CMD11N50/CMU11N50

500V, 0.68Ω typ., 11A N-Channel MOSFET

General Description

These Power MOSFETs are produced using Cmos's proprietary, planar stripe, DMOS technology.These devices are well suited for high efficient switching mode power supplies and active power factor correction.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
500V	0.75Ω	11A

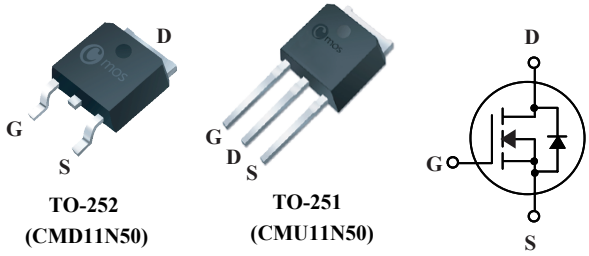
Applications

- Adapter
- Uninterruptible Power Supply
- Switched Mode Power Supplies

Features

- Fast switching
- 100% avalanche tested
- RoHS compliant

TO-252/251 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	500	V
V_{GS}	Gate-Source Voltage	±30	V
I_D@T_C=25℃	Continuous Drain Current	11	A
I_D@T_C=100℃	Continuous Drain Current	7	A
I_{DM}	Pulsed Drain Current	44	A
EAS	Single Pulse Avalanche Energy[1]	490	mJ
P_D@T_C=25℃	Total Power Dissipation	130	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	---	62.5	℃/W
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	0.96	℃/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	500	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=5.5A	---	0.68	0.75	Ω
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}= 450V , V_{GS}=0V , T_J=25℃	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}= ±30V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=20V, I_D=5.5A	---	9	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	1	---	Ω
Q_g	Total Gate Charge [3]	V_{DS}=250V , V_{GS}=10V, I_D=10A	---	44	---	nC
Q_{gs}	Gate-Source Charge		---	9	---	
Q_{gd}	Gate-Drain Charge		---	16	---	
$T_{d(on)}$	Turn-On Delay Time [3]	V_{DS}=300V , V_{GS}=10V , I_D=10A R_G =10Ω	---	15	---	ns
T_r	Rise Time		---	40	---	
$T_{d(off)}$	Turn-Off Delay Time		---	70	---	
T_f	Fall Time		---	60	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	1450	---	pF
C_{oss}	Output Capacitance		---	95	---	
C_{rss}	Reverse Transfer Capacitance		---	4	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	11	A
I_{SM}	Pulsed Source Current		---	---	44	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=11A , T_J=25℃	---	0.9	1.5	V

Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=80V , V_{GS}=10V , L=5mH , I_{AS} =14A.

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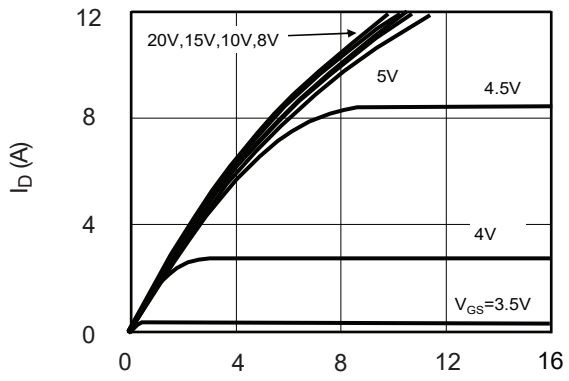
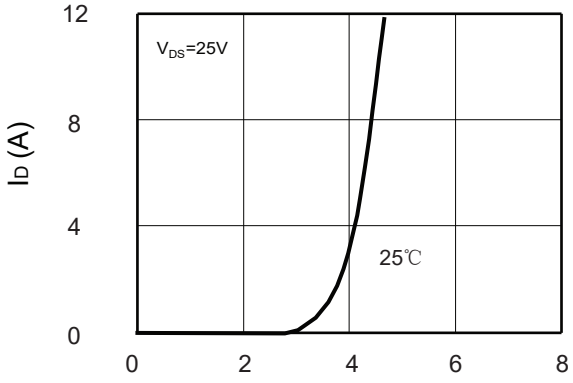
Cmos assumes no liability for customers' product design or applications.
Cmos reserver the right to improve product design ,functions and reliability wihtout notice.

