

## »Features

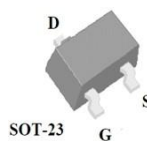
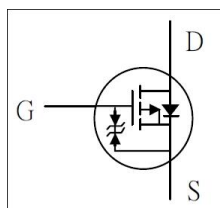
- Capable of 2.5V Gate Driver
- Small Package Outline
- Surface Mount Device
- RoHS Compliant & Halogen-Free

|            |      |
|------------|------|
| BVDSS      | -20V |
| RDS(ON)typ | 30mΩ |
| ID         | 4A   |

## »Description

CT3415M 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@T<sub>j</sub>=25°C(unless otherwise specified)

| Symbol                               | Parameter   | Rating     | Units |
|--------------------------------------|---|------------|-------|
| V <sub>DS</sub>                      | Drain-Source Voltage                              | -20        | V     |
| V <sub>GS</sub>                      | Gate-Source Voltage                               | ±8         | V     |
| I <sub>D</sub> @T <sub>A</sub> =25°C | Drain Current, V <sub>GS</sub> @ 10V <sub>3</sub> | -4         | A     |
| I <sub>D</sub> @T <sub>A</sub> =70°C | Drain Current, V <sub>GS</sub> @ 10V <sub>3</sub> | -3         | A     |
| I <sub>DM</sub>                      | Pulsed Drain Current <sup>1</sup>                 | -10        | A     |
| P <sub>D</sub> @T <sub>A</sub> =25°C | Total Power Dissipation <sub>3</sub>              | 0.25       | W     |
| T <sub>STG</sub>                     | Storage Temperature Range                         | -55 to 150 | °C    |
| T <sub>J</sub>                       | Operating Junction Temperature Range              | 150        | °C    |

## »Thermal Data

| Symbol             | Parameter   | Value | Unit |
|--------------------|---|-------|------|
| R <sub>thj-a</sub> | Maximum Thermal Resistance, Junction-ambient <sub>3</sub> | 100   | °C/W |

**»Electrical Characteristics@T<sub>j</sub>=25 °C(unless otherwise specified)**

| Symbol              | Parameter                         | Test Conditions   | Min. | Typ. | Max. | Units |
|---------------------|-----------------------------------|-------------------|------|------|------|-------|
| BV <sub>DSS</sub>   | Drain-Source Breakdown Voltage    | VGS=0V, ID=250uA  | -20  | -    | -    | V     |
| RDS(ON)             | Static Drain-Source On-Resistance | VGS=-4.5V, ID=-4A | -    | 30   | 50   | mΩ    |
|                     |                                   | VGS=-2.5V, ID=-3A | -    | 40   | 60   | mΩ    |
| V <sub>GS(th)</sub> | Gate Threshold Voltage            | VDS=VGS, ID=250uA | -0.3 | -0.6 | -1   | V     |
| g <sub>fs</sub>     | Forward Transconductance          | VDS=5V, ID=-4A    | 8    | -    | -    | S     |
| I <sub>DSS</sub>    | Drain-Source Leakage Current      | VDS=-16V, VGS=0V  | -    | -    | -1   | uA    |
| I <sub>GSS</sub>    | Gate-Source Leakage               | VGS=±8V, VDS=0V   | -    | -    | ±10  | uA    |
| Q <sub>g</sub>      | Total Gate Charge                 | ID=-4A            | -    | 17.2 | -    | nC    |
| Q <sub>gs</sub>     | Gate-Source Charge                | VDS=-10V          | -    | 1.3  | -    | nC    |
| Q <sub>gd</sub>     | Gate-Drain ("Miller") Charge      | VGS=-4.5V         | -    | 4.5  | -    | nC    |
| t <sub>d(on)</sub>  | Turn-on Delay Time                | VDS=-10V          | -    | 9.5  | -    | ns    |
| t <sub>r</sub>      | Rise Time                         | ID=-2A            | -    | 17   | -    | ns    |
| t <sub>d(off)</sub> | Turn-off Delay Time               | RG=3Ω             | -    | 94   | -    | ns    |
| t <sub>f</sub>      | Fall Time                         | VGS=-4.5V         | -    | 35   | -    | ns    |
| C <sub>iss</sub>    | Input Capacitance                 | VGS=0V            | -    | 1450 | -    | pF    |
| C <sub>oss</sub>    | Output Capacitance                | VDS=-10V          | -    | 205  | -    | pF    |
| Crss                | Reverse Transfer Capacitance      | f=1.0MHz          | -    | 160  | -    | pF    |

