CMN3100M

N-Channel Enhancement Mode Field Effect Transistor

General Description

The CMN3100M uses advanced trench technology to provide excellent RDS(ON), low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a load switch or in PWM applications.

Features

- RDS(ON)<17mΩ @ VGS=10V
- RDS(ON)<25mΩ @ VGS=4.5V
- Simple drive requirement
- Surface mount package

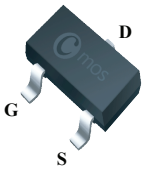
Product Summary

BVDSS	RDSON	ID
30V	17mΩ	10A

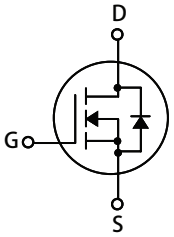
Applications

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

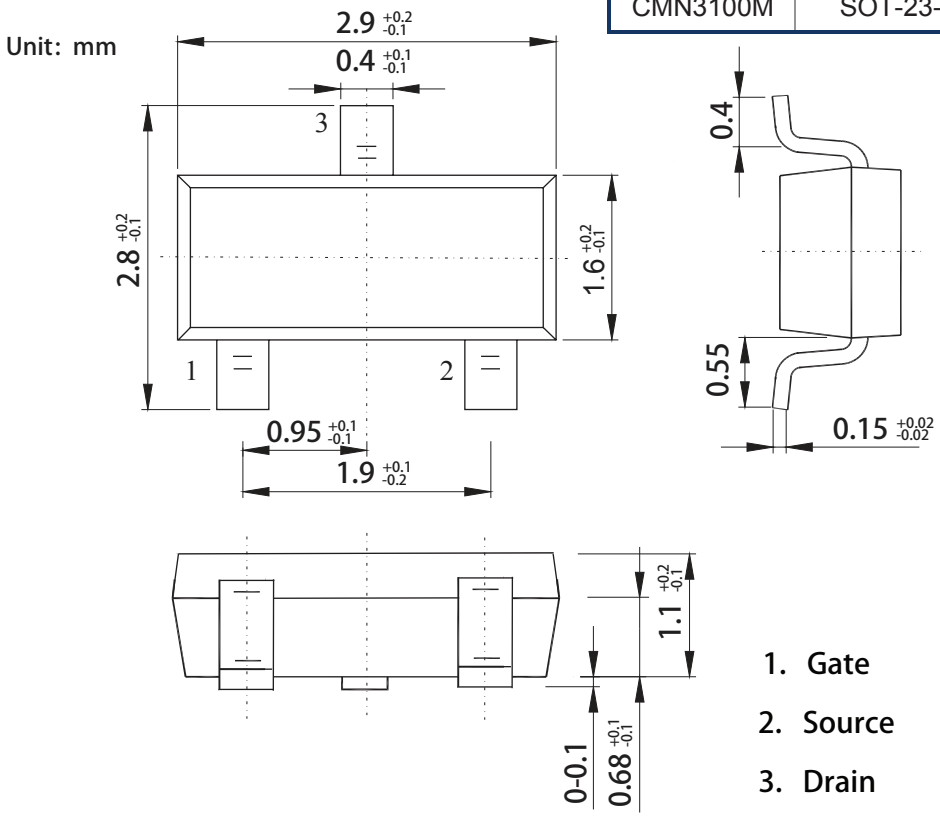
SOT-23-3L Pin Configuration



SOT-23-3L
(CMN3100M)



Type	Package	Marking
CMN3100M	SOT-23-3L	3100



1. Gate
2. Source
3. Drain

N-Channel Enhancement Mode Field Effect Transistor

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_A=25℃	Continuous Drain Current	10	A
I_{DM}	Pulsed Drain Current	30	A
P_D@T_A=25℃	Total Power Dissipation	1.4	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	---	62.5	℃/W

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=10A	---	---	17	mΩ
		V_{GS}=4.5V , I_D=5.5A	---	---	25	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	1	---	2.2	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=24V , V_{GS}=0V	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}= ±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=5V , I_D=1A	---	5	---	S
Q_g	Total Gate Charge	I_D=6.5A	---	9	---	nC
Q_{gs}	Gate-Source Charge	V_{DS}=15V	---	1.6	---	
Q_{gd}	Gate-Drain Charge	V_{GS}=10V	---	3.4	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=15V	---	6	---	ns
T_r	Rise Time	I_D=6.5A	---	15	---	
$T_{d(off)}$	Turn-Off Delay Time	V_{GS}=10V	---	30	---	
T_f	Fall Time	R_{GEN}=6Ω	---	8	---	
C_{iss}	Input Capacitance	V_{DS}=15V , V_{GS}=0V , f=1MHz	---	800	---	pF
C_{oss}	Output Capacitance		---	100	---	
C_{rss}	Reverse Transfer Capacitance		---	75	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=2A	---	0.8	1.3	V

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