



# WM02DP06T

## Dual P-Channel MOSFET

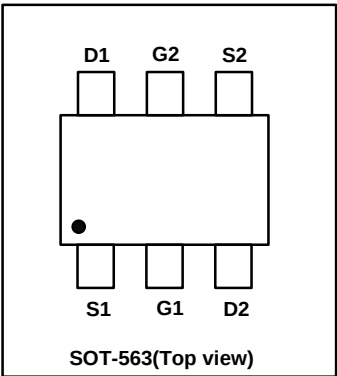
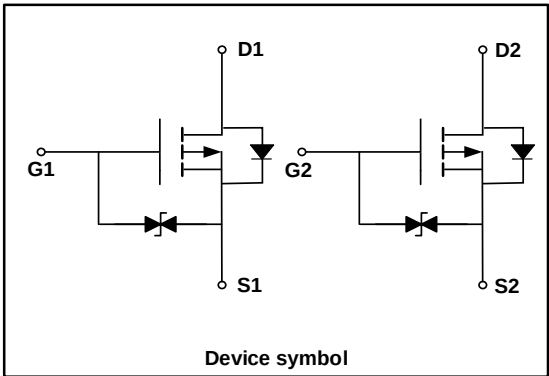
### Features

- $V_{DS} = -20\text{ V}$ ,  $I_D = -0.66\text{ A}$   
 $R_{DS(on)} < 0.52\Omega$  @  $V_{GS} = -4.5\text{ V}$   
 $R_{DS(on)} < 0.78\Omega$  @  $V_{GS} = -2.5\text{ V}$
- Enables High Density PCB Manufacturing
- Low Voltage Drive Makes this Device Ideal for Portable Equipment
- Advanced Trench Process Technology
- ESD Protected

### Mechanical Characteristics

- SOT-563 Package
- Marking : Making Code
- RoHS Compliant

### Schematic & PIN Configuration



### Absolute Maximum Rating

| Parameter                                                | Symbol          | Value       | Unit                 |
|----------------------------------------------------------|-----------------|-------------|----------------------|
| Drain-Source Voltage                                     | $V_{DS}$        | -20         | V                    |
| Gate-Source Voltage                                      | $V_{GS}$        | $\pm 12$    | V                    |
| Continuous Drain Current                                 | $I_D$           | -0.66       | A                    |
| Pulsed Drain Current                                     | $I_{DM}$        | -2.64       | A                    |
| Power Dissipation                                        | $P_D$           | 150         | mW                   |
| Junction Temperature                                     | $T_J$           | 150         | $^{\circ}\text{C}$   |
| Storage Temperature                                      | $T_{STG}$       | -55 to +150 | $^{\circ}\text{C}$   |
| Thermal Resistance from Junction to Ambient <sup>1</sup> | $R_{\theta JA}$ | 833         | $^{\circ}\text{C/W}$ |

