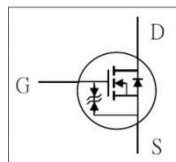


## »Features

- Small Package Outline
- Simple Drive Requirement
- Surface Mount Device
- RoHS Compliant & Halogen-Free

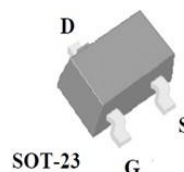
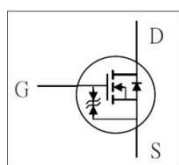


|         |      |
|---------|------|
| BVDSS   | 60V  |
| RDS(ON) | 1.5Ω |
| ID      | 0.5A |

## »Description

CT7002M is from Coretong innovated design and silicon process technology to achieve the lowest possible on- resistance and fast switching performance. It provides the designer with an extreme efficient device for use in a wide range of

## »Schematic & PIN Configuration



SOT-23

## »Absolute Maximum Ratings@Tj=25°C(unless otherwise specified)

| Symbol        | Parameter                            | Rating     | Units |
|---------------|--------------------------------------|------------|-------|
| VDS           | Drain-Source Voltage                 | 60         | V     |
| VGS           | Gate-Source Voltage                  | ±20        | V     |
| ID-Continuous | Drain Current, VGS @ 10V             | 115        | mA    |
| IDM           | Pulsed Drain Current <sub>1</sub>    | 800        | mA    |
| PD@TA=25°C    | Total Power Dissipation <sub>3</sub> | 0.7        | W     |
| TSTG          | Storage Temperature Range            | -55 to 150 | °C    |
| TJ            | Operating Junction Temperature Range | 150        | °C    |

## »Thermal Data

| Symbol | Parameter                                                 | Value | Unit |
|--------|-----------------------------------------------------------|-------|------|
| Rthj-a | Maximum Thermal Resistance, Junction-ambient <sub>3</sub> | 150   | °C/W |

**»Electrical Characteristics@Tj=25 °C(unless otherwise specified)**

| Symbol              | Parameter                                      | Test Conditions                                          | Min. | Typ. | Max. | Units |
|---------------------|------------------------------------------------|----------------------------------------------------------|------|------|------|-------|
| BV <sub>DSS</sub>   | Drain-Source Breakdown Voltage                 | V <sub>GS</sub> =0V, I <sub>D</sub> =10uA                | 60   | 70   | -    | V     |
| R <sub>DS(ON)</sub> | Static Drain-Source On-Resistance <sup>2</sup> | V <sub>GS</sub> =10V, I <sub>D</sub> =300mA              | -    | 1.5  | 3    | Ω     |
|                     |                                                | V <sub>GS</sub> =4.5V, I <sub>D</sub> =200mA             | -    | 2    | 4    | Ω     |
| V <sub>GS(th)</sub> | Gate Threshold Voltage                         | V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250uA | 1.35 | 1.6  | 1.85 | V     |
| g <sub>fs</sub>     | Forward Transconductance                       | V <sub>GS</sub> =10V, I <sub>D</sub> =200mA              | 80   | -    | -    | mS    |
| I <sub>DSS</sub>    | Drain-Source Leakage Current                   | V <sub>DS</sub> =48V, V <sub>GS</sub> =0V                | -    | -    | 1    | uA    |
| I <sub>GSS</sub>    | Gate-Source Leakage                            | V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V               | -    | -    | ±10  | uA    |
| t <sub>d(on)</sub>  | Turn-on Delay Time                             | V <sub>DS</sub> =25V, I <sub>D</sub> =500mA              | -    | -    | 10   | ns    |
| t <sub>d(off)</sub> | Turn-off Delay Time                            | R <sub>G</sub> =25Ω, V <sub>GS</sub> =10V                | -    | -    | 15   | ns    |
| C <sub>iss</sub>    | Input Capacitance                              | V <sub>GS</sub> =0V                                      | -    | -    | 40   | pF    |
| C <sub>oss</sub>    | Output Capacitance                             | V <sub>DS</sub> =25V                                     | -    | -    | 30   | pF    |
| C <sub>rss</sub>    | Reverse Transfer Capacitance                   | f=1.0MHz                                                 | -    | -    | 10   | pF    |
| ESD                 | Electro-Static Discharge                       | HBM                                                      | -    | -    | 2000 | V     |

