CMN5P04M

P-Channel Enhancement Mode Field Effect Transistor

General Description

The CMN5P04M 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.

Features

- RDS(ON)<85mΩ @ VGS=-10V
- RDS(ON)<110mΩ @ VGS=-4.5V
- Simple drive requirement
- Surface mount package

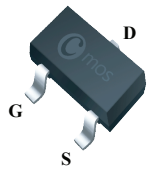
Product Summary

BVDSS	RDSON	ID
-40V	85mΩ	-5A

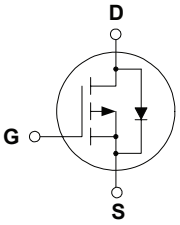
Applications

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

SOT-23 Pin Configuration



SOT-23



Type	Package	Marking
CMN5P04M	SOT-23	5P04M

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-40	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current	-5	A
I_{DM}	Pulsed Drain Current	-15	A
P_D@T_C=25℃	Total Power Dissipation	2.0	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 (Steady State)	---	125	℃/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	-40	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V , I_D=-2.5A	---	---	85	mΩ
		V_{GS}=-4.5V , I_D=-2A	---	---	110	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250uA	-1.0	---	-2.0	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-32V , V_{GS}=0V	---	---	-1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS} = ±20V, V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=-5V , I_D=-2A	---	7	---	S
Q_g	Total Gate Charge	I_D=-3.1A V_{DS}=-20V V_{GS}=-10V	---	15	---	nC
Q_{gs}	Gate-Source Charge		---	3	---	
Q_{gd}	Gate-Drain Charge		---	4	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=-20V R_G=3Ω V_{GS}=-10V	---	10	---	ns
T_r	Rise Time		---	9	---	
$T_{d(off)}$	Turn-Off Delay Time		---	29	---	
T_f	Fall Time		---	11	---	
C_{iss}	Input Capacitance	V_{DS}=-15V , V_{GS}=0V , f=1MHz	---	550	---	pF
C_{oss}	Output Capacitance		---	90	---	
C_{rss}	Reverse Transfer Capacitance		---	70	---	

Diode Characteristics

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

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