

### General Description

The CMN3402ZM uses advanced trench technology to provide excellent  $R_{DS(ON)}$ , low gate charge and operation with gate voltages as low as 1.5V. This device is suitable for use as a load switch or in PWM applications.

### Features

- $R_{DS(ON)} < 33m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} < 55m\Omega @ V_{GS}=4.5V$
- Simple drive requirement
- Surface mount package

### Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	30	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D @ T_A=25^\circ C$	Continuous Drain Current	4.6	A
$I_{DM}$	Pulsed Drain Current	18.4	A
$P_D @ T_A=25^\circ C$	Total Power Dissipation	1	W
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ C$
$T_J$	Operating Junction Temperature Range	-55 to 150	$^\circ C$

### Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	125	$^\circ C/W$

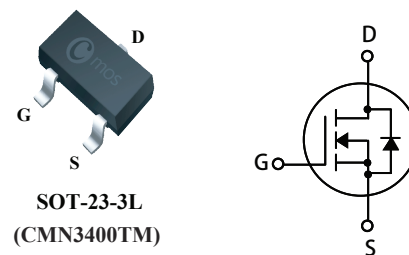
### Product Summary

BVDSS	$R_{DS(ON)}$	ID
30V	33m $\Omega$	4.6A

### Applications

- DC/DC Converter
- Load Switch for Portable Devices

### SOT-23-3L Pin Configuration



Type	Package	Marking
CMN3402ZM	SOT-23-3L	3402

N-Channel Enhancement Mode Field Effect Transistor

Electrical Characteristics (T<sub>J</sub>=25°C , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
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	V <sub>GS</sub> =10V , I <sub>D</sub> =6A	---	---	33	mΩ
		V <sub>GS</sub> =4.5V , I <sub>D</sub> =5A	---	---	55	
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250uA	1.0	---	3.0	V
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =24V , V <sub>GS</sub> =0V	---	---	1	uA
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> = ±20V , V <sub>DS</sub> =0V	---	---	±100	nA
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =5V , I <sub>D</sub> =5A	---	15	---	S
Q <sub>g</sub>	Total Gate Charge	I <sub>D</sub> =4A	---	6	---	nC
Q <sub>gs</sub>	Gate-Source Charge	V <sub>DS</sub> = 15V	---	1.2	---	
Q <sub>gd</sub>	Gate-Drain Charge	V <sub>GS</sub> = 4.5V	---	3	---	
T <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DS</sub> = 15V	---	3	---	ns
T <sub>r</sub>	Rise Time	R <sub>GEN</sub> =3.3Ω	---	35	---	
T <sub>d(off)</sub>	Turn-Off Delay Time	V <sub>GS</sub> =10V	---	14	---	
T <sub>f</sub>	Fall Time	I <sub>D</sub> =4A	---	5	---	
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =15V , V <sub>GS</sub> =0V , f=1MHz	---	320	---	pF
C <sub>oss</sub>	Output Capacitance		---	60	---	
C <sub>rss</sub>	Reverse Transfer Capacitance		---	53	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I <sub>S</sub>	Continuous Source Current	V <sub>G</sub> =V <sub>D</sub> =0V , Force Current	---	---	4.6	A
I <sub>SM</sub>	Pulsed Source Current		---	---	18.4	A
V <sub>SD</sub>	Diode Forward Voltage	V <sub>GS</sub> =0V , I <sub>S</sub> =1A , T <sub>J</sub> =25°C	---	---	1.2	V
t <sub>rr</sub>	Reverse Recovery Time	I <sub>F</sub> =4A , T <sub>J</sub> =25°C	---	8.7	---	ns
Q <sub>rr</sub>	Reverse Recovery Charge		di/dt =100 A/μs	---	2.3	---

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