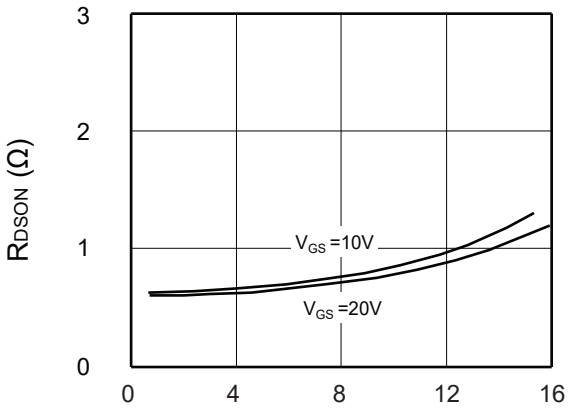
Typical Characteristics



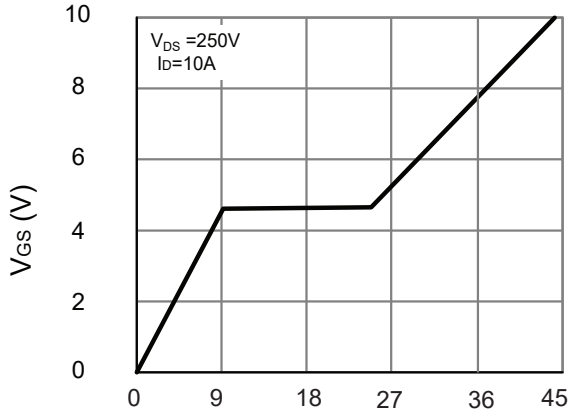
Output Characteristics



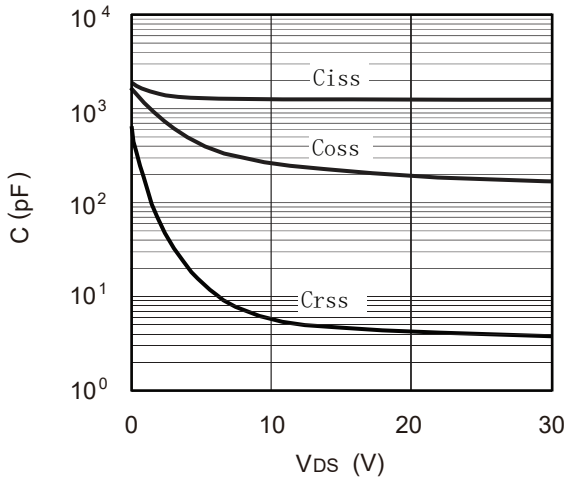
transfer characteristics



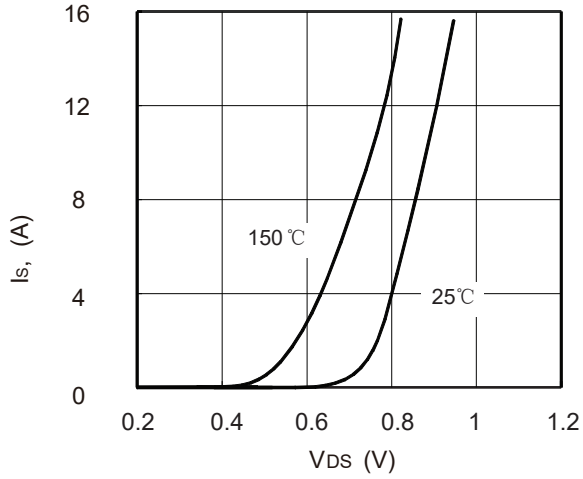
drain-source on-resistance



Gate charge vs gate-source voltage



Capacitance Characteristics



Body-Diode Characteristics