CMN2308M

N-Channel Enhancement Mode Field Effect Transistor

General Description

The CMN2308M uses advanced trench technology to provide excellent RDS(ON). This device is suitable for use as a Battery protection or in other switching application.

Features

- RDS(ON)<65mΩ @ VGS=10V
- RDS(ON)<80mΩ @ VGS=4.5V
- SOT-23-3L Package

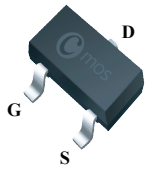
Product Summary

BVDSS	RDSON	ID
60V	65mΩ	6.5A

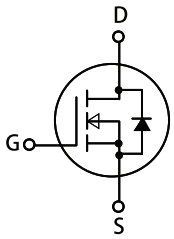
Applications

- DC-DC converters
- Load Switch
- System Switch

SOT-23-3L Pin Configuration

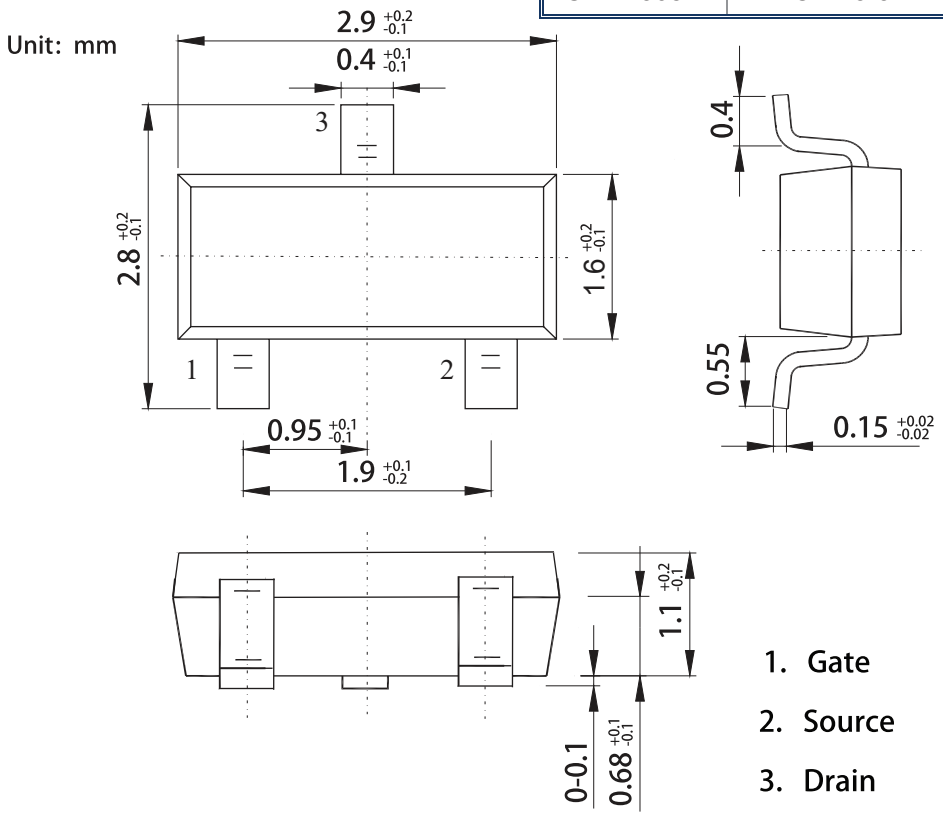


SOT-23-3L



Type	Package	Marking
CMN2308M	SOT-23-3L	E2M

Unit: mm



1. Gate
2. Source
3. Drain

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	6.5	A
I_{DM}	Pulsed Drain Current	19	A
P_D	Total Power Dissipation	1.25	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

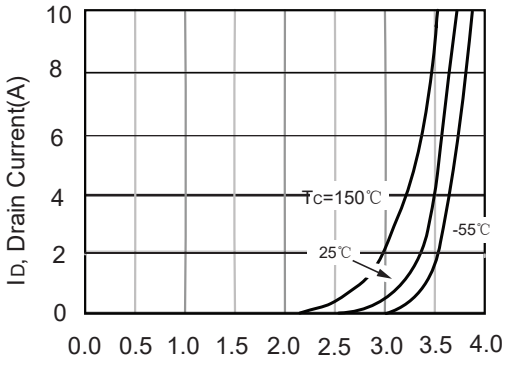
Electrical Characteristics (T_J=25℃ , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=5.3A	---	---	65	mΩ
		V_{GS}=4.5V , I_D=4.7A	---	---	80	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	0.95	---	2.5	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=48V , 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=0.5A	---	4	---	S
Q_g	Total Gate Charge	V_{DS}=30V , I_D=3A V_{GS}=4.5V	---	7	---	nC
Q_{gs}	Gate-Source Charge		---	2	---	
Q_{gd}	Gate-Drain Charge		---	2.8	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=30V , R_{GEN}=25Ω I_D=0.2A	---	18	---	ns
T_r	Rise Time		---	15	---	
$T_{d(off)}$	Turn-Off Delay Time		---	50	---	
T_f	Fall Time		---	10	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	1000	---	pF
C_{oss}	Output Capacitance		---	600	---	
C_{rss}	Reverse Transfer Capacitance		---	550	---	

