

General Description

The CMSA75N06 uses advanced trench technology to provide excellent RDS (ON), low gate charge and minimize the loss of power conversion applications. This device is suitable to be used as the low side FET in SMPS, load switching and general purpose.

Features

- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	50	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	35	A
I_{DM}	Pulsed Drain Current	200	A
EAS	Single Pulse Avalanche Energy ¹	306	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	70	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	52	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.79	$^\circ C/W$

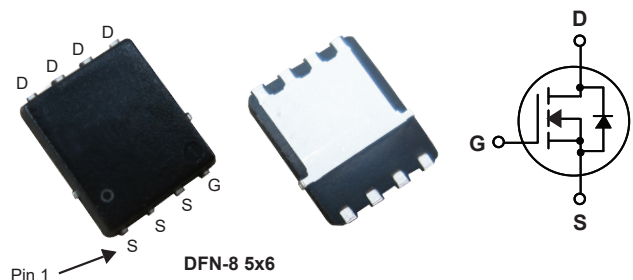
Product Summary

BVDSS	RDS(on) max.	ID
60V	14mΩ	50A

Applications

- DC/DC Converters in Computing, Servers, and POL
- Isolated DC/DC Converters in Telecom and Industrial

DFN-8 5x6 Pin Configuration



Type	Package	Marking
CMSA75N06	DFN-8 5x6	CMSA75N06

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	60	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =28A	---	11	14	mΩ
		V _{GS} =4.5V , I _D =25A	---	12	17	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1.0	---	2.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =60V , V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =10V , I _D =20A	---	24	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	5.6	---	Ω
Q _g	Total Gate Charge	I _D =60A V _{DS} =40V V _{GS} =10V	---	110	---	nC
Q _{gs}	Gate-Source Charge		---	15	---	
Q _{gd}	Gate-Drain Charge		---	30	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =30V V _{GS} =4.5V R _G =4.7Ω I _D =30A	---	50	---	ns
T _r	Rise Time		---	155	---	
T _{d(off)}	Turn-Off Delay Time		---	45	---	
T _f	Fall Time		---	220	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	3400	---	pF
C _{oss}	Output Capacitance		---	250	---	
C _{rss}	Reverse Transfer Capacitance		---	170	---	

