

General Description

The CMSA085DN06AU uses advanced SGT technology to provide excellent RDS(ON). This product has been designed and qualified to AEC Q101 standard for use in high performance automotive applications.

Features

- AEC Q101 qualified
- Low On-Resistance
- 100% Avalanche tested
- Simple Drive Requirements
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	60	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	42	A
I_{DM}	Pulsed Drain Current	240	A
EAS	Single Pulse Avalanche Energy ¹	45	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	62	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient($t \leq 10\text{s}$)	---	20	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction -Case(Steady State)	---	2.02	$^\circ\text{C/W}$

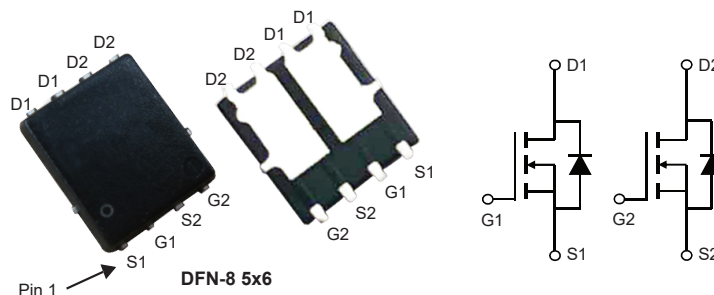
Product Summary

BVDSS	RDS(on) max.	ID
60V	9.9mΩ	60A

Applications

- 12V Automotive systems
- Motors, lamps and solenoid control
- Transmission control

DFN-8 5X6 Dual Pin Configuration



Type	Package	Marking
CMSA085DN06AU	DFN-8 5X6 Dual	085DN06AU

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=20A$	---	8.6	9.9	mΩ
		$V_{GS}=4.5V$, $I_D=15A$	---	12	15	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1	---	2.5	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=60V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	±100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=20A$	---	30	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1.2	---	Ω
Q_g	Total Gate Charge	$V_{DD}=30V$, $I_D=30A$ $V_{GS}=4.5V$	---	10	---	nC
Q_{gs}	Gate-Source Charge		---	4	---	
Q_{gd}	Gate-Drain Charge		---	2	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=30V$, $V_{GS}=10V$, $R_L=3\Omega$ $R_{GEN}=1\Omega$, $I_D=10A$	---	25	---	ns
T_r	Rise Time		---	110	---	
$T_{d(off)}$	Turn-Off Delay Time		---	15	---	
T_f	Fall Time		---	7	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1300	---	pF
C_{oss}	Output Capacitance		---	580	---	
C_{rss}	Reverse Transfer Capacitance		---	60	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Diode continuous forward current	$V_G=V_D=0V$, Force Current	---	---	60	A
I_{SM}	Pulsed Source Current		---	---	240	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=20A$, $T_J=25^{\circ}\text{C}$	---	0.88	1.2	V

Notes:

