

N-Channel Enhancement Mode Field Effect Transistor

General Description

The CMN2308MS is the N-Channel logic enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance.

Features

- RDS(ON)<76mΩ @ VGS=10V
- RDS(ON)<110mΩ @ VGS=4.5V
- Exceptional on-resistance and maximum DC current capability
- SOT-23-3L Package

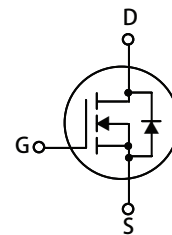
Product Summary

BVDSS	RDSON	ID
60V	76mΩ	3A

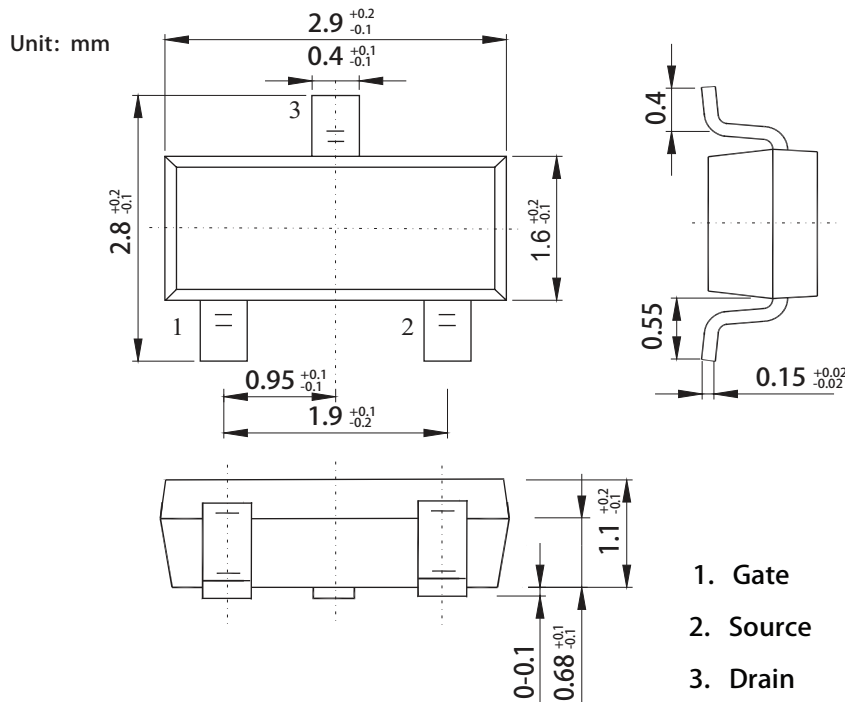
Applications

- DC-DC converters
- Portable Equipment
- Battery Powered System
- Load Switch

SOT-23-3L Pin Configuration



Type	Package	Marking
CMN2308MS	SOT-23-3L	E2MS



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	3	A
I_{DM}	Pulsed Drain Current	9	A
$P_D@T_C=25^\circ C$	Total Power Dissipation	1.6	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	Rating	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	100	$^\circ C/W$

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=5A$	---	---	76	m Ω
		$V_{GS}=4.5V, I_D=4A$	---	---	110	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=48V, V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
gfs	Forward Transconductance	$V_{DS}=5V, I_D=5A$	---	5	---	S
R_g	Gate Resistance	$V_{DS}=0V, V_{GS}=0V, f=1MHz$	---	25	---	Ω
Q_g	Total Gate Charge	$I_D=1.7A$	---	9.5	---	nC
Q_{gs}	Gate-Source Charge	$V_{DD}=20V$	---	1.7	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=0$ to 10V	---	1.5	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=30V$	---	---	30	ns
T_r	Rise Time	$I_D=1A$	---	1.5	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=6\Omega$	---	5	---	
T_f	Fall Time	$V_{GS}=10V$	---	1.5	---	
C_{iss}	Input Capacitance	$V_{DS}=15V, V_{GS}=0V, f=1MHz$	---	500	---	pF
C_{oss}	Output Capacitance		---	37	---	
C_{rss}	Reverse Transfer Capacitance		---	25	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_S=2A$	---	---	1.2	V

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