Diode Characteristics

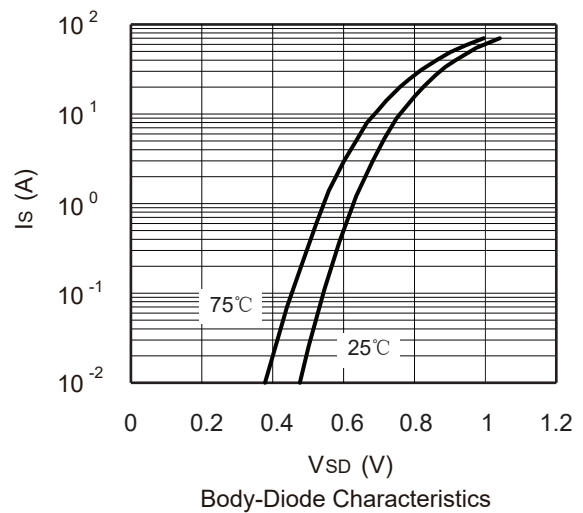
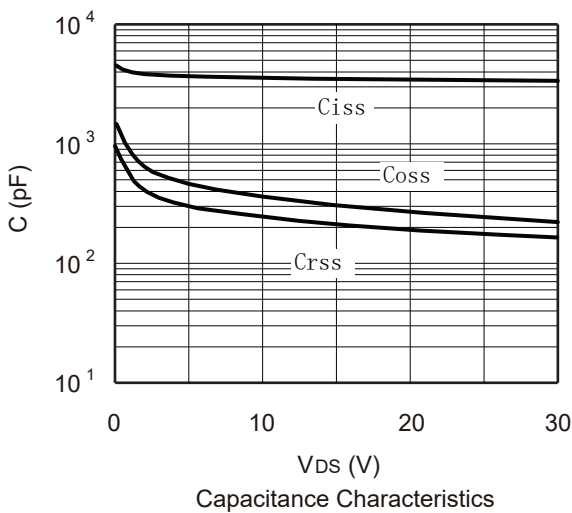
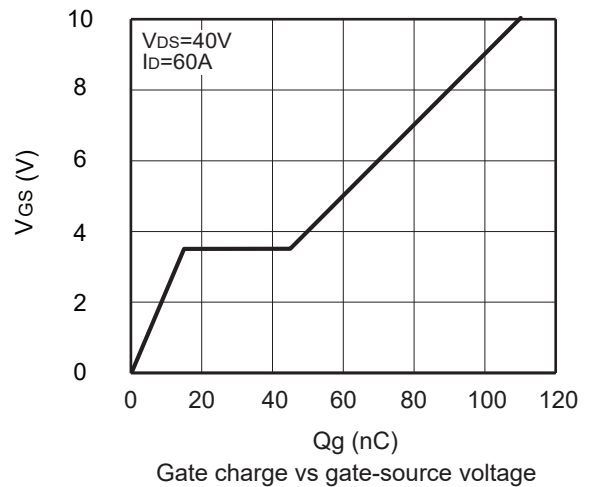
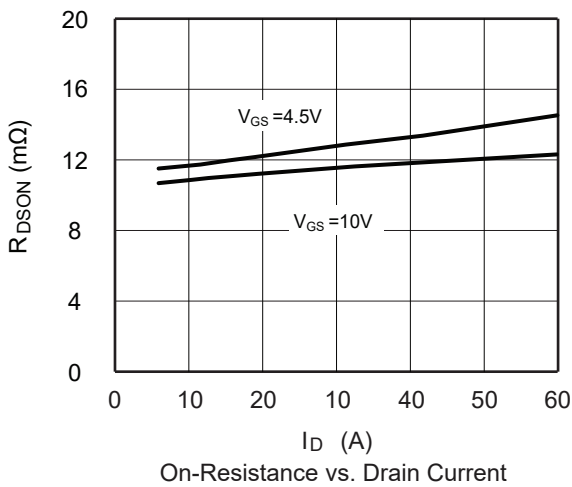
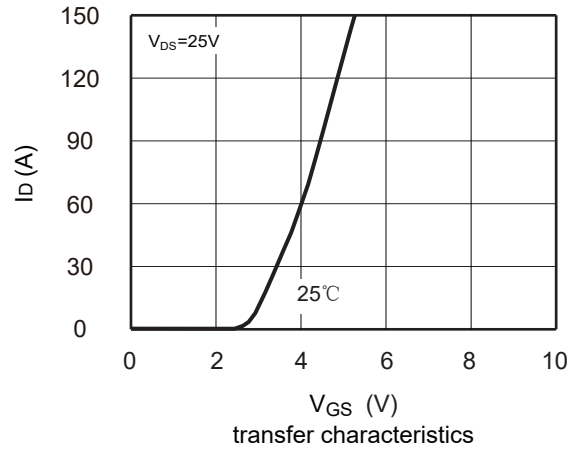
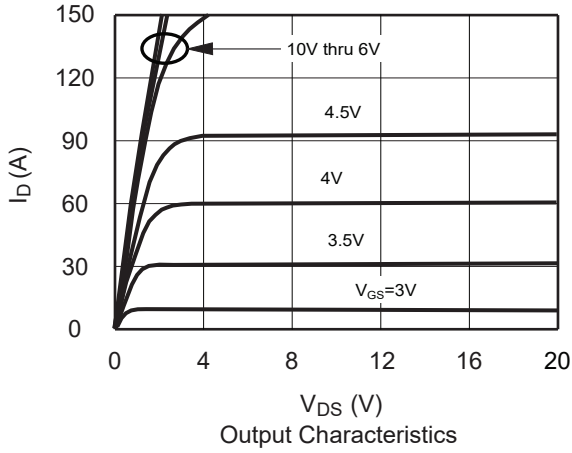
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	50	A
I _{SM}	Pulsed Source Current		---	---	200	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =28A , T _J =25°C	---	0.85	1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=30V , V_{GS}=10V , L=0.5mH , I_{AS}=35A.