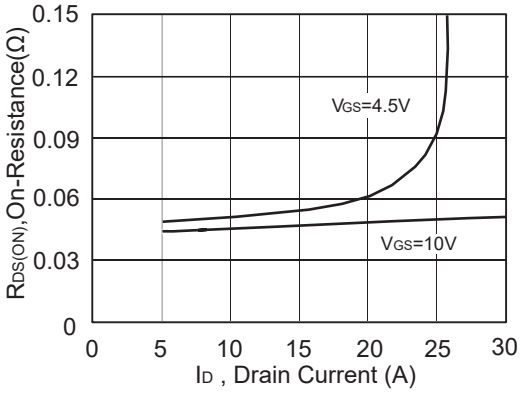
Diode Characteristics

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

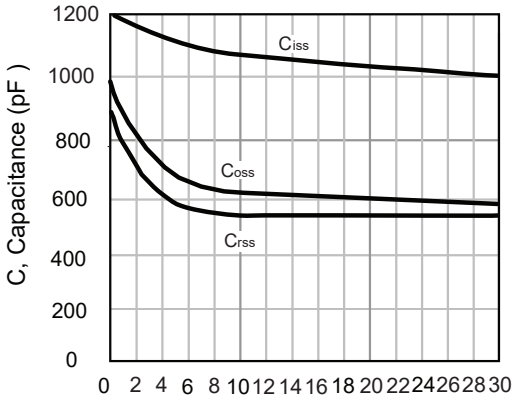
Typical Characteristics



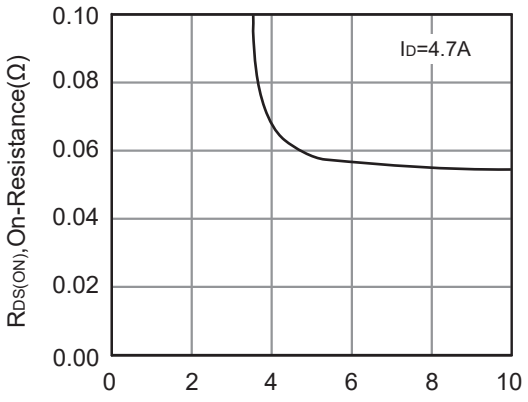
Transfer Characteristics



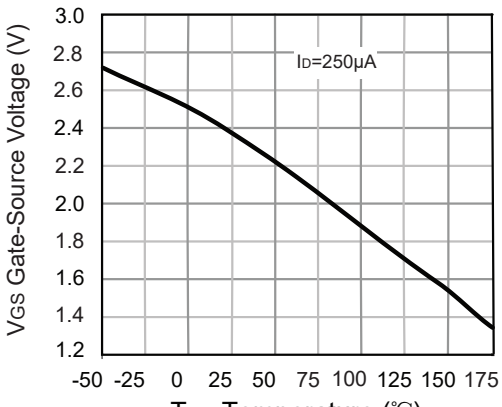
On-Resistance vs. Drain Current



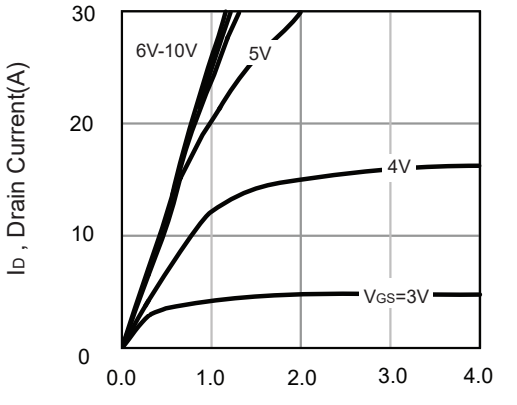
Capacitance Characteristics



On-Resistance vs. Gate-to-Source Voltage



Thereshold Voltage



On-Region Characteristics