**Electrical Characteristics** ( $T_{amb}=25^{\circ}\text{C}$  unless otherwise noted)

| Parameter                                     | Symbol              | Test Condition                                                                                 | Min. | Typ.  | Max. | Unit |
|-----------------------------------------------|---------------------|------------------------------------------------------------------------------------------------|------|-------|------|------|
| Static Characteristics                        |                     |                                                                                                |      |       |      |      |
| Drain-Source Breakdown Voltage                | BV <sub>DSS</sub>   | V <sub>GS</sub> = 0 V, I <sub>D</sub> = -250μA                                                 | -20  | -     | -    | V    |
| Zero Gate Voltage Drain Current               | I <sub>DSS</sub>    | V <sub>DS</sub> = -20V, V <sub>GS</sub> = 0 V                                                  | -    | -     | -1   | μA   |
| Gate-body Leakage Current                     | I <sub>GSS</sub>    | V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±10V                                                  | -    | -     | ±20  | μA   |
| Drain-Source On-state Resistance <sup>1</sup> | R <sub>DS(on)</sub> | V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -1.0A                                                | -    | 450   | 520  | mΩ   |
|                                               |                     | V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -0.8A                                                | -    | 650   | 780  |      |
|                                               |                     | V <sub>GS</sub> = -1.8V, I <sub>D</sub> = -0.5A                                                | -    | 950   | -    |      |
| Gate Threshold Voltage                        | V <sub>GS(th)</sub> | V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA                                    | -0.3 | -0.65 | -1.1 | V    |
| Forward transconductance <sup>1</sup>         | g <sub>fs</sub>     | V <sub>DS</sub> =10V, I <sub>D</sub> = -0.54A                                                  | -    | 0.8   | -    | S    |
| Dynamic Characteristics                       |                     |                                                                                                |      |       |      |      |
| Input Capacitance                             | C <sub>iss</sub>    | V <sub>GS</sub> = 0V, V <sub>DS</sub> = -16V, f = 1MHz                                         | -    | 113   | -    | pF   |
| Output Capacitance                            | C <sub>oss</sub>    |                                                                                                | -    | 15    | -    |      |
| Reverse Transfer Capacitance                  | C <sub>rss</sub>    |                                                                                                | -    | 9     | -    |      |
| Switching Characteristics                     |                     |                                                                                                |      |       |      |      |
| Turn-On Delay Time <sup>2</sup>               | t <sub>d(on)</sub>  | V <sub>DS</sub> = -10V, V <sub>GS</sub> = -4.5V<br>I <sub>D</sub> = -0.2A, R <sub>G</sub> =10Ω | -    | 9     | -    | ns   |
| Turn-On Rise Time <sup>2</sup>                | t <sub>r</sub>      |                                                                                                | -    | 5.7   | -    |      |
| Turn-Off Delay Time <sup>2</sup>              | t <sub>d(off)</sub> |                                                                                                | -    | 32.6  | -    |      |
| Turn- Off Fall Time <sup>2</sup>              | t <sub>f</sub>      |                                                                                                | -    | 20.3  | -    |      |
| Source-Drain Diode Characteristics            |                     |                                                                                                |      |       |      |      |
| Body Diode Voltage                            | V <sub>DS</sub>     | I <sub>S</sub> = -0.5A, V <sub>GS</sub> = 0V                                                   | -    | -     | -1.2 | V    |

Notes :

1. Pulse Test: Pulse Width < 300 $\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .
2. Guaranteed by design, not subject to production testing

