

## 1.1 Features

- $V_{DS}=60V$
- $I_D=115mA$
- $R_{DS(ON)}<3\Omega(V_{GS}=10V)$
- $R_{DS(ON)}<4\Omega(V_{GS}=5V)$

## 2. Application

- Load Switch for Portable Devices

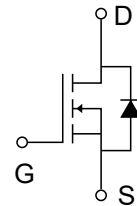
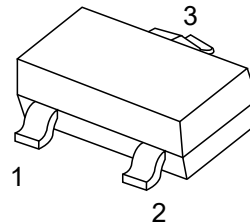
## 1.2 Features

- High density cell design for low  $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability

## 3. Pinning information

| Pin | Symbol | Description |
|-----|--------|-------------|
| 1   | G      | GATE        |
| 2   | S      | SOURCE      |
| 3   | D      | DRAIN       |

### SOT-23



## 4. Absolute Maximum Ratings $T_A = 25^\circ C$

| Parameter                                   | Symbol          | Value    | Units        |
|---------------------------------------------|-----------------|----------|--------------|
| Drain-Source Voltage                        | $V_{DS}$        | 60       | V            |
| Gate-Source Voltage                         | $V_{GS}$        | $\pm 20$ |              |
| Continuous Drain Current                    | $I_D$           | 0.115    | A            |
| Power Dissipation                           | $P_D$           | 0.225    | W            |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 556      | $^\circ C/W$ |
| Junction Temperature                        | $T_J$           | 150      | $^\circ C$   |
| Storage Temperature                         | $T_{STG}$       | -55~+150 | $^\circ C$   |



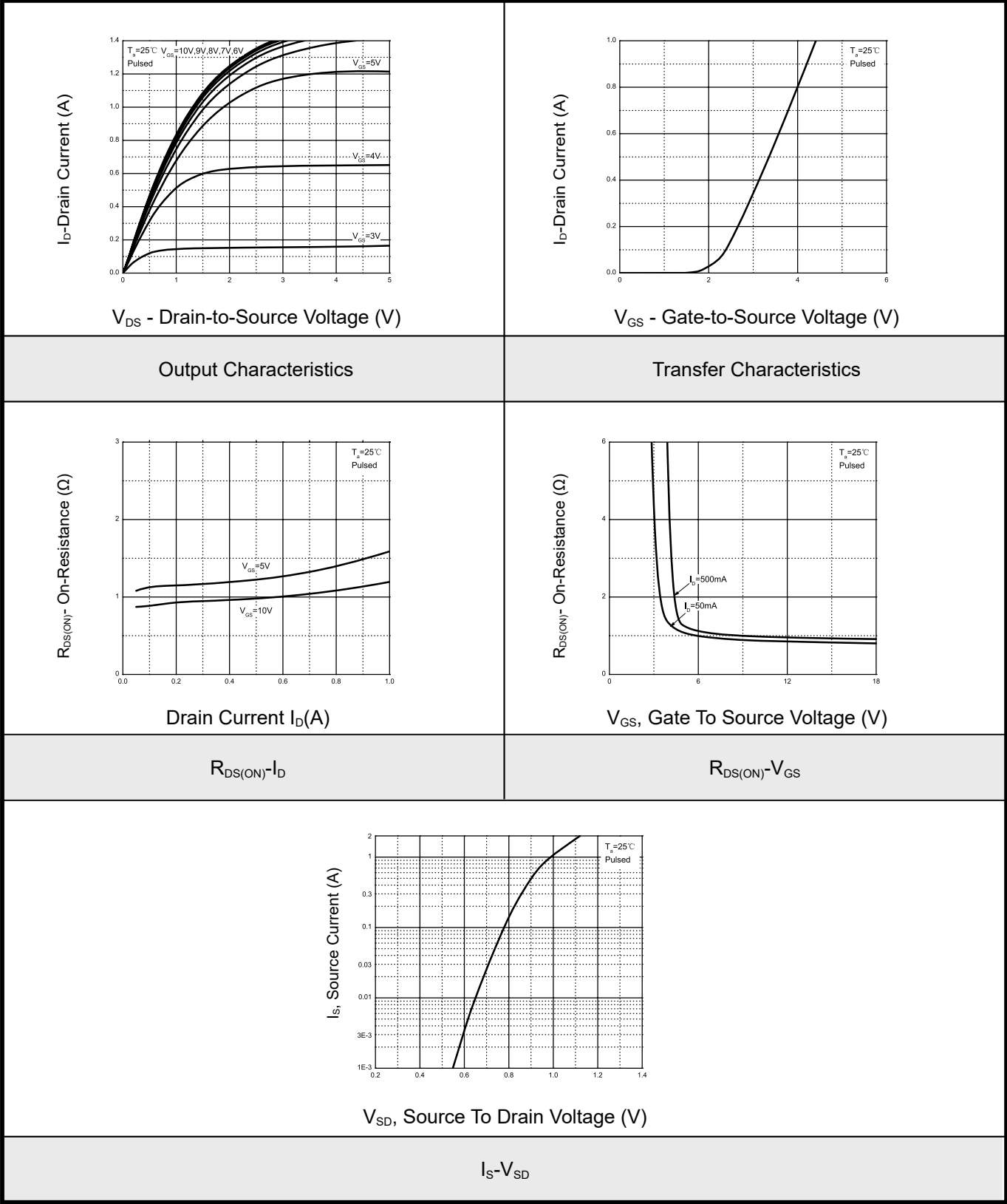
## 5. Electrical Characteristics $T_A = 25^\circ\text{C}$

