CMH80P10/CMA80P10

-100V, 22mΩ typ., -80A P-Channel MOSFET

General Description

The 80P10 uses advanced trench technology and design to provide excellent RDS(ON). It can be used in a wide variety of applications.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
-100V	25mΩ	-80A

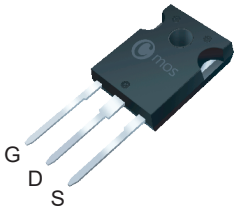
Applications

- Inverters
- Motor drive
- DC / DC converter

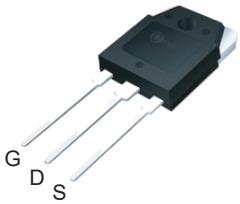
Features

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

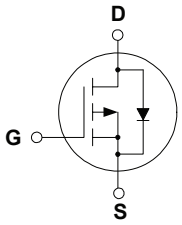
TO-247/TO-3P Pin Configuration



TO-247
CMH80P10



TO-3P
CMA80P10



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℃	Continuous Drain Current	-80	A
I_D@T_C=100℃	Continuous Drain Current	-56	A
I_{DM}	Pulsed Drain Current	-320	A
EAS	Single Pulse Avalanche Energy [1]	1058	mJ
P_D@T_C=25℃	Total Power Dissipation	300	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.42	℃/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	-100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V , I_D=-20A	---	22	25	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250 uA	-2	---	-4	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-100V , V_{GS}=0V	---	---	-1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS} = ±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=-10V , I_D=-10A	---	40	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	16	---	Ω
Q_g	Total Gate Charge	I_D=-80A V_{DS} =-50V V_{GS} =-4.5V	---	100	---	nC
Q_{gs}	Gate-Source Charge		---	40	---	
Q_{gd}	Gate-Drain Charge		---	50	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS} =-50V I_D=-80A R_L=0.56Ω , R_G=1Ω V_{GS} =-10V	---	20	---	ns
T_r	Rise Time		---	510	---	
$T_{d(off)}$	Turn-Off Delay Time		---	150	---	
T_f	Fall Time		---	870	---	
C_{iss}	Input Capacitance	V_{DS}= -25V , V_{GS}=0V , f=1MHz	---	13000	---	pF
C_{oss}	Output Capacitance		---	400	---	
C_{rss}	Reverse Transfer Capacitance		---	390	---	

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		---	---	-320	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=-10A	---	-0.8	-1.2	V

Notes:

1.The EAS data shows Max. rating .The test condition is V_{DS}=-50V , V_{GS}=-10V , L=1mH , I_{AS}=-46A.

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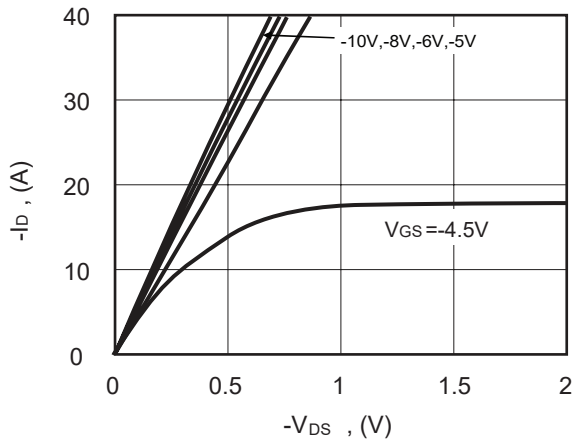
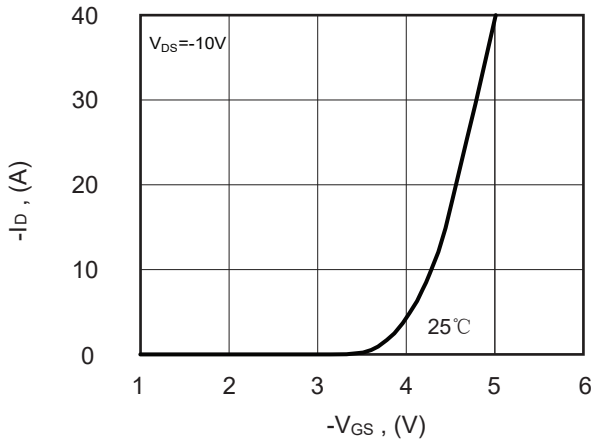
Cmos reserver the right to improve product design ,functions and reliability wihtout notice.

