CMN5N20

N-Channel Enhancement Mode Field Effect Transistor

General Description

The CMN5N20 combines advanced trench MOSFET technology with a low resistance package to provide extremely low RDS(ON).This device is suitable for use as a Battery protection or in other Switching application.

Features

- RDS(ON)<530mΩ @ VGS=10V
- SOT-23-3L Package

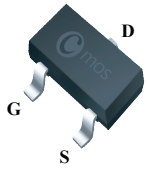
Product Summary

BVDSS	RDSON	ID
200V	530mΩ	4A

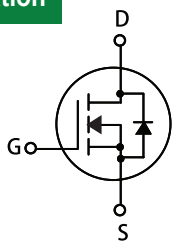
Applications

- DC-DC converters
- Load switch
- Uninterruptible power supply

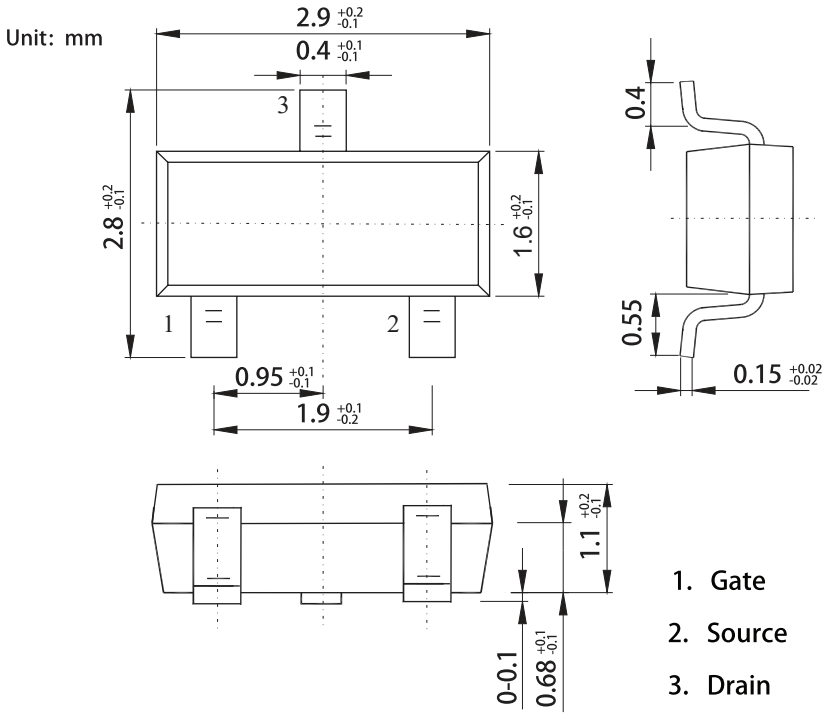
SOT-23-3L Pin Configuration



SOT-23-3L



Type	Package	Marking
CMN5N20	SOT-23-3L	5N20



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	200	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_A=25℃	Continuous Drain Current	4	A
I_{DM}	Pulsed Drain Current	12	A
P_D@T_A=25℃	Total Power Dissipation	2	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	85	℃/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	200	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=2.5A	---	---	530	mΩ
		V_{GS}=3.5V , I_D=2.5A	---	---	560	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	1.0	---	3.0	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=200V , V_{GS}=0V	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}= ±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=10V , I_D=2A	---	4	---	S
Q_g	Total Gate Charge	I_D=1A V_{DS}=160V V_{GS}=10V	---	15	---	nC
Q_{gs}	Gate-Source Charge		---	3	---	
Q_{gd}	Gate-Drain Charge		---	5.2	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=100V R_G=3Ω I_D=1A V_{GS}=10V	---	22	---	ns
T_r	Rise Time		---	35	---	
$T_{d(off)}$	Turn-Off Delay Time		---	45	---	
T_f	Fall Time		---	11	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	700	---	pF
C_{oss}	Output Capacitance		---	25	---	
C_{rss}	Reverse Transfer Capacitance		---	12	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=4A	---	0.88	1.2	V

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