

General Description

The CMSA060N10 uses advanced technology to provide excellent RDS (ON), This device is ideal for boost converters and synchronous rectifiers for consumer, telecom, industrial power supplies and LED backlighting.

Features

- RDS(ON)<7mΩ @ VGS=10V
- 100% avalanche tested
- Small Footprint (5x6mm) for Compact Design
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	90	A
I_{DM}	Pulsed Drain Current	270	A
EAS	Single Pulse Avalanche Energy	210	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	115	W
T_{STG}	Storage Temperature Range	-55 to 175	°C
T_J	Operating Junction Temperature Range	-55 to 175	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	---	62	°C/W
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	1.1	°C/W

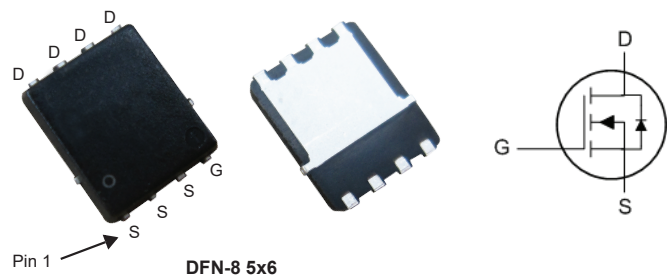
Product Summary

BVDSS	RDSON	ID
100V	7mΩ	90A

Applications

- DC-DC Converter
- Motor Drive
- Powertrain Management

DFN-8 5x6 Pin Configuration



Type	Package	Marking
CMSA060N10	PDFN-8 5*6	CMSA060N10

N-Channel Enhancement Mode Field Effect Transistor

Electrical Characteristics ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=28A$	---	---	7	m Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=100V, V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V, I_D=20A$	---	21	---	S
R_g	Gate Resistance	$V_{DS}=0V, V_{GS}=0V, f=1\text{MHz}$	---	2.0	---	Ω
Q_g	Total Gate Charge	$V_{DS}=50V, I_D=25A$ $V_{GS}=10V$	---	43	---	nC
Q_{gs}	Gate-Source Charge		---	14	---	
Q_{gd}	Gate-Drain Charge		---	8	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=50V, V_{GS}=10V, I_D=25A$ $R_{GEN}=1.6\Omega$	---	16	---	ns
T_r	Rise Time		---	11	---	
$T_{d(off)}$	Turn-Off Delay Time		---	30	---	
T_f	Fall Time		---	9	---	
C_{iss}	Input Capacitance	$V_{DS}=50V, V_{GS}=0V, f=1\text{MHz}$	---	3500	---	pF
C_{oss}	Output Capacitance		---	520	---	
C_{rss}	Reverse Transfer Capacitance		---	21	---	