**»Source-Drain Diode**

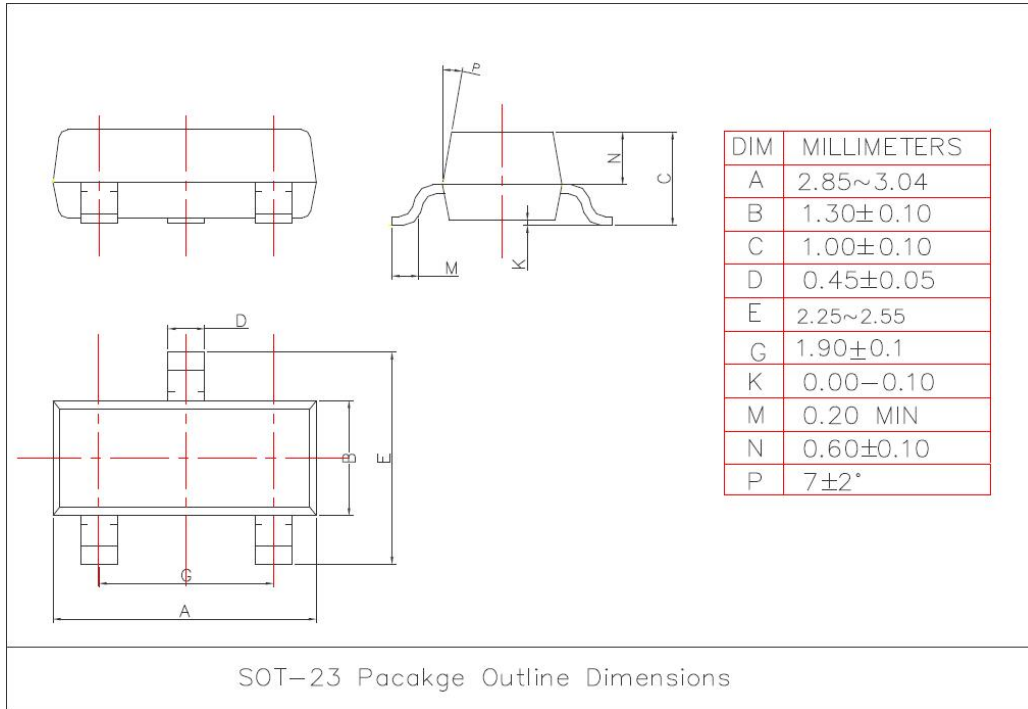
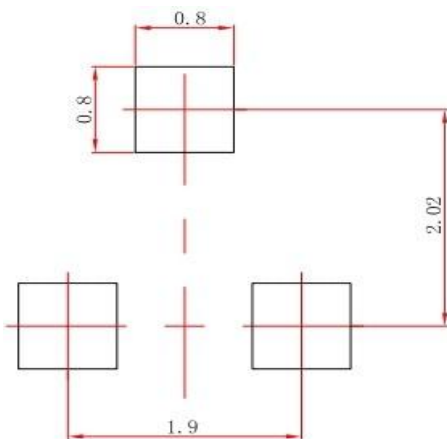
| Symbol          | Parameter                       | Test Conditions | Min. | Typ. | Max. | Units |
|-----------------|---------------------------------|-----------------|------|------|------|-------|
| V <sub>SD</sub> | Forward On Voltage <sup>2</sup> | IS=4A, VGS=0V   | -    | -    | -1.2 | V     |

**Notes:**

1.Pulse width limited by Max. junction temperature.

2.Pulse test

3.Surface mounted on 1 in<sup>2</sup> 2oz copper pad of FR4 board, t ≤10sec ; 300°C/W when mounted on min. copper pad.

**»Package Outline : SOT-23**

**»SOT-23 FOOTPRINT: (mm)**

**»Ordering information**

| Order code | Package | Base qty | Delivery mode |
|------------|---------|----------|---------------|
| CT3415M    | SOT-23  | 3k       | Tape and reel |