CMN2309M

P-Channel Enhancement Mode Field Effect Transistor

General Description

The CMN2309M is P-channel enhancement mode Power MOSFET, designed in serried ranks. With fast switching speed, low on-resistance, favorable stabilization.

Used in commercial and industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

Features

- RDS(ON)<165mΩ @ VGS=-10V
- RDS(ON)<220mΩ @ VGS=-4.5V
- Simple drive requirement
- Surface mount package

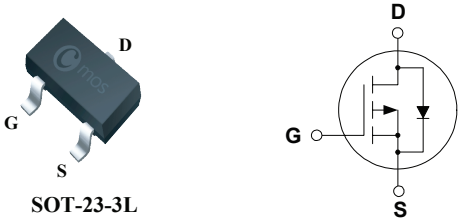
Product Summary

BVDSS	RDSON	ID
-60V	165mΩ	-2A

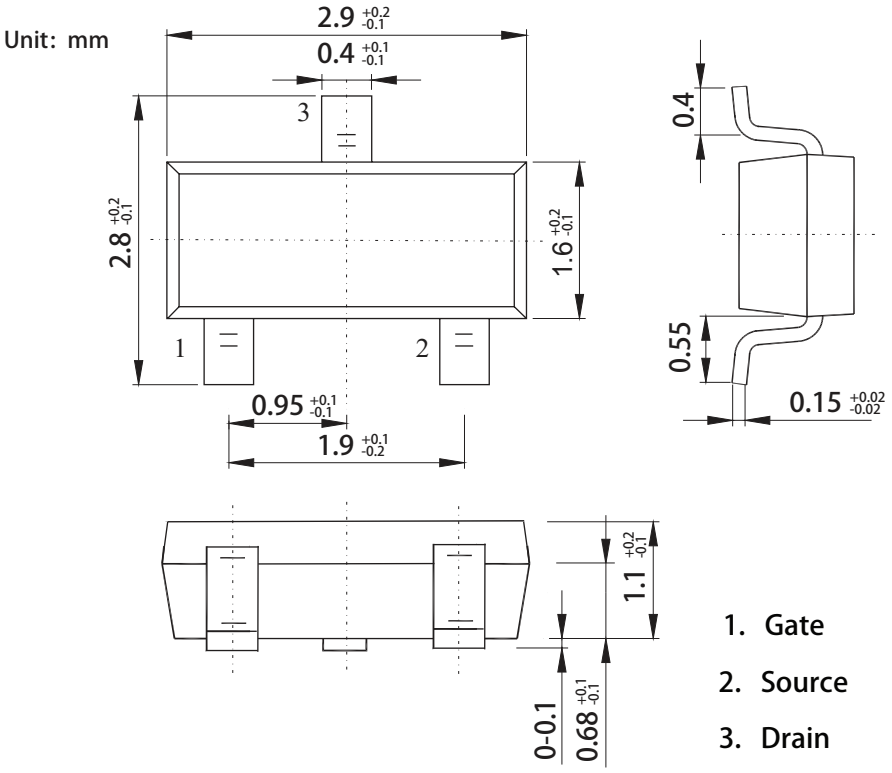
Applications

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

SOT-23-3L Pin Configuration



Type	Package	Marking
CMN2309M	SOT-23-3L	E11M



1. Gate
2. Source
3. Drain

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Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current	-2	A
I_{DM}	Pulsed Drain Current [b]	-6	A
P_D@T_A=25℃	Total Power Dissipation	1	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient [a]	---	150	℃/W

Electrical Characteristics (T_A=25℃ , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=-250uA	-60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V , I_D=-1.6A	---	---	165	mΩ
		V_{GS}=-4.5V , I_D=-1.4A	---	---	220	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250uA	-1	---	-3	V
I_{DSS}	Zero gate voltage drain current	V_{DS}=-48V , V_{GS}=0V	---	---	-1	uA
		V_{GS}= 0V , V_{DS}=-48V , T_A=55℃	---	---	-10	
I_{GSS}	Gate-Body Leakage current	V_{GS}=±20V , V_{DS}=0V	---	---	±100	nA
Q_g	Total Gate Charge	I_D=-1.25A V_{DS}=-30V V_{GS}=-10V	---	9	---	nC
Q_{gs}	Gate-Source Charge		---	2	---	
Q_{gd}	Gate-Drain Charge		---	1.5	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=-30V R_{GEN}=6Ω I_D=-1A V_{GS}=-10V	---	7	---	ns
T_r	Rise Time		---	10	---	
$T_{d(off)}$	Turn-Off Delay Time		---	16	---	
T_f	Fall Time		---	5	---	
C_{iss}	Input Capacitance	V_{DS}=-30V , V_{GS}=0V , f=1MHz	---	500	---	pF
C_{oss}	Output Capacitance		---	50	---	
C_{rss}	Reverse Transfer Capacitance		---	20	---	

Diode Characteristics

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

Notes：

a. Surface Mounted on 1in^2 pad area, t ≤ 10sec.

b. Pulse Width<300μs; Duty Cycle<2.0%