**»Source-Drain Diode**

| Symbol          | Parameter                       | Test Conditions                            | Min. | Typ. | Max. | Units |
|-----------------|---------------------------------|--------------------------------------------|------|------|------|-------|
| V <sub>SD</sub> | Forward On Voltage <sup>2</sup> | I <sub>S</sub> =115mA, V <sub>GS</sub> =0V | -    | -    | 1.2  | V     |

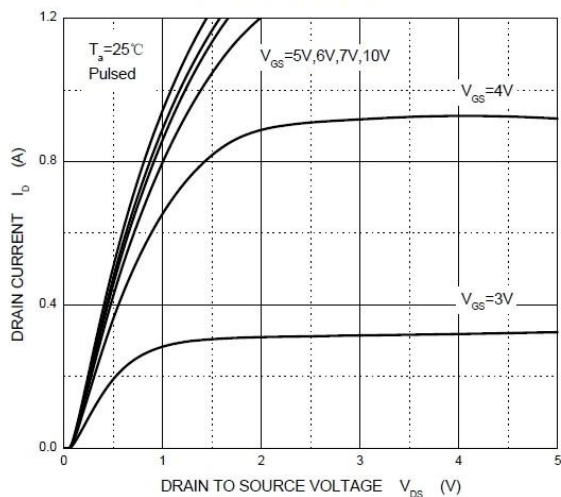
**Notes:**

1.Pulse width limited by Max. junction temperature.

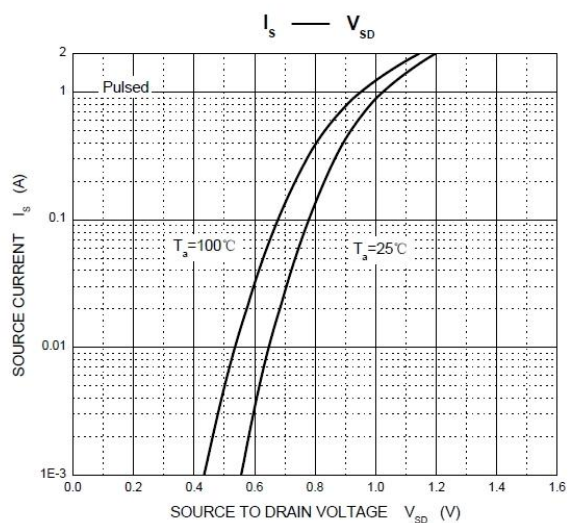
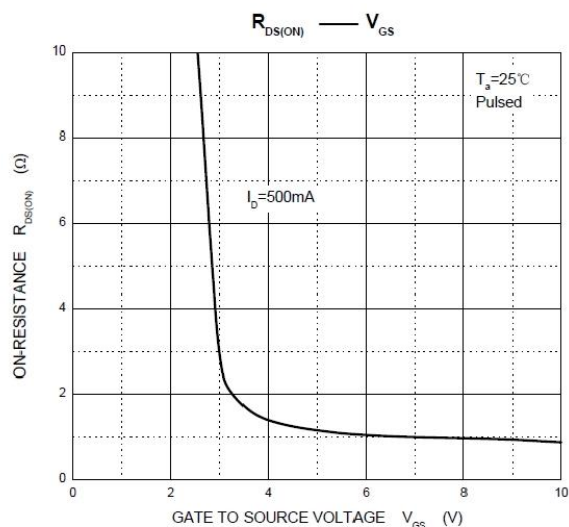
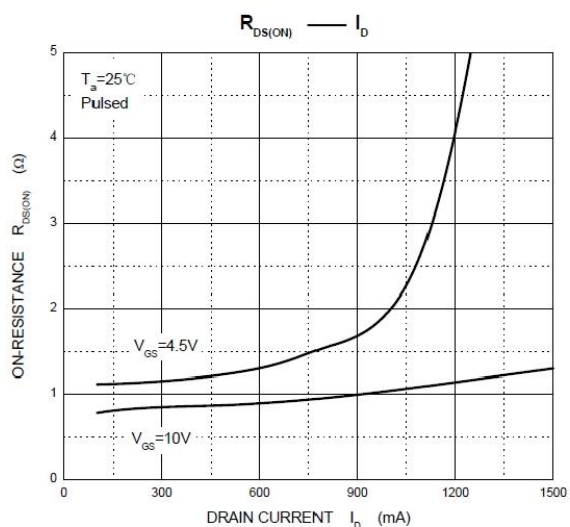
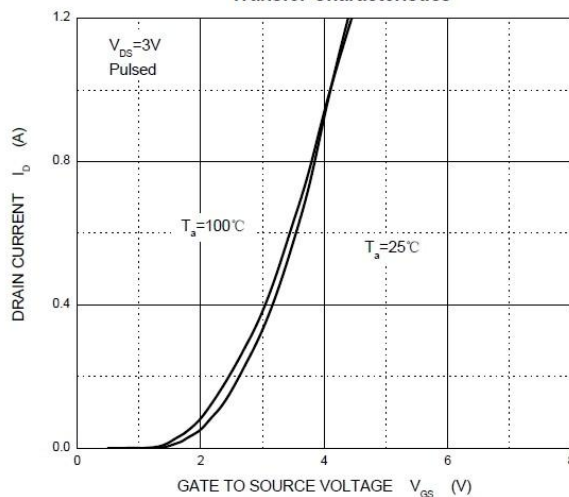
2.Pulse test

