CMN1N40M

400V, 11Ω typ., 1A N-Channel MOSFET

General Description

These Power MOSFETs are produced using Cmos's proprietary, planar stripe, DMOS technology.These devices are well suited for a wide range of switching and amplifying applications.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
400V	13Ω	1A

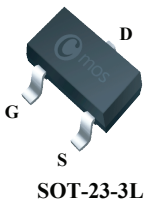
Applications

- DC/DC Converter

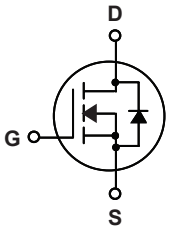
Features

- RDS(ON)<13Ω @ VGS=10V
- SOT-23-3L Package
- RoHS Compliant

SOT-23-3L Pin Configuration

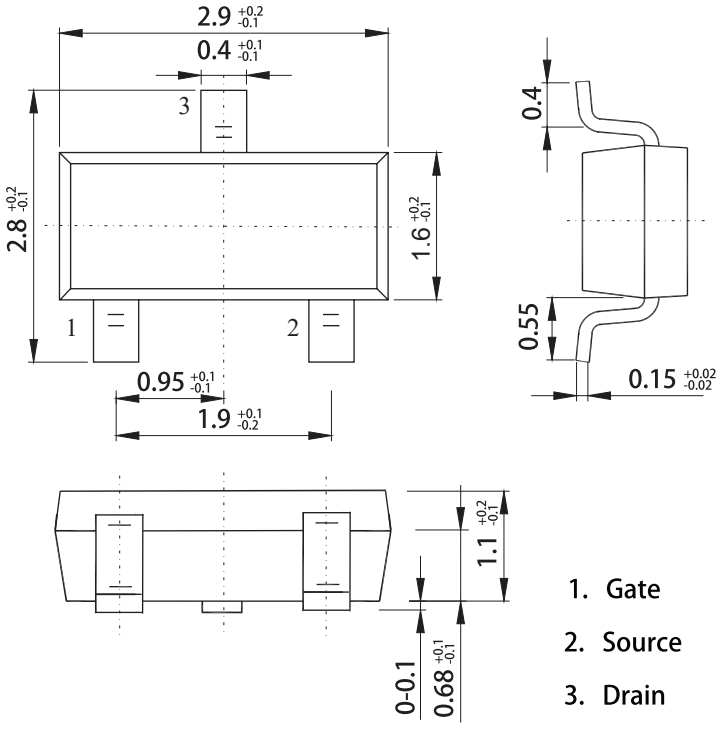


SOT-23-3L



Type	Package	Marking
CMN1N40M	SOT-23-3L	1N40M

Unit: mm



1. Gate
2. Source
3. Drain

400V, 11Ω typ., 1A N-Channel MOSFET

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	400	V
V_{GS}	Gate-Source Voltage	±20	V
I_D @T_A=25℃	Continuous Drain Current	1	A
I_{DM}	Pulsed Drain Current	4	A
P_D @T_A=25℃	Total Power Dissipation	0.5	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	250	℃/W

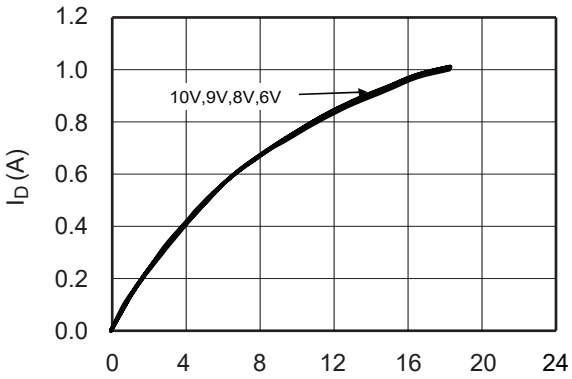
Electrical Characteristics (T_a=25℃ , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	400	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=1A	---	11	13	Ω
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250μA	1	---	3.0	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=400V , 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 =0.5A	---	1	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	0.5	---	Ω
Q_g	Total Gate Charge	I_D=1A	---	2.9	---	nC
Q_{gs}	Gate-Source Charge	V_{DS}=320V	---	0.6	---	
Q_{gd}	Gate-Drain Charge	V_{GS}=10V	---	0.6	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=200V	---	8	---	ns
T_r	Rise Time	I_D =1A	---	12	---	
$T_{d(off)}$	Turn-Off Delay Time	R_G =3.3Ω , R_D =200Ω	---	25	---	
T_f	Fall Time	V_{GS} =10V	---	75	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	75	---	pF
C_{oss}	Output Capacitance		---	11	---	
C_{rss}	Reverse Transfer Capacitance		---	1	---	

