

General Description

These P-Channel enhancement mode power field effect transistors use advanced trench technology and design to provide excellent RDS(ON) . This device is suitable for use as a load switch or in PWM applications.

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	-80	A
$I_D@T_C=100^{\circ}C$	Continuous Drain Current	-56	A
I_{DM}	Pulsed Drain Current	-240	A
EAS	Single Pulse Avalanche Energy ¹	248	mJ
$P_D@T_C=25^{\circ}C$	Total Power Dissipation	95	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
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	50	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.32	°C/W

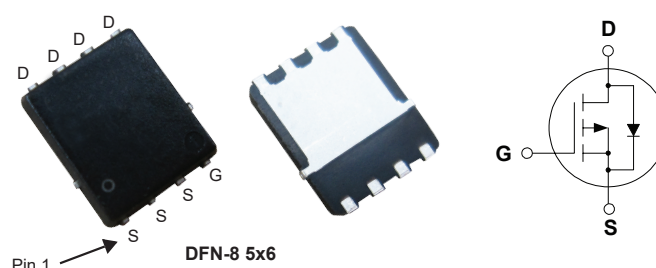
Product Summary

BVDSS	RDS(on) max.	ID
-60V	15mΩ	-80A

Applications

- DC-DC Converters
- Power Management
- Load Switch

DFN-8 5x6 Pin Configuration



Type	Package	Marking
CMSA80P06A	DFN-8 5x6	CMSA80P06A

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=-250\mu A$	-60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V$, $I_D=-28A$	---	13	15	mΩ
		$V_{GS}=-4.5V$, $I_D=-20A$	---	16	23	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=-250\mu A$	-1.0	---	-3.0	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-60V$, $V_{GS}=0V$, $T_J=25^{\circ}\text{C}$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	±100	nA
g_{fs}	Forward Transconductance	$V_{DS}=-5V$, $I_D=-10A$	---	24	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	46	---	Ω
Q_g	Total Gate Charge	$V_{DD}=-30V$, $I_D=-50A$ $V_{GS}=-10V$	---	110	---	nC
Q_{gs}	Gate-Source Charge		---	20	---	
Q_{gd}	Gate-Drain Charge		---	28	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=-30V$, $V_{GS}=-10V$, $R_L=0.6\Omega$ $R_G=6\Omega$, $I_D=-50A$	---	15	---	ns
T_r	Rise Time		---	70	---	
$T_{d(off)}$	Turn-Off Delay Time		---	175	---	
T_f	Fall Time		---	175	---	
C_{iss}	Input Capacitance	$V_{DS}=-25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	6300	---	pF
C_{oss}	Output Capacitance		---	290	---	
C_{rss}	Reverse Transfer Capacitance		---	240	---	

Diode Characteristics

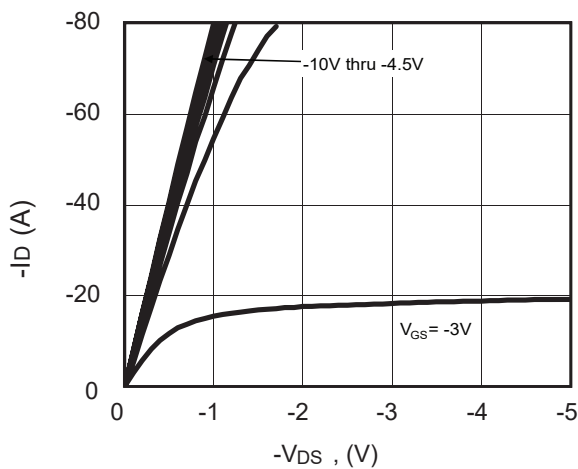
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	-80	A
I_{SM}	Pulsed Source Current		---	---	-240	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_F=-28A$	---	-0.88	-1.5	V

Note :

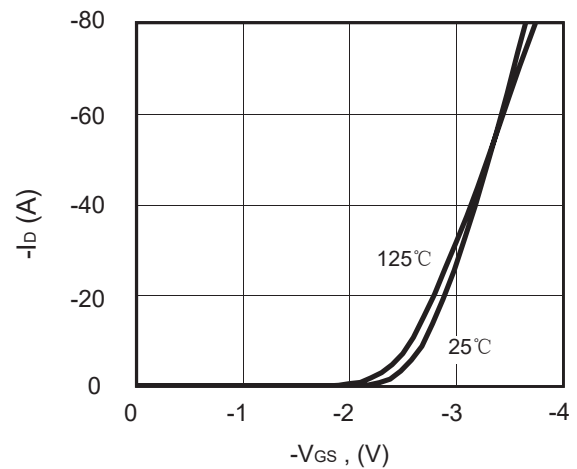
1. The EAS data shows Max. rating . The test condition is $V_{DD}=-30V$, $V_{GS}=-10V$, $L=0.5\text{mH}$, $I_{AS}=-31.5A$.

