

CMD20N10L/CMU20N10L

100V, 55mΩ typ., 20A N-Channel MOSFET

General Description

The 20N10L uses advanced process technology and design to provide excellent RDS(ON). It can be used in a wide variety of applications.

Features

- Low On-Resistance
- 100% avalanche tested
- Simple Drive Requirements
- RoHS Compliant

Product Summary

BVDSS	R _{DS(on)} max.	ID
100V	62mΩ	20A

Applications

- DC/DC Converters
- Motor Drives

TO-252 / 251 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	100	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current	20	A
I _D @T _C =100°C	Continuous Drain Current	15	A
I _{DM}	Pulsed Drain Current	80	A
EAS	Single Pulse Avalanche Energy ¹	98	mJ
P _D @T _C =25°C	Total Power Dissipation	50	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 _{θJA}	Thermal Resistance Junction-ambient	---	60	°C/W
R _{θJC}	Thermal Resistance Junction -Case	---	2.5	°C/W

Electrical Characteristics (T_J=25°C , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =250uA	100	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =10A	---	55	62	mΩ
		V _{GS} =4.5V , I _D =5A	---	59	70	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1	---	2	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =100V , V _{GS} =0V , T _J =25°C	---	---	1	uA
		V _{DS} =100V , V _{GS} =0V , T _J =55°C	---	---	50	
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =5V , I _D =10A	---	15	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	2	---	Ω
Q _g	Total Gate Charge	V _{DS} =44V , V _{GS} =4.5V , I _D =25A	---	22.5	---	nC
Q _{gs}	Gate-Source Charge		---	3.6	---	
Q _{gd}	Gate-Drain Charge		---	9.4	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =30V , V _{GS} =5V , R _{load} =1.2Ω R _G =10Ω	---	13	---	ns
T _r	Rise Time		---	120	---	
T _{d(off)}	Turn-Off Delay Time		---	58	---	
T _f	Fall Time		---	57	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	1250	---	pF
C _{oss}	Output Capacitance		---	60	---	
C _{rss}	Reverse Transfer Capacitance		---	50	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	20	A
I _{SM}	Pulsed Source Current		---	---	80	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _F =10A , T _J =25°C	---	0.86	1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=50V , V_{GS}=10V , L=1mH , I_{AS}=14A.

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Typical Characteristics

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