| Parameter                       | Symbol        | Conditions                                     | Min  | Typ | Max      | Units    |
|---------------------------------|---------------|------------------------------------------------|------|-----|----------|----------|
| Drain-Source Breakdown Voltage  | $V_{(BR)DSS}$ | $I_D=250\mu A$ , $V_{GS}=0V$                   | 60   |     |          | V        |
| Gate-Threshold Voltage          | $V_{GS(th)}$  | $V_{DS}=V_{GS}$ , $I_D=250\mu A$               | 1    |     | 2.5      | V        |
| Gate-body Leakage               | $I_{GSS}$     | $V_{DS}=0V$ , $V_{GS}=\pm 10V$                 |      |     | $\pm 80$ | nA       |
| Zero Gate Voltage Drain Current | $I_{DSS}$     | $V_{DS}=60V$ , $V_{GS}=0V$                     |      |     | 80       | nA       |
| On-state Drain Current          | $I_{D(ON)}$   | $V_{DS}=7V$ , $V_{GS}=10V$                     |      |     | 500      | mA       |
| Drain-Source On-Resistance      | $R_{DS(ON)}$  | $V_{GS}=10V$ , $I_D=100mA$                     |      |     | 3        | $\Omega$ |
|                                 |               | $V_{GS}=5V$ , $I_D=50mA$                       |      |     | 4        | $\Omega$ |
| Forward Trans conductance       | $g_{FS}$      | $V_{DS}=10V$ , $I_D=200mA$                     | 80   |     |          | ms       |
| Drain-source on-voltage         | $V_{DS(ON)}$  | $V_{GS}=10V$ , $I_D=500mA$                     |      |     | 3.75     | V        |
|                                 |               | $V_{GS}=5V$ , $I_D=50mA$                       |      |     | 0.375    | V        |
| Diode Forward Voltage           | $V_{SD}$      | $I_S=115mA$ , $V_{GS}=0V$                      | 0.55 |     | 1.2      | V        |
| Input Capacitance *             | $C_{iss}$     | $V_{GS}=0V$ , $V_{DS}=25V$ , $f=1MHz$          |      |     | 50       | pF       |
| Output Capacitance *            | $C_{oss}$     |                                                |      |     | 25       | pF       |
| Reverse Transfer Capacitance *  | $C_{rss}$     |                                                |      |     | 5        | pF       |
| SWITCHING TIME                  |               |                                                |      |     |          |          |
| Turn-on Time *                  | $t_{D(on)}$   | $V_{DD}=25V$ , $R_L=50\Omega$ , $R_G=25\Omega$ |      |     | 20       | ns       |
| Turn-off Time *                 | $t_{D(off)}$  | $I_D=500mA$ , $V_{GEN}=10V$                    |      |     | 40       | ns       |

\*These parameters have no way to verify.

