

## »Features

- Fast Switching Characteristic
- Low Gate Charger
- Small Footprint & Low Profile Package
- RoHS Compliant & Halogen-Free

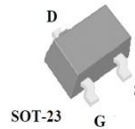
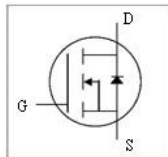
BV <sub>DSS</sub>	30V
R <sub>DS(ON)typ</sub>	22mΩ
I <sub>D</sub>	5.8A

## »Description

CT3400M 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

The SOT-23 package is widely preferred for commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

## »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	30	V
V <sub>GS</sub>	Gate-Source Voltage	±12	V
I <sub>D</sub> @T <sub>A</sub> =25°C	Drain Current, V <sub>GS</sub> @ 10V <sub>3</sub>	5.8	A
I <sub>D</sub> @T <sub>A</sub> =70°C	Drain Current, V <sub>GS</sub> @ 10V <sub>3</sub>	4.8	A
I <sub>DM</sub>	Pulsed Drain Current <sup>1</sup>	20	A
P <sub>D</sub> @T <sub>A</sub> =25°C	Total Power Dissipation <sub>3</sub>	0.4	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>	62.5	°C/W

## »Electrical Characteristics@T<sub>J</sub>=25 oC(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> =250uA	30	-	-	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance <sup>2</sup>	V <sub>GS</sub> =10V, I <sub>D</sub> =5.8A	-	22	35	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =5A	-	25	40	mΩ
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =4A	-	37	52	mΩ
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250uA	0.7	0.95	1.2	V
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =5V, I <sub>D</sub> =5A	8	-	-	S
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V	-	-	1	uA
I <sub>GSS</sub>	Gate-Source Leakage	V <sub>GS</sub> =±12V, V <sub>DS</sub> =0V	-	-	±100	nA
Q <sub>g</sub>	Total Gate Charge <sup>2</sup>	I <sub>D</sub> =5A	-	17.25	-	nC
Q <sub>gs</sub>	Gate-Source Charge	V <sub>DS</sub> =10V	-	2.1	-	nC
Q <sub>gd</sub>	Gate-Drain ("Miller") Charge	V <sub>GS</sub> =6V	-	2	-	nC
t <sub>d(on)</sub>	Turn-on Delay Time	V <sub>DS</sub> =15V I <sub>D</sub> =5A R <sub>G</sub> =3Ω V <sub>GS</sub> =10V	-	4.4	-	ns
t <sub>r</sub>	Rise Time		-	28.2	-	ns
t <sub>d(off)</sub>	Turn-off Delay Time		-	16.2	-	ns
t <sub>f</sub>	Fall Time		-	26	-	ns
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> =0V	-	630	-	pF
C <sub>oss</sub>	Output Capacitance	V <sub>DS</sub> =25V	-	55	-	pF
C <sub>rss</sub>	Reverse Transfer Capacitance	f=1.0MHz	-	71	-	pF
R <sub>g</sub>	Gate Resistance	f=1.0MHz	-	1.9	-	Ω

## »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> =1A, V <sub>GS</sub> =0V	-	-	1.2	V

### Notes:

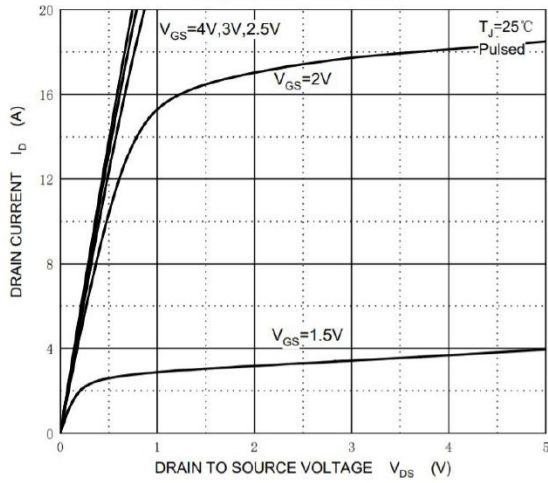
1.Pulse width limited by Max. junction temperature.

