

General Description

This MOSFET utilizes a unique structure that combines the benefits of low on-resistance with fast switching speed, making it ideal for high-efficiency power management applications.

Features

- $R_{DS(ON)} < 200\text{m}\Omega$ @ $V_{GS} = -10\text{V}$
- SOT-23-3L package

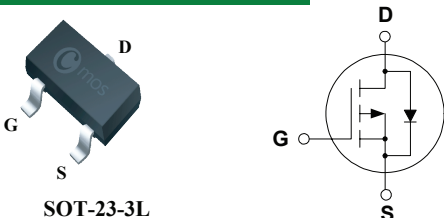
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
-100V	200m Ω	-1.5A

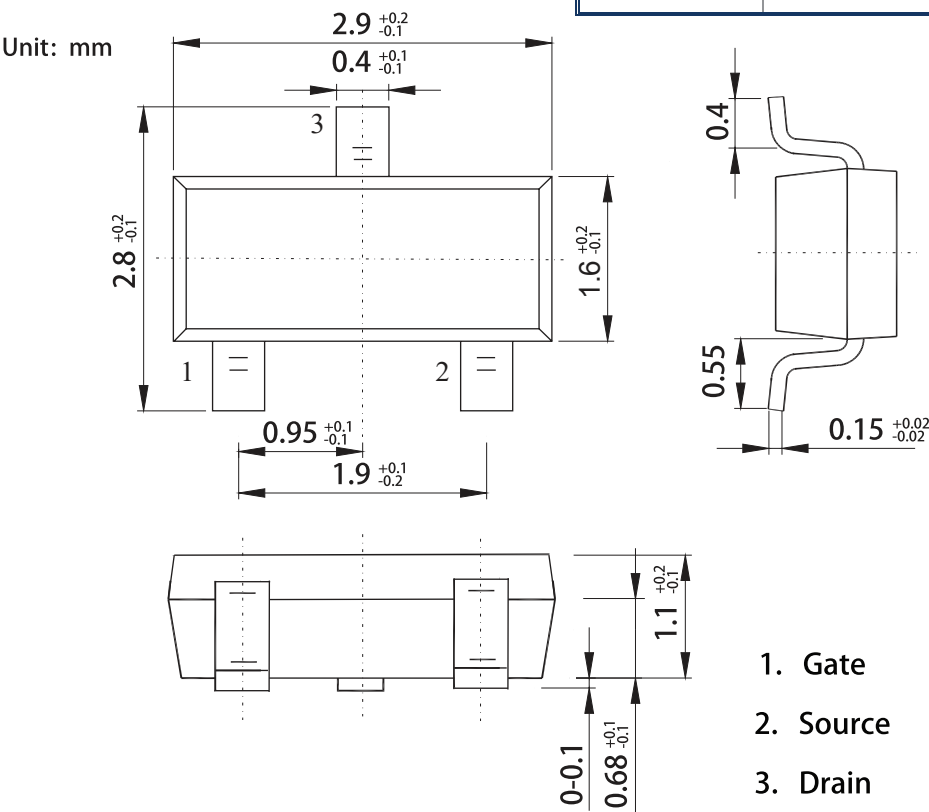
Applications

- DC-DC converters
- Relay and solenoid driving
- Power management functions
- Load switch

SOT-23-3L Pin Configuration



Type	Package	Marking
CMN1029M	SOT-23-3L	1029



P-Channel Enhancement Mode Field Effect Transistor

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-100	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current	-1.5	A
I_{DM}	Pulsed Drain Current	-5	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	150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient ($t \leq 5s$)	---	120	$^\circ\text{C/W}$

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu\text{A}$	-100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V, I_D=-1A$	---	---	200	m Ω
		$V_{GS}=-4.5V, I_D=-1A$	---	---	250	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=-250\mu\text{A}$	-1.0	---	-3.0	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-80V, V_{GS}=0V$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=-10V, I_D=-2A$	---	5.3	---	S
R_g	Gate Resistance	$V_{DS}=0V, V_{GS}=0V, f=1\text{MHz}$	---	17	---	Ω
Q_g	Total Gate Charge	$I_D=-2A$	---	15	---	nC
Q_{gs}	Gate-Source Charge	$V_{DD}=-50V$	---	4	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=-4.5V$	---	7	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=-30V, R_G=3\Omega$ $I_D=-1A, V_{GS}=-10V$	---	38	---	ns
T_r	Rise Time		---	18	---	
$T_{d(off)}$	Turn-Off Delay Time		---	51	---	
T_f	Fall Time		---	6	---	
C_{iss}	Input Capacitance	$V_{DS}=-25V, V_{GS}=0V, f=1\text{MHz}$	---	1400	---	pF
C_{oss}	Output Capacitance		---	55	---	
C_{rss}	Reverse Transfer Capacitance		---	13	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_S=-5A$	---	---	-1.2	V

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Typical Characteristics

