CMN2305

P-Channel Enhancement Mode Field Effect Transistor

General Description

The CMN2305 is P-channel enhancement mode Power MOSFET, designed in serried ranks. With fast switching speed, low on-resistance, favorable stabilization.

Used in commercial and industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

Product Summery

BVDSS	RDSON	ID
-20V	65mΩ	-3.9A

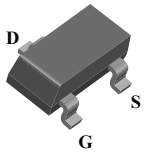
Applications

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

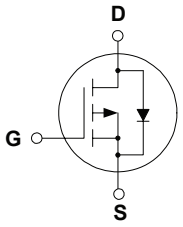
Features

- RDS(ON)<65mΩ @ VGS=-4.5V
- RDS(ON)<80mΩ @ VGS=-2.5V
- Simple drive requirement
- Surface mount package

SOT-23 Pin Configuration



SOT-23
(CMN2305)



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	±10	V
I_D@T_C=25°C	Continuous Drain Current	-3.9	A
I_{DM}	Pulsed Drain Current	-15	A
P_D@T_C=25°C	Total Power Dissipation	1.2	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	---	90	°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	-20	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-4.5V , I_D=-3.9A	---	---	65	mΩ
		V_{GS}=-2.5V , I_D=-2A	---	---	80	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250uA	-0.5	---	-1.5	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-16V , V_{GS}=0V	---	---	-1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±8V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=-5V , I_D=-4A	---	9	---	S
Q_g	Total Gate Charge	I_D=-3.5A V_{DS}=-4V V_{GS}=-4.5V	---	7.5	---	nC
Q_{gs}	Gate-Source Charge		---	1.4	---	
Q_{gd}	Gate-Drain Charge		---	1.2	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=-10V R_G=6Ω I_D=-2.8A	---	8	---	ns
T_r	Rise Time		---	21	---	
$T_{d(off)}$	Turn-Off Delay Time		---	60	---	
T_f	Fall Time		---	18	---	
C_{iss}	Input Capacitance	V_{DS}=-10V , V_{GS}=0V , f=1MHz	---	600	---	pF
C_{oss}	Output Capacitance		---	120	---	
C_{rss}	Reverse Transfer Capacitance		---	94	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=-0.75A	---	---	-1.5	V