

General Description

The CMN2N10M combines advanced trench MOSFET technology with a low resistance package to provide extremely low RDS(ON). This device is ideal for boost converters and synchronous rectifiers for consumer, telecom, industrial power supplies and LED backlighting.

Features

- RDS(ON)<260mΩ @ VGS=10V
- RDS(ON)<290mΩ @ VGS=4.5V
- SOT-23-3L Package

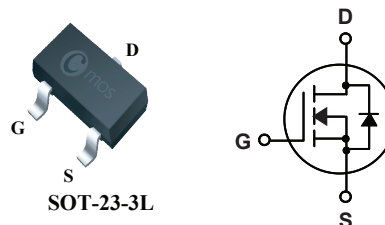
Product Summary

BVDSS	RDS(on) max.	ID
100V	260mΩ	2A

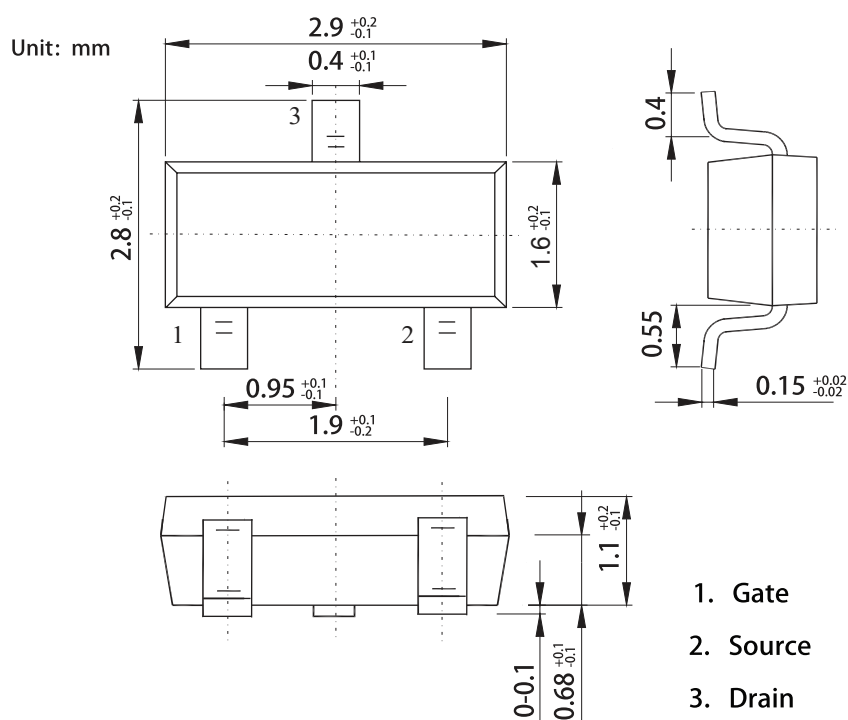
Applications

- DC-DC converters
- Load Switch
- System Switch

SOT-23-3L Pin Configuration



Type	Package	Marking
CMN2N10M	SOT-23-3L	2N10M



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_A=25^\circ\text{C}$	Continuous Drain Current	2	A
$I_D@T_A=70^\circ\text{C}$	Continuous Drain Current	1.5	A
I_{DM}	Pulsed Drain Current	8	A
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation	1.25	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	100	$^\circ\text{C}/\text{W}$

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0\text{V}$, $I_D=250\mu\text{A}$	100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10\text{V}$, $I_D=1\text{A}$	---	235	260	mΩ
		$V_{GS}=4.5\text{V}$, $I_D=0.5\text{A}$	---	250	290	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu\text{A}$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=100\text{V}$, $V_{GS}=0\text{V}$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20\text{V}$, $V_{DS}=0\text{V}$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10\text{V}$, $I_D=20\text{A}$	---	2.5	---	S
Q_g	Total Gate Charge	$V_{DS}=80\text{V}$, $I_D=1\text{A}$ $V_{GS}=10\text{V}$	---	10	---	nC
Q_{gs}	Gate-Source Charge		---	1.5	---	
Q_{gd}	Gate-Drain Charge		---	1.7	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=50\text{V}$, $V_{GS}=10\text{V}$, $R_G=3.3\Omega$ $I_D=1\text{A}$	---	2	---	ns
T_r	Rise Time		---	20	---	
$T_{d(off)}$	Turn-Off Delay Time		---	15	---	
T_f	Fall Time		---	21	---	
C_{iss}	Input Capacitance	$V_{DS}=25\text{V}$, $V_{GS}=0\text{V}$, $f=1\text{MHz}$	---	425	---	pF
C_{oss}	Output Capacitance		---	12	---	
C_{rss}	Reverse Transfer Capacitance		---	5	---	

Diode Characteristics

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

This product has been designed and qualified for the consumer market.

Cmos assumes no liability for customers' product design or applications.

Cmos reserves the right to improve product design, functions and reliability without notice. Please refer to the latest version of specification.

Typical Characteristics

