CMP40N20P/CMB40N20P

N-Channel Enhancement Mode Field Effect Transistor

General Description

The 40N20P uses advanced planar stripe DMOS technology and design to provide excellent RDS(ON). These devices are wellsuited for high efficiency switched mode power supplies,active power factor correction based on half bridge topology.

Product Summary

BVDSS	RDSON	ID
200V	65mΩ	40A

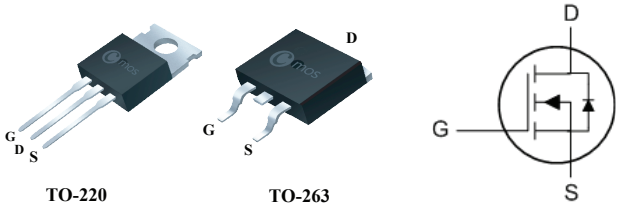
Applications

- LED power controller
- DC-DC & DC-AC converters
- High current, high speed switching
- Solenoid and relay drivers
- Motor control, Audio amplifiers

Features

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

TO-220/263 Pin Configuration



Type	Package	Marking
CMP40N20P	TO-220	CMP40N20P
CMB40N20P	TO-263	CMB40N20P

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	200	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current	40	A
I_D@T_C=100℃	Continuous Drain Current	32	A
I_{DM}	Pulsed Drain Current	160	A
EAS	Single Pulse Avalanche Energy	1000	mJ
P_D@T_C=25℃	Total Power Dissipation	160	W
T_{STG}	Storage Temperature Range	-55 to 175	℃
T_J	Operating Junction Temperature Range	-55 to 175	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62.5	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.78	℃/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	200	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=20A	---	---	65	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=200V , 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=28A	---		---	S
Q_g	Total Gate Charge	I_D=20A V_{DD}=100V V_{GS}=10V	---	61	---	nC
Q_{gs}	Gate-Source Charge		---	17	---	
Q_{gd}	Gate-Drain Charge		---	19	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=50V， V_{GS}=10V R_G=2.5Ω I_D=28A	---	21	---	ns
T_r	Rise Time		---	29	---	
$T_{d(off)}$	Turn-Off Delay Time		---	66	---	
T_f	Fall Time		---	16	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	2700	---	pF
C_{oss}	Output Capacitance		---	382	---	
C_{rss}	Reverse Transfer Capacitance		---	50	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	40	A
I_{SM}	Pulsed Source Current		---	---	160	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=40A, T_J=25℃	---	---	1.4	V

Note :

This product has been designed and qualified for the counsumer market.
Cmos assumes no liability for customers' product design or applications.
Cmos reserver the right to improve product design ,functions and reliability wihtout notice.