

General Description

The CMN1052M combines advanced trench MOSFET technology with a low resistance package to provide extremely low RDS(ON). This device is ideal for boost converters and synchronous rectifiers for consumer, telecom, industrial power supplies and LED backlighting.

Features

- RDS(ON)<160mΩ @ VGS=10V
- RDS(ON)<270mΩ @ VGS=4.5V
- SOT-23-3L Package

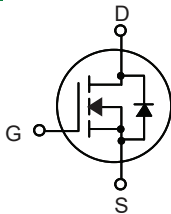
Product Summary

BVDSS	RDS(on) max.	ID
100V	160mΩ	3A

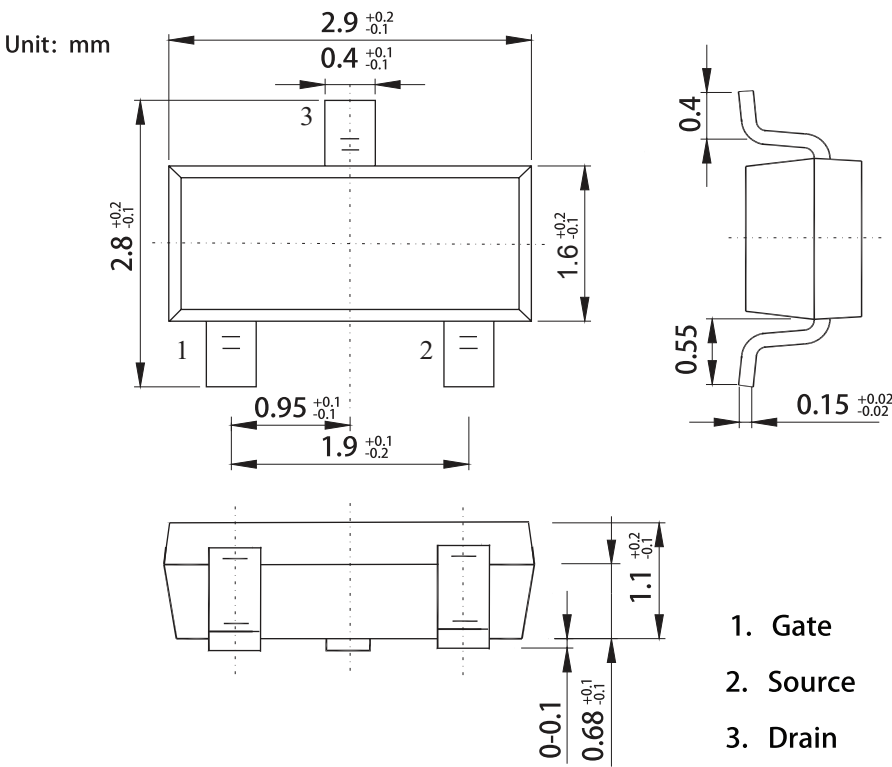
Applications

- DC-DC converters
- Load Switch
- System Switch

SOT-23-3L Pin Configuration



Type	Package	Marking
CMN1052M	SOT-23-3L	1052



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	±20	V
$I_{D@T_A=25^{\circ}C}$	Continuous Drain Current	3	A
I_{DM}	Pulsed Drain Current	10	A
$P_{D@T_A=25^{\circ}C}$	Total Power Dissipation	2.8	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	45	°C/W

Electrical Characteristics ($T_J=25^{\circ}C$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=2.5A$	---	135	160	mΩ
		$V_{GS}=4.5V$, $I_D=2A$	---	180	270	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1.5	---	3.5	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=80V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	±100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V$, $I_D=2A$	---	4	---	S
Q_g	Total Gate Charge	$V_{DS}=50V$, $I_D=1.2A$ $V_{GS}=10V$	---	6	---	nC
Q_{gs}	Gate-Source Charge		---	1	---	
Q_{gd}	Gate-Drain Charge		---	2	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=50V$, $V_{GS}=10V$, $R_{GEN}=2.5\Omega$ $I_D=1.2A$	---	12	---	ns
T_r	Rise Time		---	10	---	
$T_{d(off)}$	Turn-Off Delay Time		---	30	---	
T_f	Fall Time		---	9	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1MHz$	---	300	---	pF
C_{oss}	Output Capacitance		---	30	---	
C_{rss}	Reverse Transfer Capacitance		---	18	---	

Diode Characteristics

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

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