

N-Channel Enhancement Mode Field Effect Transistor

General Description

The CMN3400M uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a load switch or in PWM applications.

Features

- $R_{DS(ON)} < 32m\Omega$ @ $V_{GS} = 4.5V$
- $R_{DS(ON)} < 46m\Omega$ @ $V_{GS} = 2.5V$
- Simple drive requirement
- Surface mount package

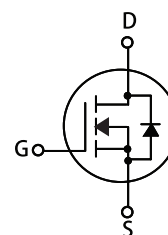
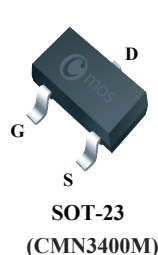
Product Summary

BVDSS	$R_{DS(ON)}$	ID
30V	32m Ω	6A

Applications

- PWM applications
- Load switch
- Power management
- PA Switch

SOT-23 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	± 12	V
$I_D @ T_C = 25^\circ C$	Continuous Drain Current	6	A
I_{DM}	Pulsed Drain Current	18	A
$P_D @ T_C = 25^\circ C$	Total Power Dissipation	1.4	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 (Steady State)	---	89	$^\circ C/W$

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Electrical Characteristics ($T_J=25\text{ }^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=4.5V$, $I_D=5A$	---	24	32	$m\Omega$
		$V_{GS}=2.5V$, $I_D=4A$	---	35	46	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	0.5	---	1.5	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=24V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 12V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V$, $I_D=5A$	---	10	---	S
Q_g	Total Gate Charge	$I_D=5.8A$	---	13	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=15V$	---	2	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	3	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=15V$	---	6	---	ns
T_r	Rise Time	$R_L=6\Omega$	---	4	---	
$T_{d(off)}$	Turn-Off Delay Time	$V_{GS}=10V$	---	16	---	
T_f	Fall Time	$R_{GEN}=3\Omega$	---	5	---	
C_{iss}	Input Capacitance	$V_{DS}=15V$, $V_{GS}=0V$, $f=1MHz$	---	650	---	pF
C_{oss}	Output Capacitance		---	50	---	
C_{rss}	Reverse Transfer Capacitance		---	40	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=1A$	---	---	1	V

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