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

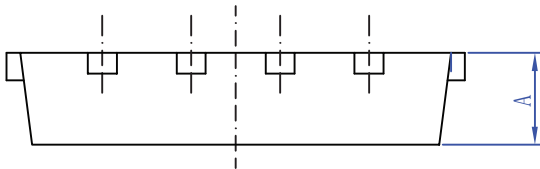
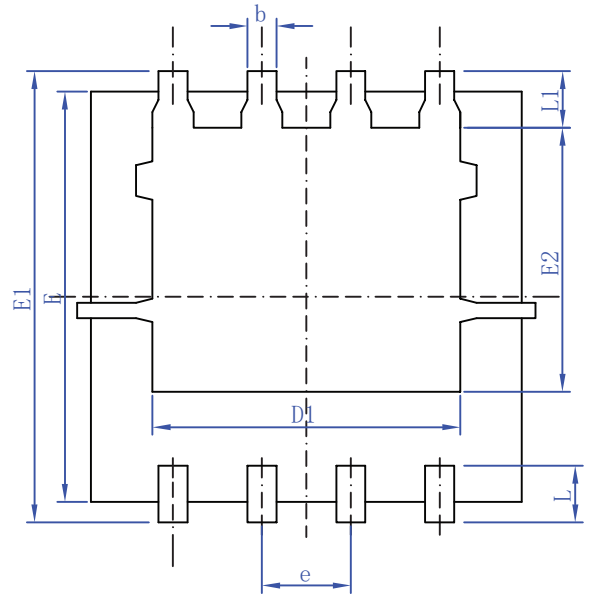
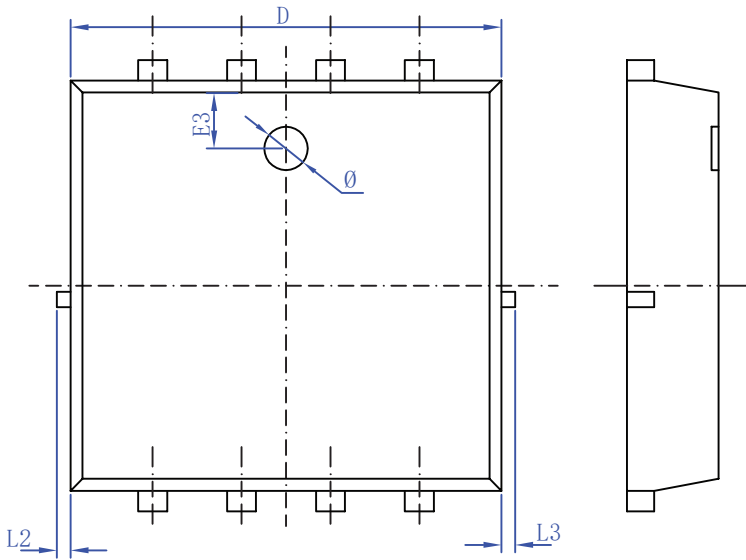
Typical Characteristics



Package Dimension

DFN-8 5x6

Unit :mm



Dimensions In Millimeters			
Symbol	Min.	Max.	Ave.
A	0.900	1.100	1.000
D	4.950	5.150	5.050
D1	3.850	4.250	4.050
E	5.750	5.950	5.850
E1	5.950	6.350	6.150
E2	3.300	3.700	3.500
E3	0.900	1.300	1.100
b	0.250	0.350	0.300
e	1.220	1.320	1.270
L	0.585	0.785	0.685
L1	0.525	0.725	0.625
Ø	1.000	1.400	1.200
L2	0~0.100		
L3	0~0.100		

注:

1. 未注公差±0.05未标注圆角R max=0.25