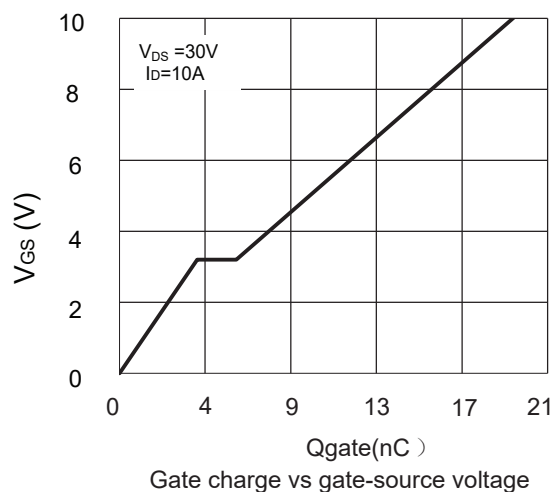
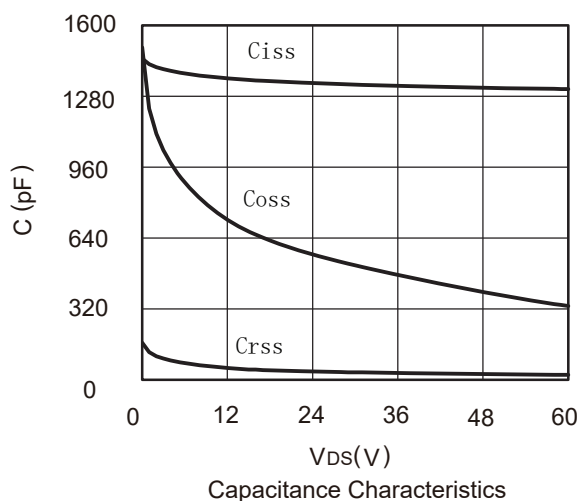
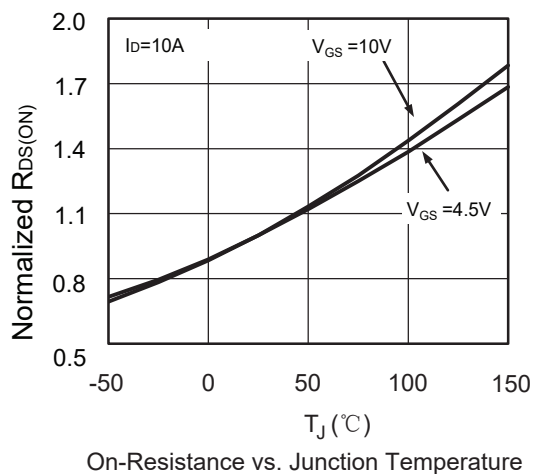
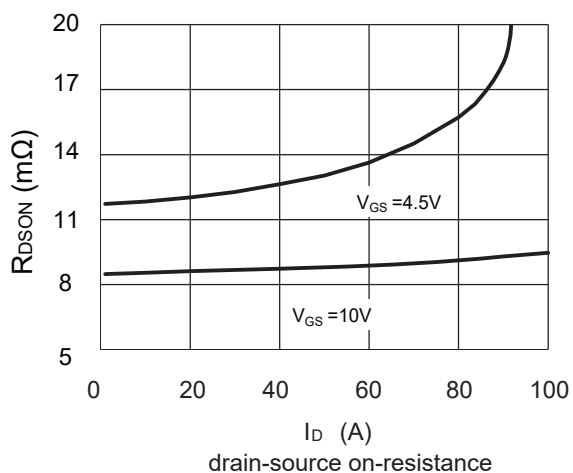
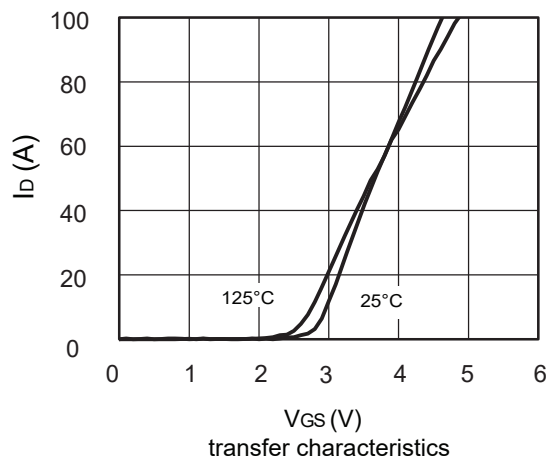
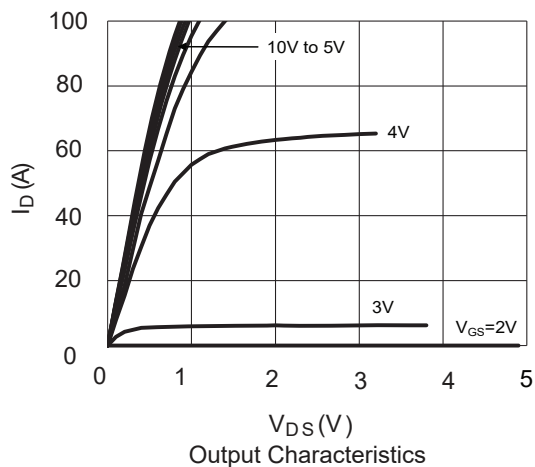
1.The EAS data shows Max. rating .The test condition is $V_{DS}=30V$, $V_{GS}=10V$, $L=0.5\text{mH}$, $I_{AS}=13.5A$.

This product has been designed and qualified for the consumer market.

Cmos assumes no liability for customers' product design or applications.