## Typical Characteristics

Figure 1. Output Characteristics

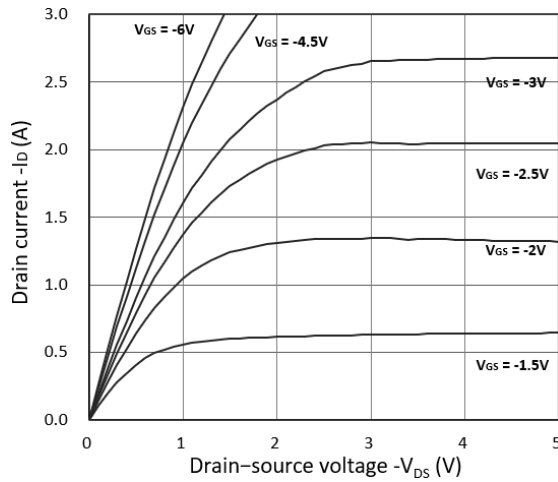
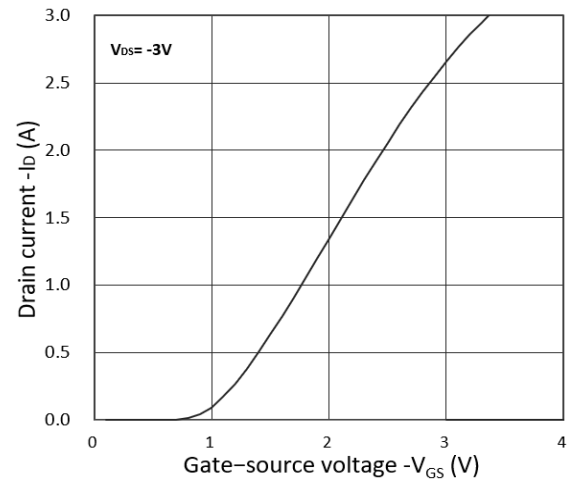
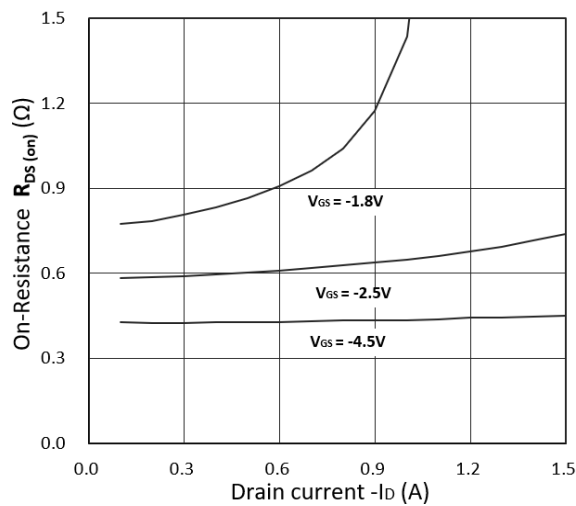
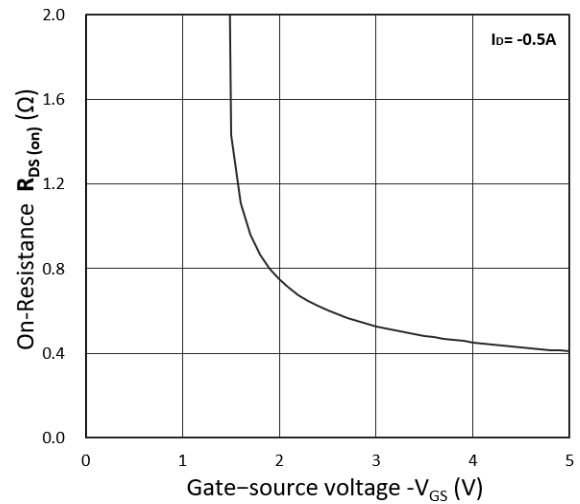
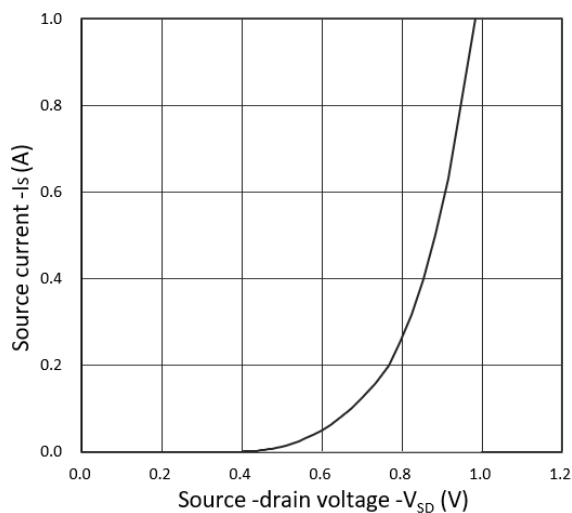
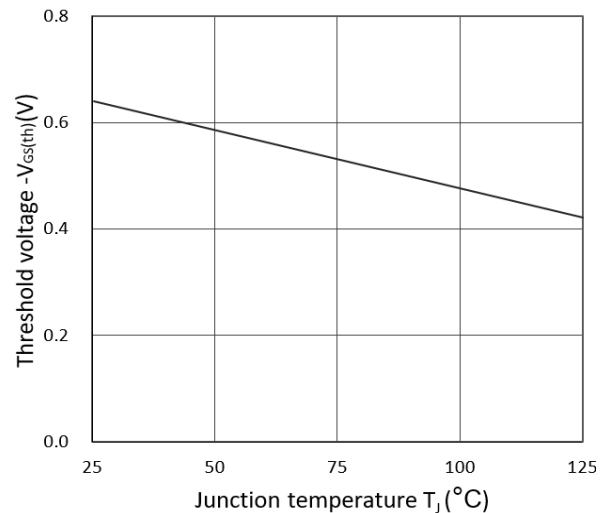
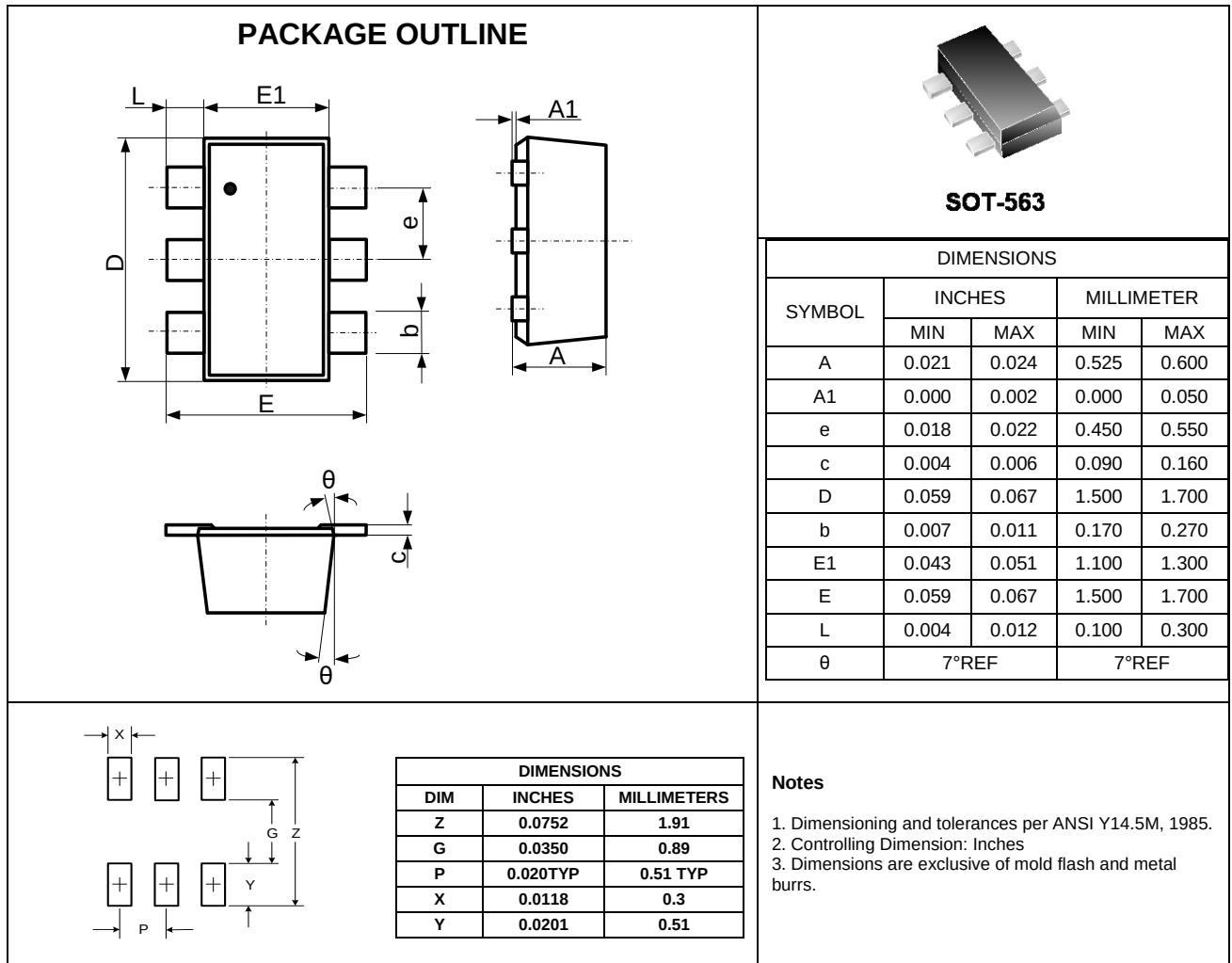


Figure 2. Transfer Characteristics

Figure 3.  $R_{DS(ON)}$  vs.  $I_D$ Figure 4.  $R_{DS(ON)}$  vs.  $V_{GS}$ Figure 5.  $I_S$  vs.  $V_{SD}$ Figure 6. Threshold Voltage vs.  $T_J$ 

## Outline Drawing – SOT-563



## Marking Codes

|              |           |
|--------------|-----------|
| Part Number  | WM02DP06D |
| Marking Code |           |

## Package Information

Qty: 3k/Reel

## CONTACT INFORMATION

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