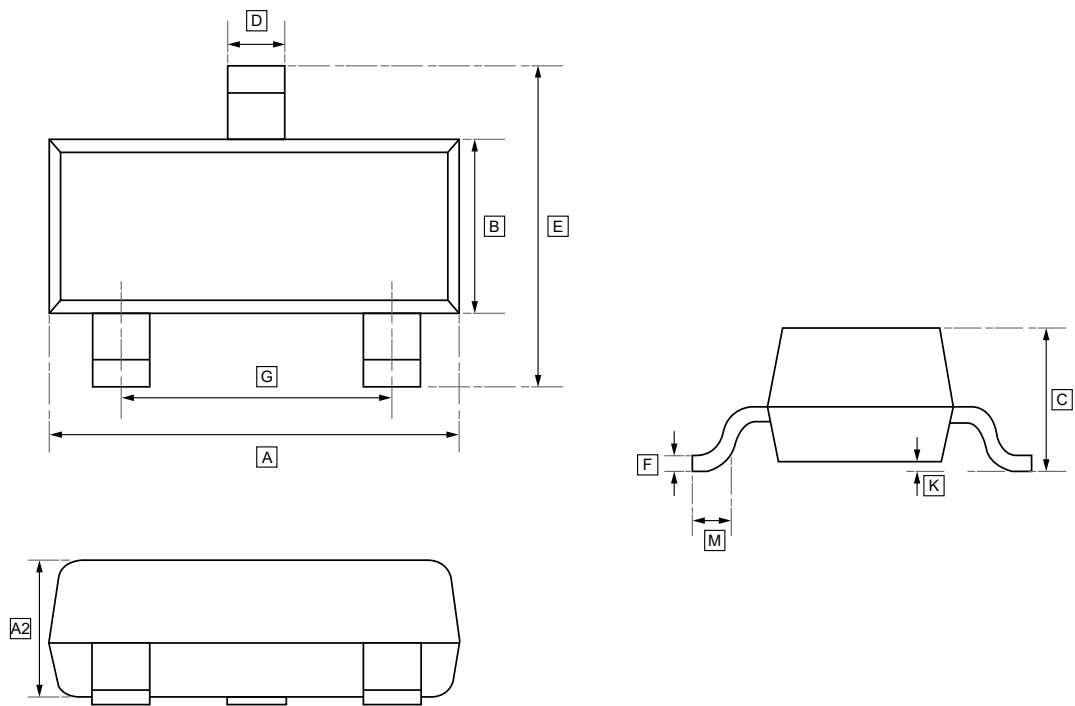


6. Typical Characteristics





7.SOT-23 Package Outline Dimensions

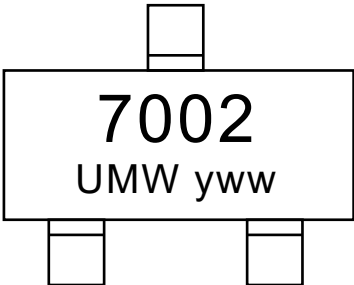


DIMENSIONS (mm are the original dimensions)

| Symbol | A    | B    | C    | D    | E    | G    | K    | M    | A2   | F     |
|--------|------|------|------|------|------|------|------|------|------|-------|
| Min    | 2.85 | 1.20 | 0.90 | 0.40 | 2.25 | 1.80 | 0.00 | 0.30 | 0.95 | 0.095 |
| Max    | 3.04 | 1.40 | 1.10 | 0.50 | 2.55 | 2.00 | 0.10 | -    | 1.05 | 0.115 |



8.Ordering Information



yww: Batch Code

| Order Code | Package | Base QTY | Delivery Mode |
|------------|---------|----------|---------------|
| UMW 2N7002 | SOT-23  | 3000     | Tape and reel |



## 9.Disclaimer

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