CMN3100

N-Channel Enhancement Mode Field Effect Transistor

General Description

The CMN3100 uses advanced trench technology to provide excellent RDS(ON), low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a load switch or in PWM applications.

Features

- RDS(ON)<14mΩ @ VGS=10V
- RDS(ON)<16mΩ @ VGS=4.5V
- Simple drive requirement
- Surface mount package

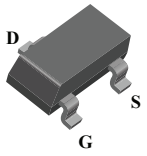
Product Summery

BVDSS	RDSON	ID
30V	14mΩ	8A

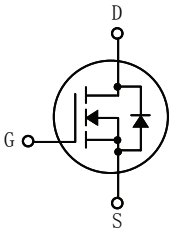
Applications

- PWM applications
- Load switch
- Power management
- PA Switch

SOT-23 Pin Configuration



SOT-23
(CMN3100)



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current	8	A
I_{DM}	Pulsed Drain Current	20	A
P_D@T_A=25°C	Total Power Dissipation	1.4	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient (Steady State)	---	125	°C/W

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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	30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=5A	---	---	14	mΩ
		V_{GS}=4.5V , I_D=3.5A	---	---	16	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	1	---	2	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=30V , V_{GS}=0V	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0V	---	---	±100	nA
$T_{d(on)}$	Turn-On Delay Time	V_{DS} = 10V , I_D =3A R_{GEN} =6 Ω	---	8.6	---	ns
$T_{d(off)}$	Turn-Off Delay Time		---	69	---	
C_{iss}	Input Capacitance	V_{DS}=10V , V_{GS}=0V , f=1MHz	---	550	---	pF
C_{oss}	Output Capacitance		---	120	---	
C_{rss}	Reverse Transfer Capacitance		---	50	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=1A	---	---	1.5	V