

General Description

These miniature surface mount MOSFETs utilize High Cell Density process. Low $R_{DS(on)}$ assures minimal power loss and conserves energy, making this device ideal for use in power management circuitry. Typical applications are DC-DC converters, power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

Features

- $R_{DS(ON)} < 40m\Omega$ @ $V_{GS} = 4.5V$
- $R_{DS(ON)} < 60m\Omega$ @ $V_{GS} = 2.5V$
- SOT-23-3L Package

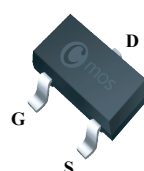
Product Summary

BVDSS	RDSON	ID
20V	40mΩ	4A

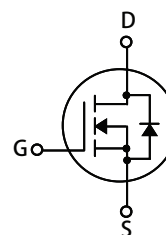
Applications

- DC-DC converters
- Power Management in Notebook Computer
- Portable Equipment and Battery Powered Systems

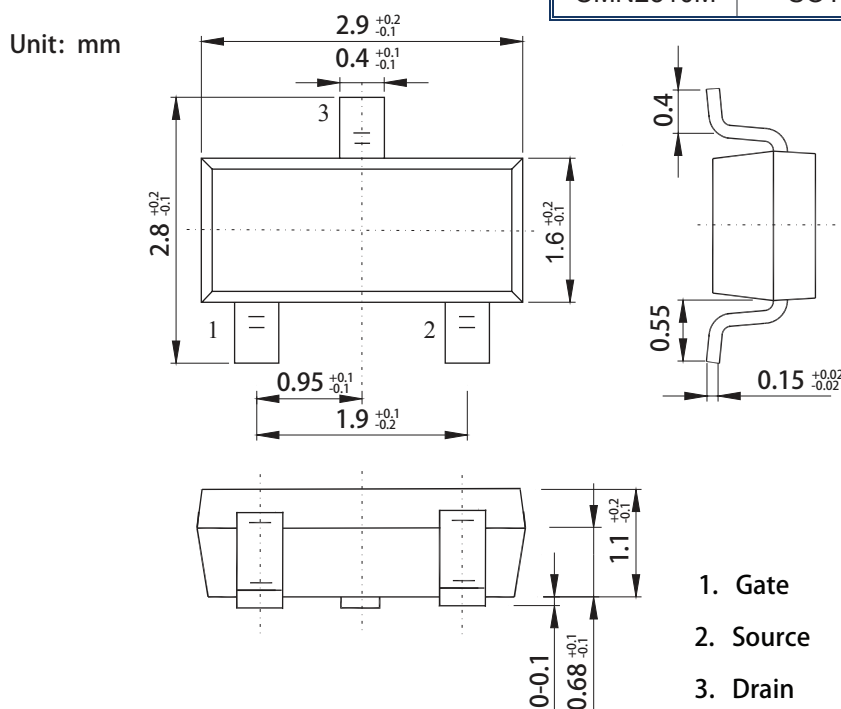
SOT-23-3L Pin Configuration



SOT-23-3L
(CMN2310M)



Type	Package	Marking
CMN2310M	SOT-23-3L	00A8C



N-Channel Enhancement Mode Field Effect Transistor

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	± 10	V
I_D	Continuous Drain Current	4	A
I_{DM}	Pulsed Drain Current	15	A
P_D	Total Power Dissipation	1.25	W
T_{STG}	Storage Temperature Range	-55 to 150	$^{\circ}\text{C}$
T_J	Operating Junction Temperature Range	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 ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0\text{V}$, $I_D=250\mu\text{A}$	20	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=4.5\text{V}$, $I_D=3.5\text{A}$	---	---	40	m Ω
		$V_{GS}=2.5\text{V}$, $I_D=2.6\text{A}$	---	---	60	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu\text{A}$	0.55	---	1	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=20\text{V}$, $V_{GS}=0\text{V}$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 10\text{V}$, $V_{DS}=0\text{V}$	---	---	± 100	nA
Q_g	Total Gate Charge	$I_D=3.5\text{A}$	---	16	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=10\text{V}$	---	2.5	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=4.5\text{V}$	---	5.4	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=10\text{V}$, $I_D=1\text{A}$, $R_{GEN}=6\Omega$	---	32	---	ns
T_r	Rise Time		---	15	---	
$T_{d(off)}$	Turn-Off Delay Time		---	50	---	
T_f	Fall Time		---	32	---	
C_{iss}	Input Capacitance	$V_{DS}=15\text{V}$, $V_{GS}=0\text{V}$, $f=1\text{MHz}$	---	650	---	pF
C_{oss}	Output Capacitance		---	140	---	
C_{rss}	Reverse Transfer Capacitance		---	115	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	$V_{GS}=0\text{V}$, $I_S=1.25\text{A}$	---	---	1.2	V

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