CMN3416M

N-Channel Enhancement Mode Field Effect Transistor

General Description

The CMN3416M uses advanced trench technology to provide excellent RDS(ON) and low gate charge. This device is suitable for use as a load switch or in PWM applications. It is ESD protected.

Features

- RDS(ON)<24mΩ @ VGS=4.5V
- RDS(ON)<28mΩ @ VGS=2.5V
- SOT-23-3L Package
- ESD Protected：2000V

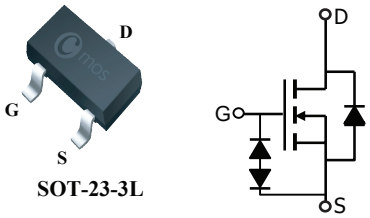
Product Summary

BVDSS	RDSON	ID
20V	24mΩ	6.5A

Applications

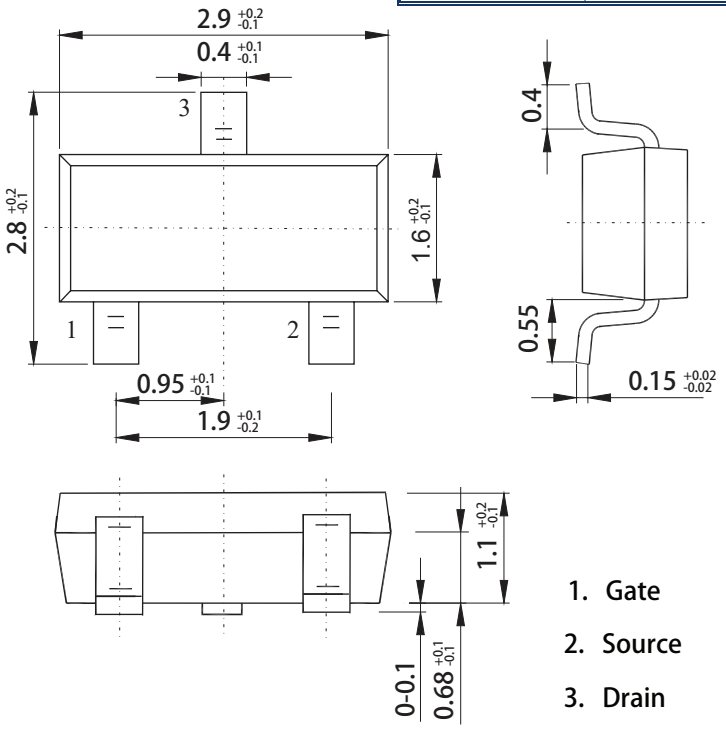
- PWM applications
- Load Switch
- Power Management
- PA Switch

SOT-23-3L Pin Configuration



Type	Package	Marking
CMN3416M	SOT-23-3L	AGSA

Unit: mm



1. Gate
2. Source
3. Drain

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Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	±8	V
I_D	Continuous Drain Current	6.5	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	-55 to 150	℃

Thermal Data

Symbol	Parameter	Rating	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient (PCB mounted)	140	℃/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	20	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=4.5V , I_D=6.5A	---	---	24	mΩ
		V_{GS}=2.5V , I_D=5.5A	---	---	28	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	0.4	---	1.0	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=16V , V_{GS}=0V	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS} =±8V , V_{DS}=0V	---	---	±10	uA
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	125	---	Ω
Q_g	Total Gate Charge	I_D=6.5A V_{DS}=10V V_{GS}=4.5V	---	10	---	nC
Q_{gs}	Gate-Source Charge		---	1.4	---	
Q_{gd}	Gate-Drain Charge		---	2.7	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=10V , I_D=1A R_L=1.5Ω R_G=3Ω V_{GEN}=5V	---	6.2	---	ns
T_r	Rise Time		---	12.7	---	
$T_{d(off)}$	Turn-Off Delay Time		---	51.7	---	
T_f	Fall Time		---	16	---	
C_{iss}	Input Capacitance	V_{DS}=10V , V_{GS}=0V , f=1MHz	---	470	---	pF
C_{oss}	Output Capacitance		---	104	---	
C_{rss}	Reverse Transfer Capacitance		---	29	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=1A	---	---	1.2	V