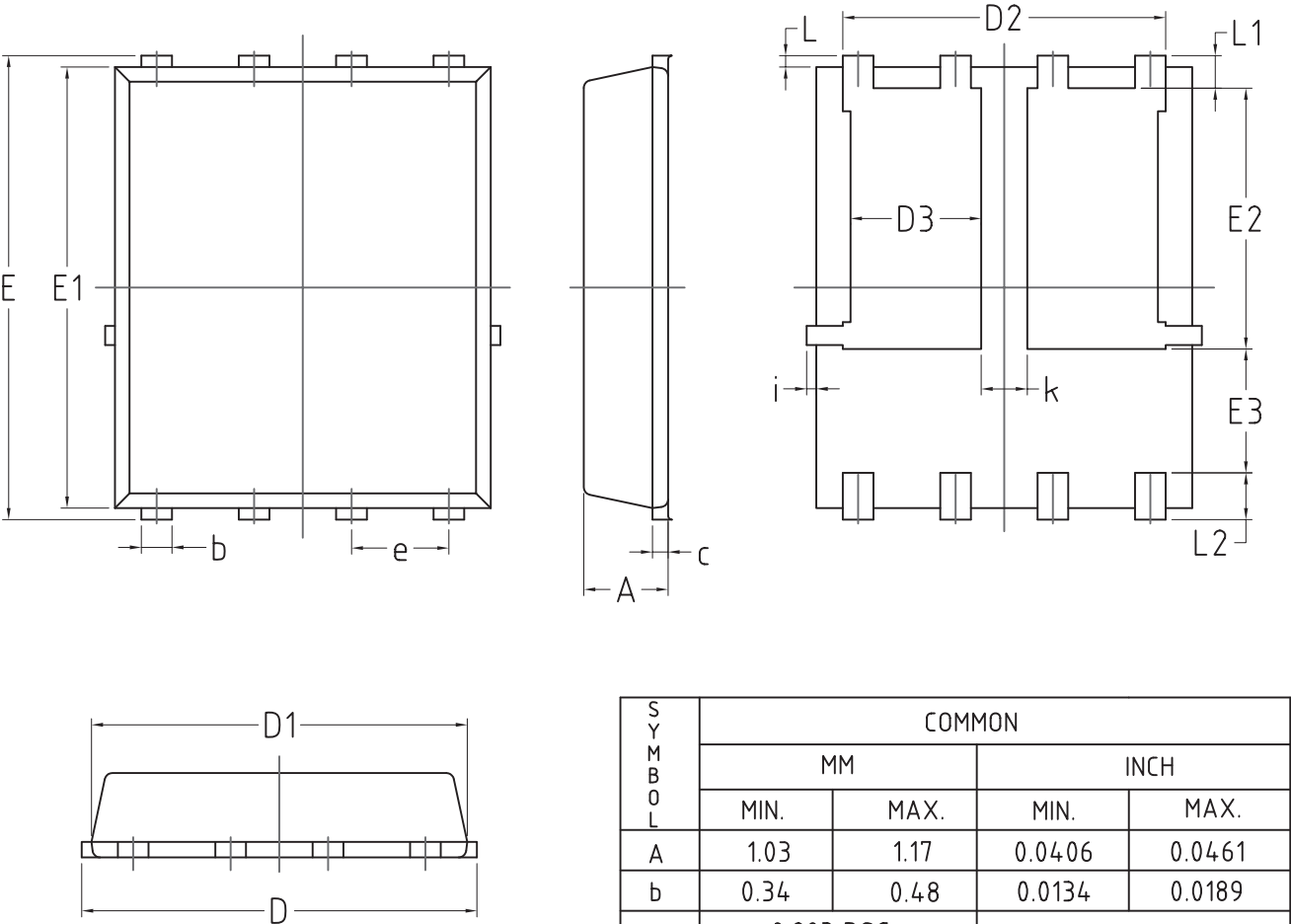
Cmos reserves the right to improve product design ,functions and reliability without notice.Please refer to the latest version of specification.

Typical Characteristics



Package Dimension

DFN-8 5X6 Dual Unit :mm



S Y M B O L	COMMON			
	MM		INCH	
	MIN.	MAX.	MIN.	MAX.
A	1.03	1.17	0.0406	0.0461
b	0.34	0.48	0.0134	0.0189
c	0.203 BSC		0.0080 BSC	
D	4.80	5.40	0.1890	0.2126
D1	4.80	5.00	0.1890	0.1969
D2	4.11	4.31	0.1620	0.1700
D3	1.60	1.80	0.0629	0.0708
E	5.95	6.15	0.2343	0.2421
E1	5.65	5.85	0.2224	0.2303
E2	3.30	3.50	0.1300	0.1378
E3	1.40	/	0.0551	/
e	1.27 BSC		0.05 BSC	
L	0.05	0.25	0.0019	0.0098
L1	0.38	0.50	0.0150	0.0197
L2	0.38	0.71	0.0150	0.0280
i	/	0.18	/	0.0070
k	0.5	0.7	0.0197	0.0276