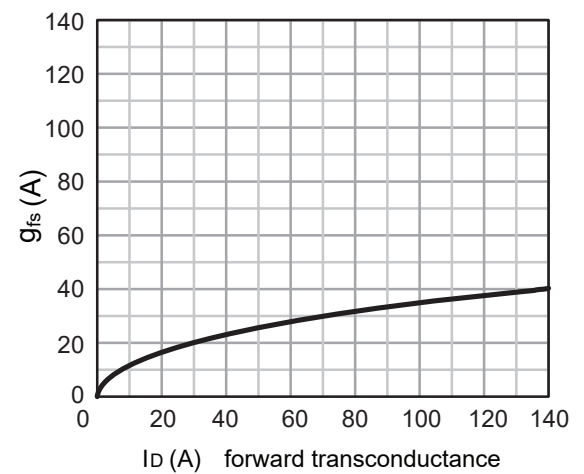
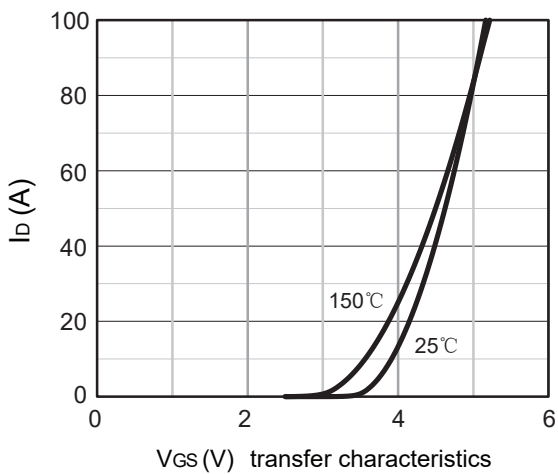
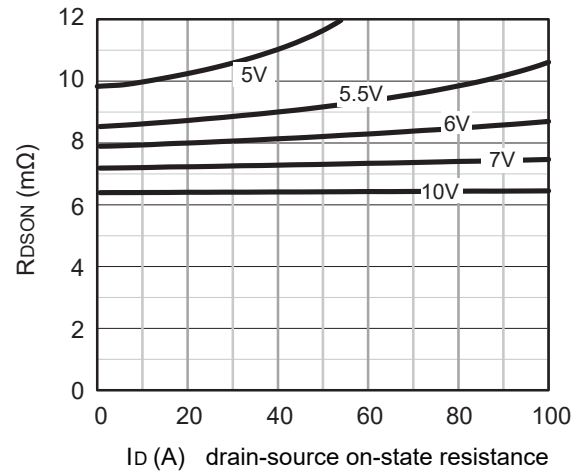
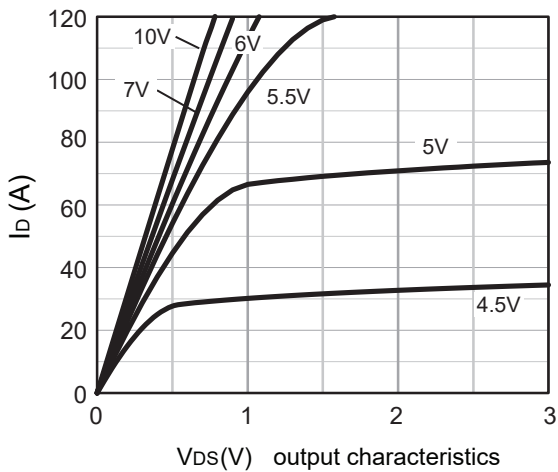
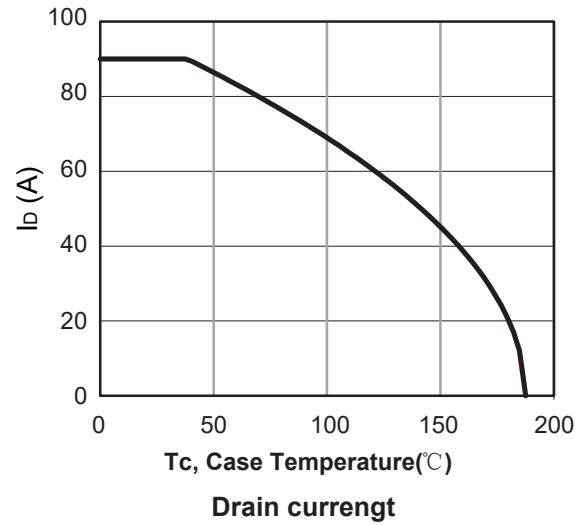
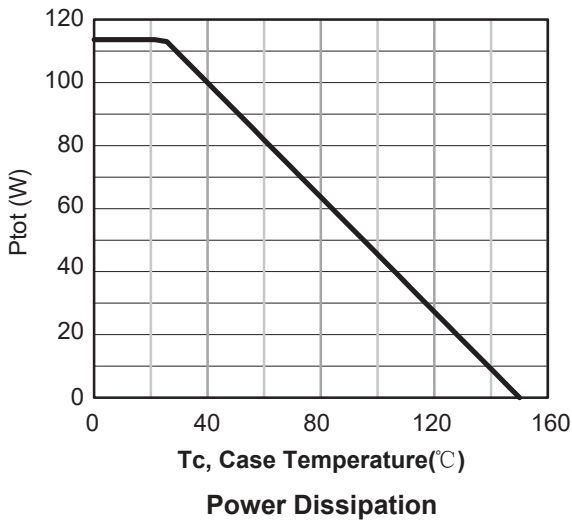
Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Diode continuous forward current	$V_G=V_D=0V, \text{Force Current}$	---	---	90	A
$I_{S,pulse}$	Diode pulse current		---	---	270	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_F=28A, T_J=25^{\circ}\text{C}$	---	---	1	V

