CMN2300

N-Channel Enhancement Mode Field Effect Transistor

General Description

These miniature surface mount MOSFETs utilize High Cell Density process. Low rDS(on) assures minimal power loss and conserves energy, making this device ideal for use in power management circuitry. Typical applications are DC-DC converters, power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

Features

- RDS(ON)<25mΩ @ VGS=4.5V
- RDS(ON)<35mΩ @ VGS=2.5V
- SOT-23 Package

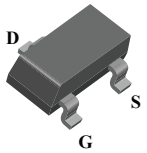
Product Summery

BVDSS	RDSON	ID
20V	25mΩ	6A

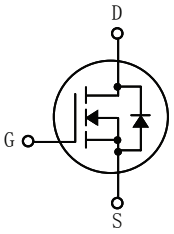
Applications

- DC-DC converters
- Power Management in Notebook Computer
- Portable Equipment and Battery Powered Systems

SOT-23 Pin Configuration



SOT-23
(CMN2300)



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	±8	V
I_D@T_C=25°C	Continuous Drain Current	6	A
I_{DM}	Pulsed Drain Current	18	A
P_D@T_C=25°C	Total Power Dissipation	1.25	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	---	100	°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=5.6A	---	---	25	mΩ
		V_{GS}=2.5V , I_D=4A	---	---	35	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	0.45	---	1.2	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	---	18	---	S
Q_g	Total Gate Charge	I_D=4A V_{DS}=10V V_{GS}=4.5V	---	9.0	---	nC
Q_{gs}	Gate-Source Charge		---	1.8	---	
Q_{gd}	Gate-Drain Charge		---	4.2	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=10V , I_D=3.5A , R_G=10 Ω	---	---	20	ns
$T_{d(off)}$	Turn-Off Delay Time		---	---	60	
C_{iss}	Input Capacitance	V_{DS}=10V , V_{GS}=0V , f=1MHz	---	---	650	pF
C_{oss}	Output Capacitance		---	---	150	
C_{rss}	Reverse Transfer Capacitance		---	---	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=0.75A	---	---	1.3	V