2.Pulse test

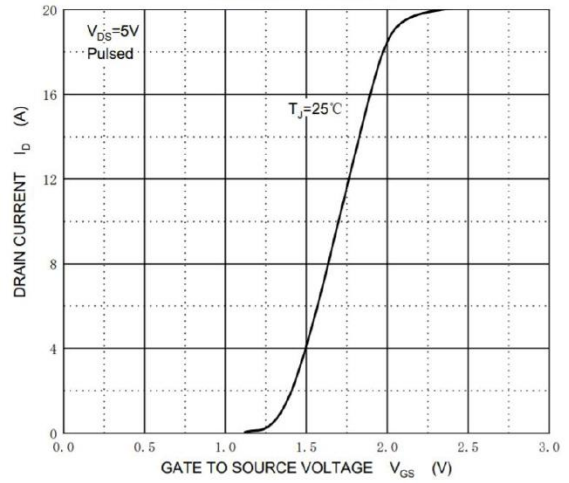
3.Surface mounted on 1 in<sup>2</sup> 2oz copper pad of FR4 board, t ≤10sec ; 300°C/W when mounted on min. copper pad.

## Typical Performance Characteristics

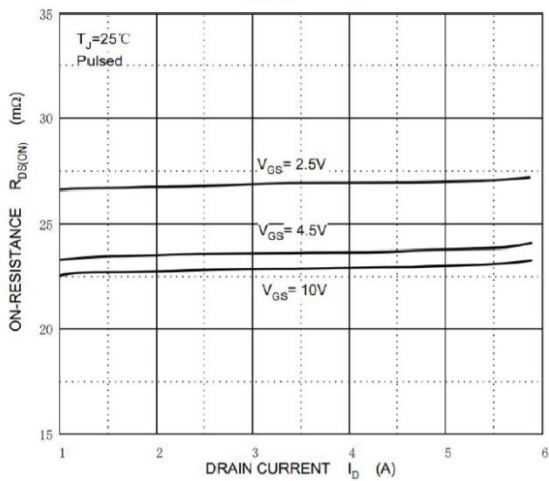
Output Characteristics



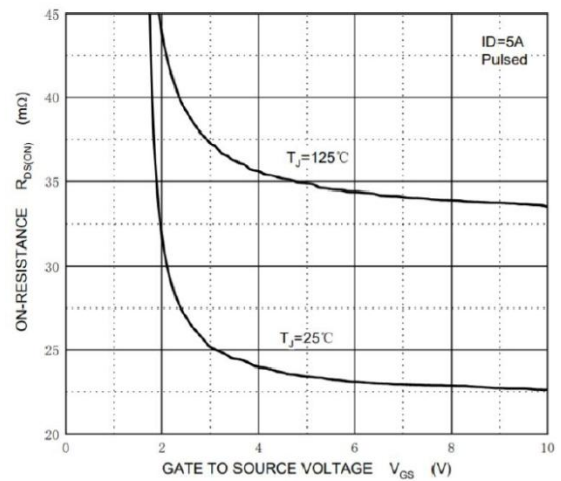
Transfer Characteristics



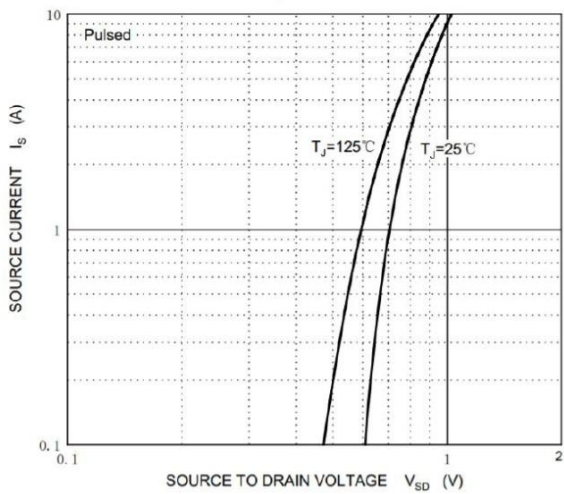