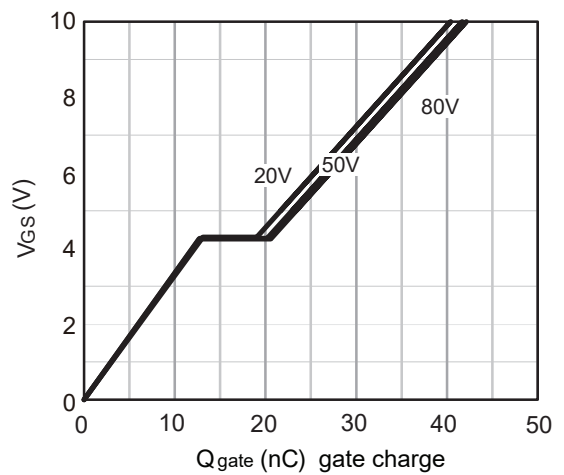
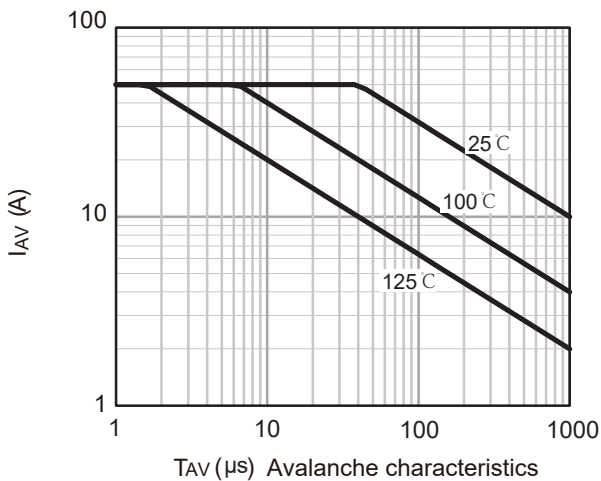
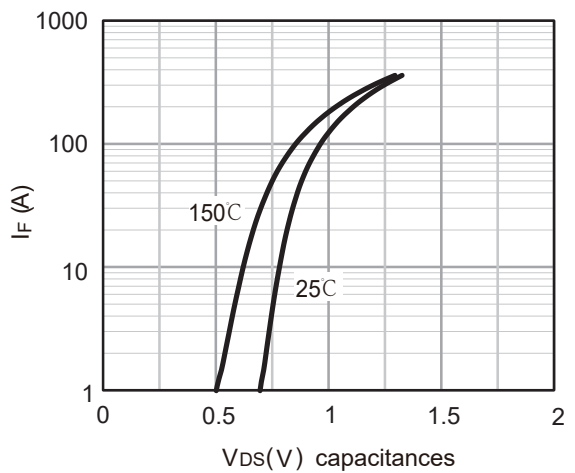
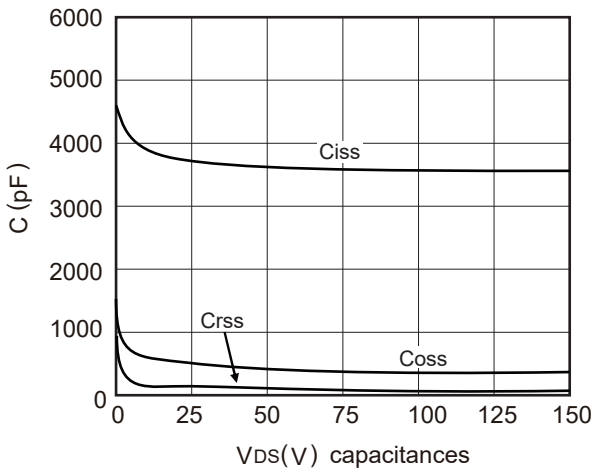
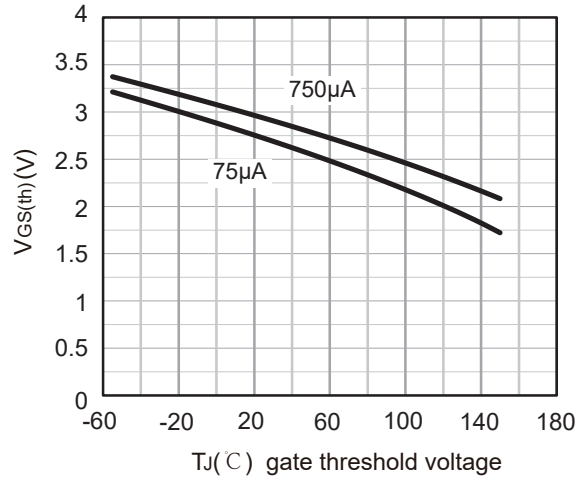
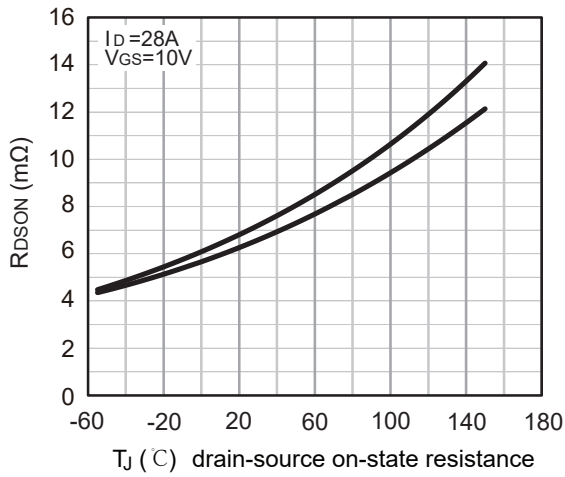
Notes:

This product has been designed and qualified for the consumer market.
 Cmos assumes no liability for customers' product design or applications.
 Cmos reserves the right to improve product design, functions and reliability without notice.

N-Channel Enhancement Mode Field Effect Transistor



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