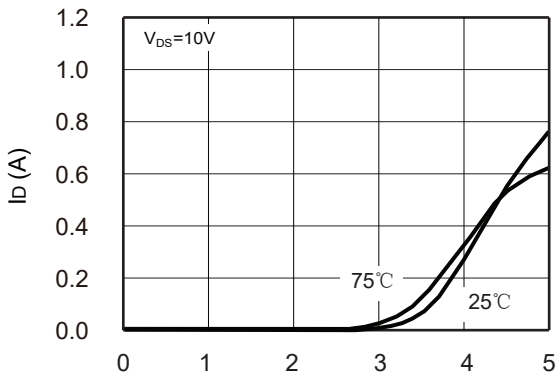
Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=1A	---	0.87	1.2	V

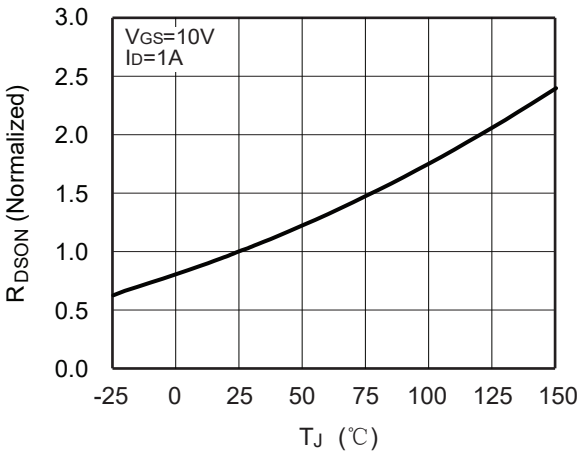
Typical Characteristics



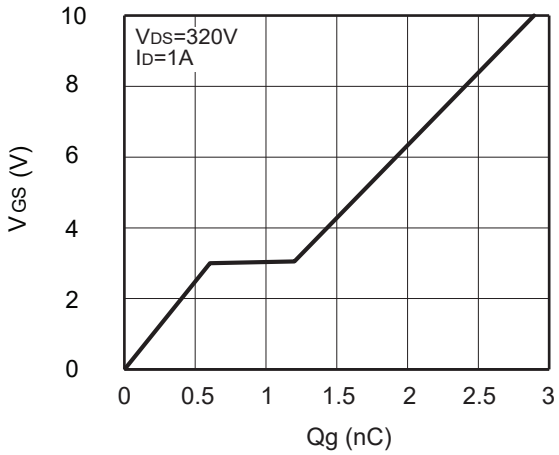
Output Characteristics



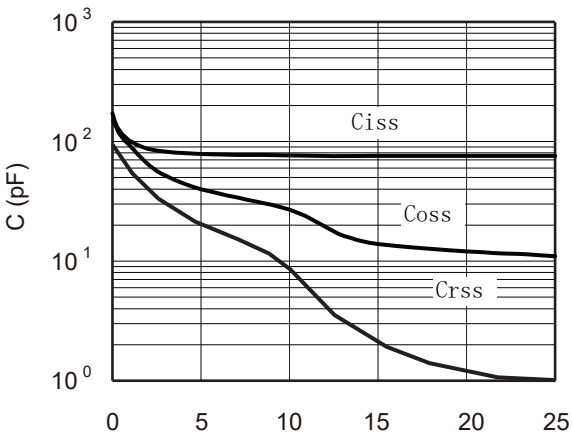
transfer characteristics



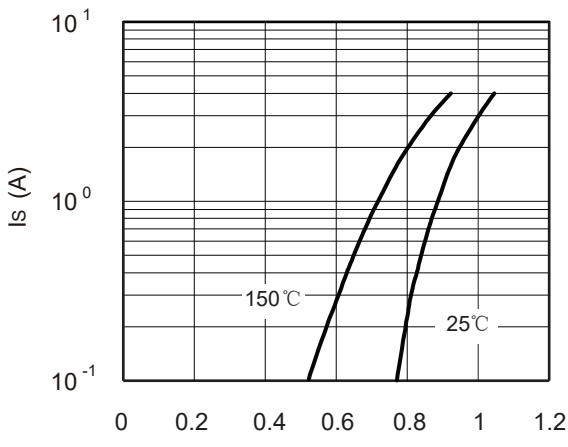
On-Resistance vs. Junction Temperature



Gate charge vs gate-source voltage



Capacitance Characteristics



Body-Diode Characteristics