## » Typical Performance Characteristics

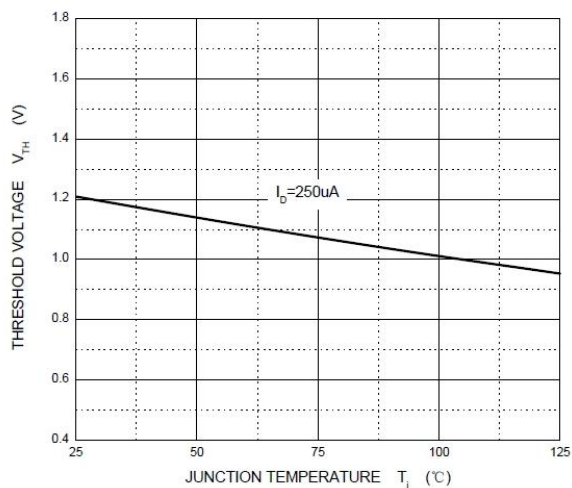
Output Characteristics



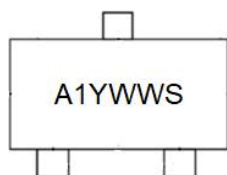
Transfer Characteristics



Threshold Voltage

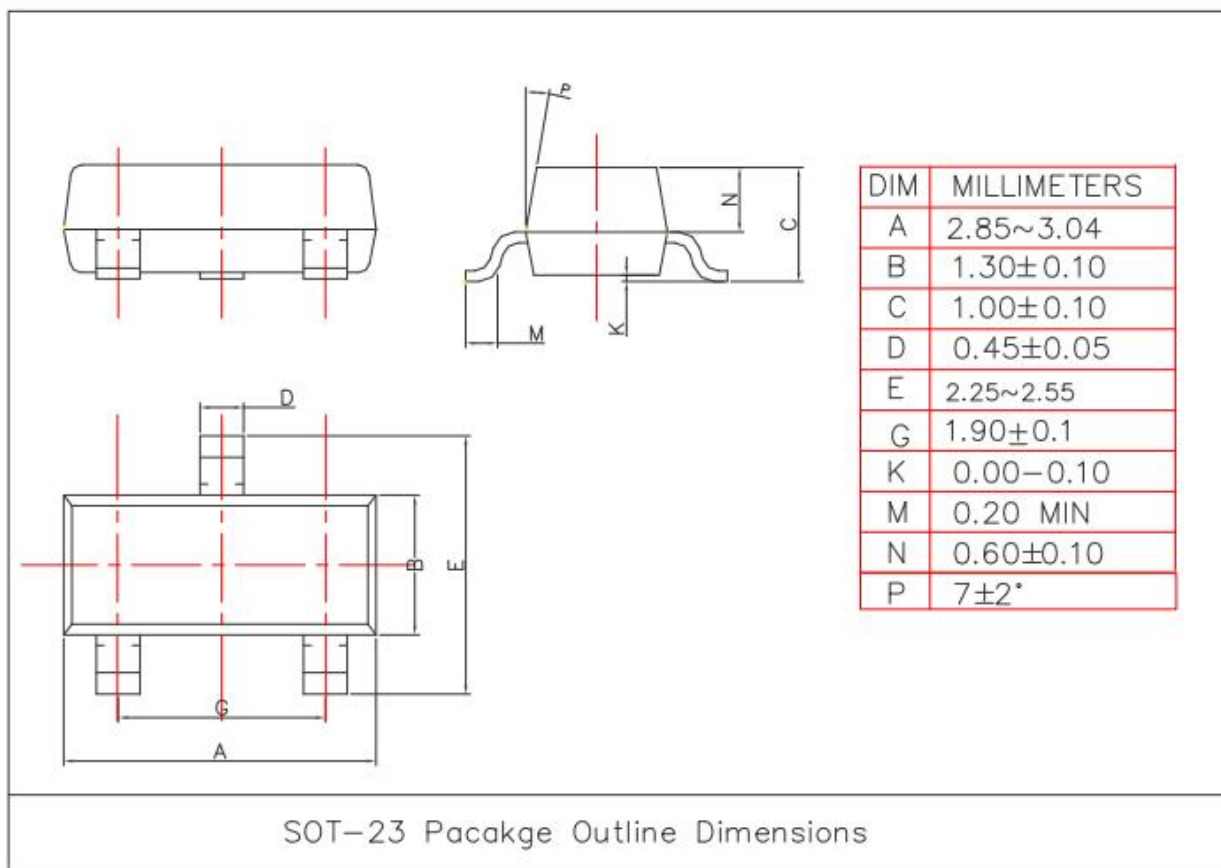


## »Marking Information

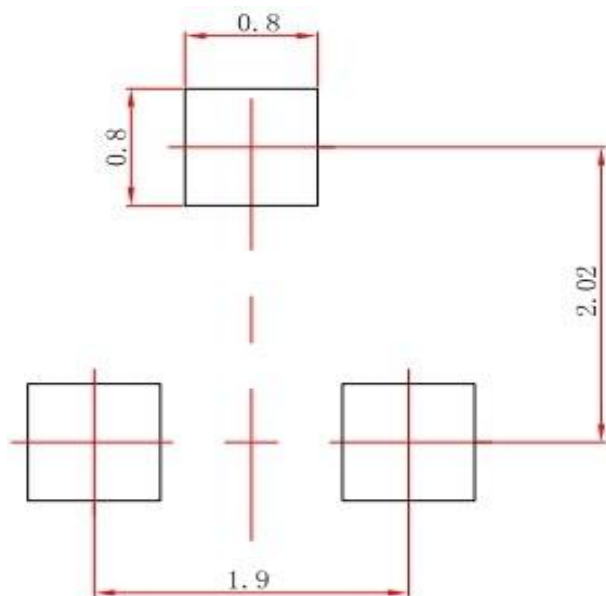


| Package | SOT-23   | Description                     |
|---------|----------|---------------------------------|
| A1      | PN code  |                                 |
| Y       | Yesr     | 0-9,A-Z , F=2020, G=2021.....   |
| WW      | Weeks    | Ex. 10/27=44weeks, 11/3=45weeks |
| S       | Assembly | Ass. Code                       |

## »Package Outline : SOT-23



## »SOT-23 FOOTPRINT:(mm)



## »Ordering information

| Order code | Package | Base qty | Delivery mode |
|------------|---------|----------|---------------|
| CT7002M    | SOT-23  | 3k       | Tape and reel |