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.

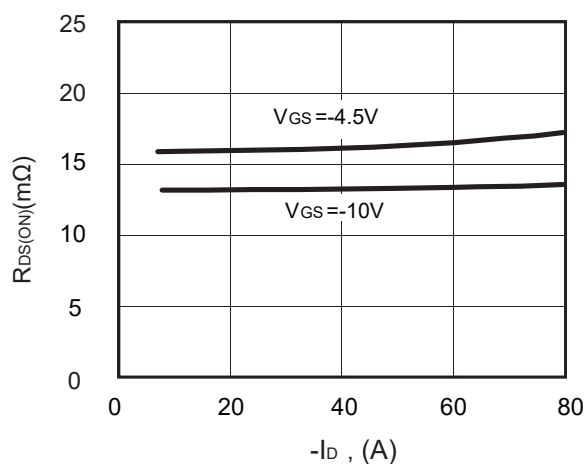
Typical Characteristics



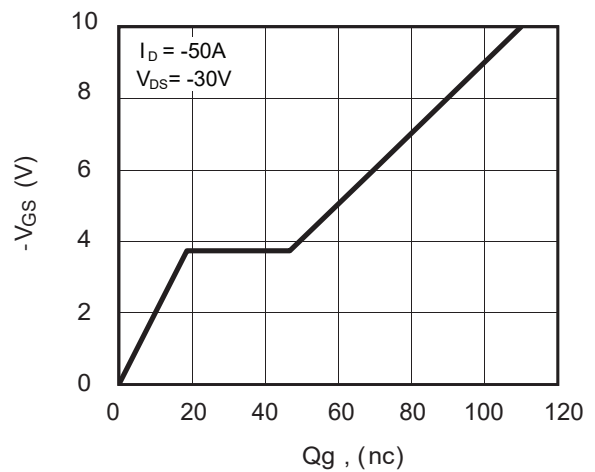
On-Region Characteristics



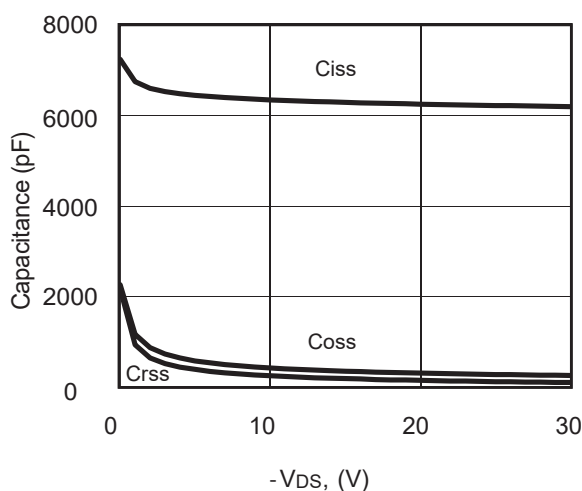
transfer characteristics



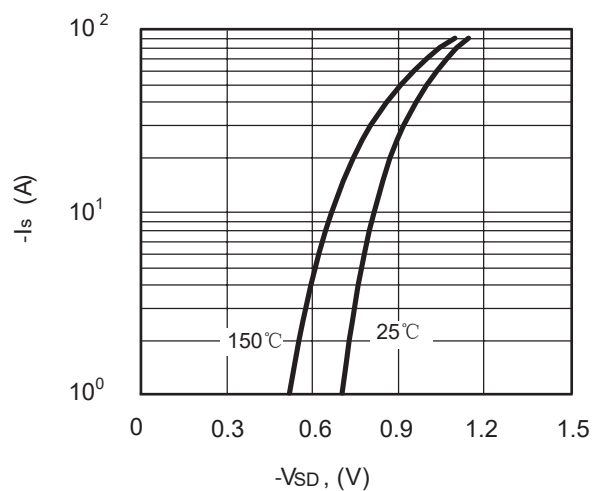
On-Resistance vs. Drain Current



Gate Charge Characteristics



Capacitance Characteristics



Body Diode Forward Voltage Variation with Source Current and Temperature