$R_{DS(ON)}$  —  $I_D$



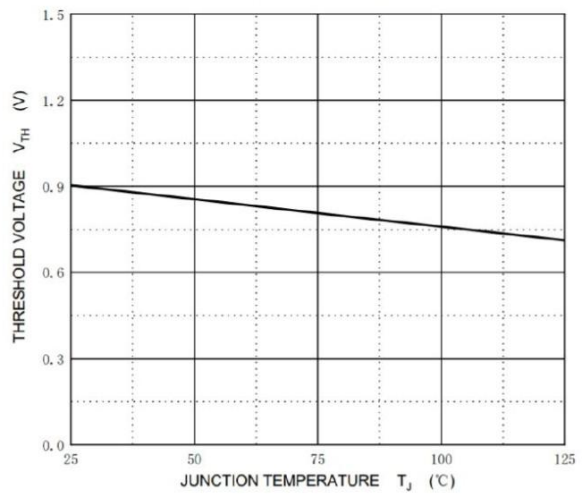
$R_{DS(ON)}$  —  $V_{GS}$



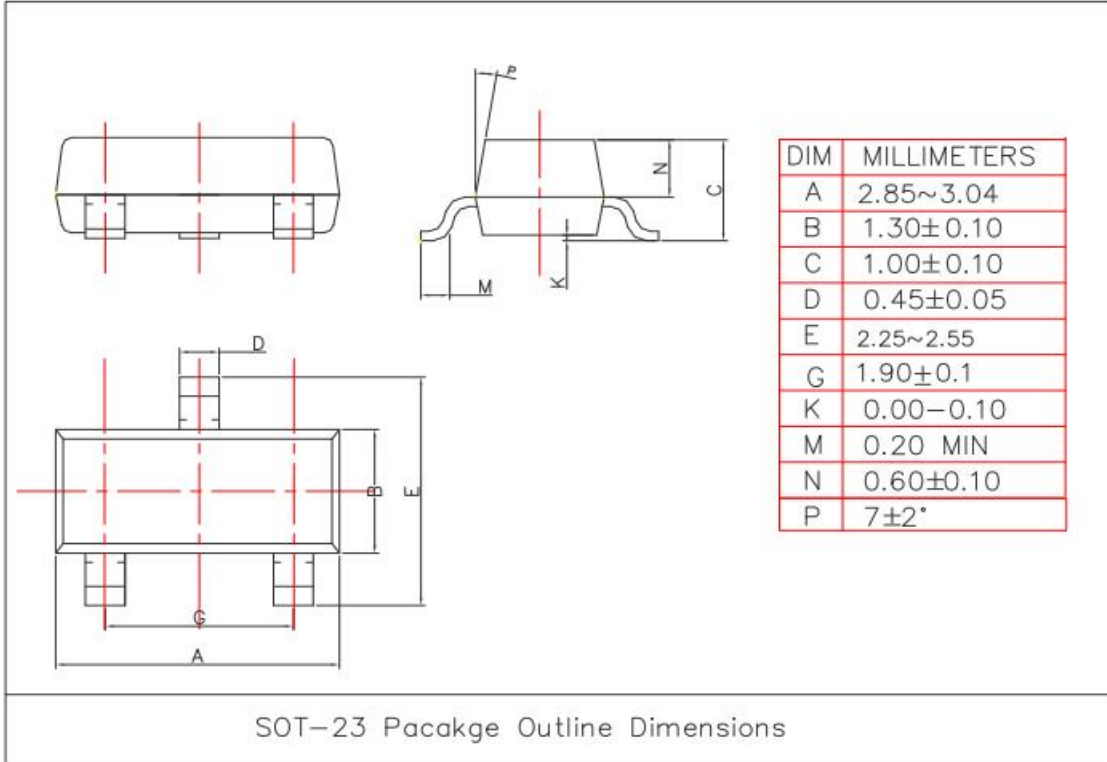
$I_S$  —  $V_{SD}$



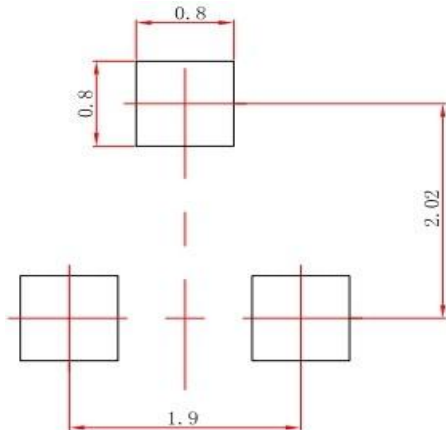
Threshold Voltage



## »Package Outline : SOT-23



## »SOT-23 FOOTPRINT: (mm)



## »Ordering information

Order code	Package	Base qty	Delivery mode
CT3400M	SOT-23	3k	Tape and reel