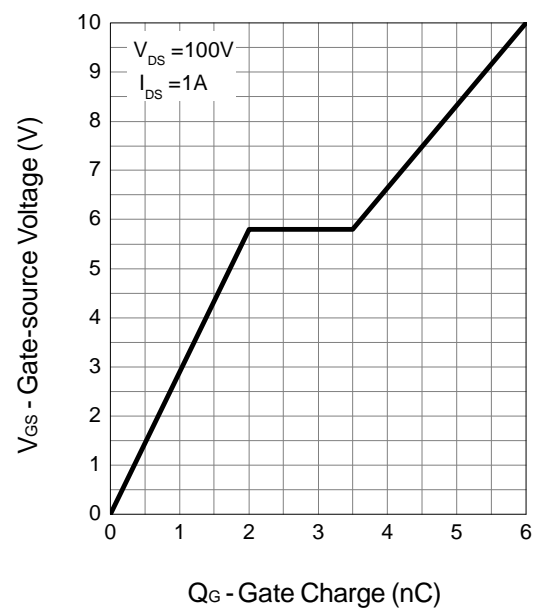
**Source-Drain Diode Forward**

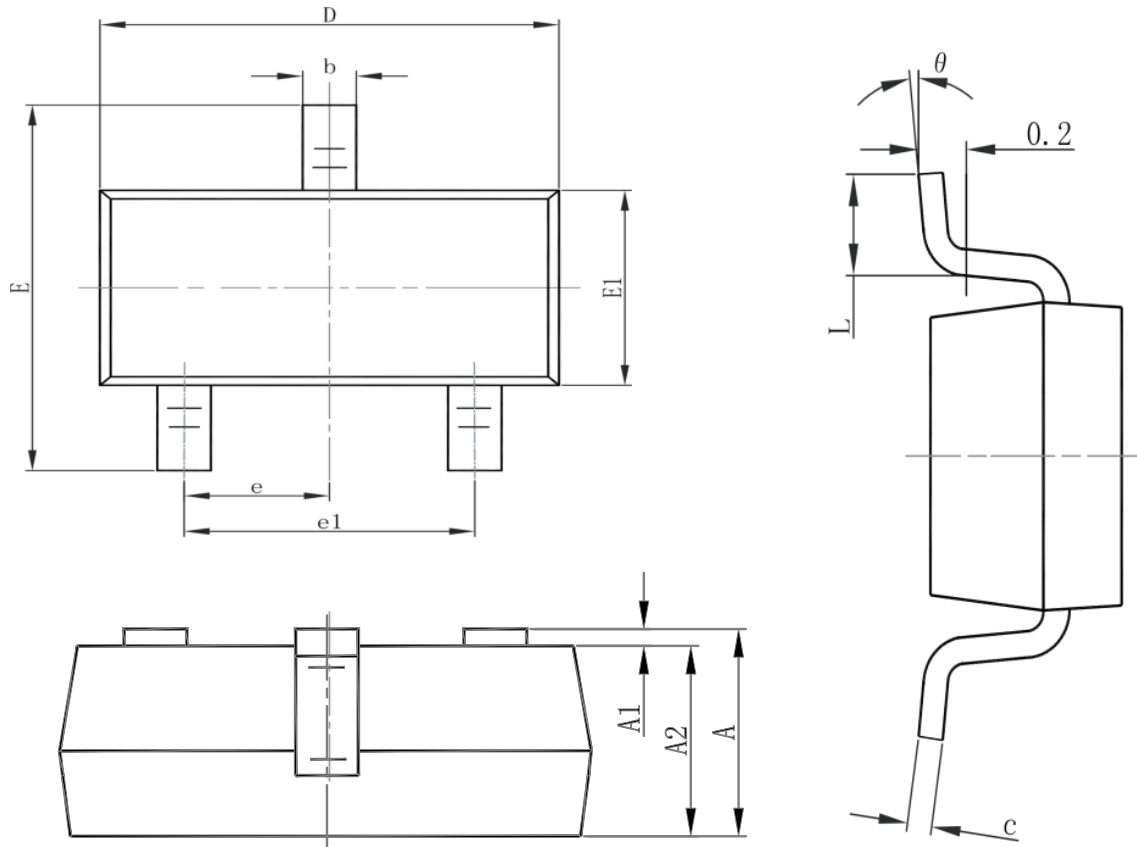


**Capacitance**



**Gate Charge**



**Packaging information**


| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min.                      | Max.  | Min.                 | Max.  |
| A      | 1.050                     | 1.250 | 0.041                | 0.049 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 1.050                     | 1.150 | 0.041                | 0.045 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.100                     | 0.200 | 0.004                | 0.008 |
| D      | 2.820                     | 3.020 | 0.111                | 0.119 |
| E1     | 1.500                     | 1.700 | 0.059                | 0.067 |
| E      | 2.650                     | 2.950 | 0.104                | 0.116 |
| e      | 0.950(BSC)                |       | 0.037(BSC)           |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.300                     | 0.600 | 0.012                | 0.024 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |



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