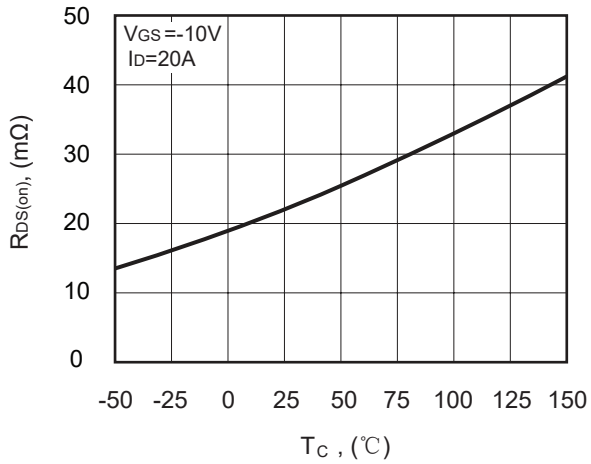
Typical Characteristics



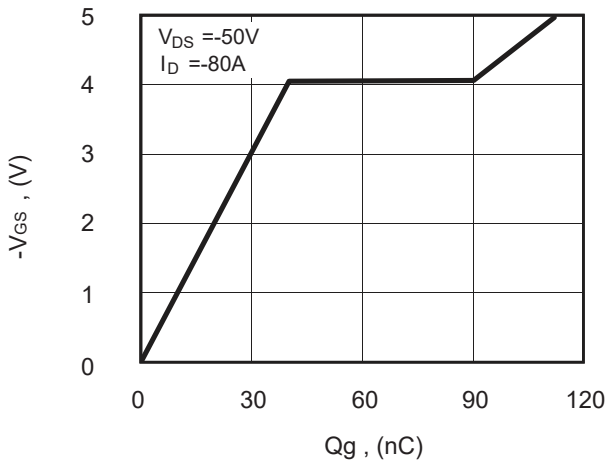
Output Characteristics



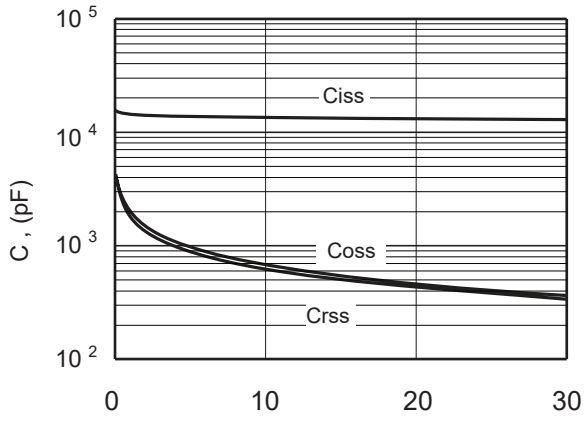
transfer characteristics



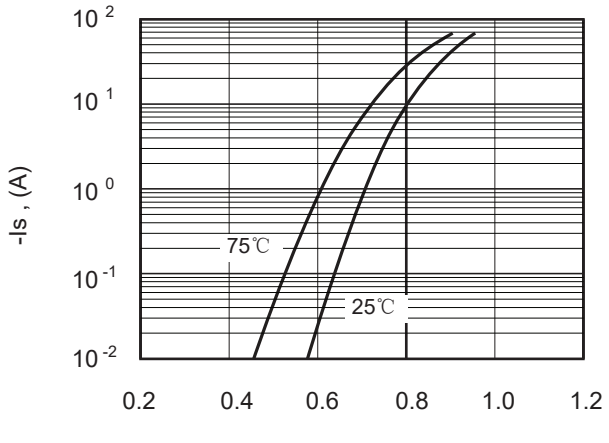
On-Resistance vs. Junction Temperature



Gate Charge Characteristics



Capacitance Characteristics



Body-Diode Characteristics