CMP60N20/CMB60N20

N-Channel Enhancement Mode Field Effect Transistor

General Description

The 60N20 is a N-channel Power MOSFET. It has specifically been designed to minimize input capacitance and gate charge. The device is therefore suitable in advanced high-efficiency switching applications.

Features

- Advanced Process Technology
- Ultra Low On-Resistance
- Dynamic dv/dt Rating
- 175°C Operating Temperature
- Fast Switching
- Fully Avalanche Rated
- Lead-Free

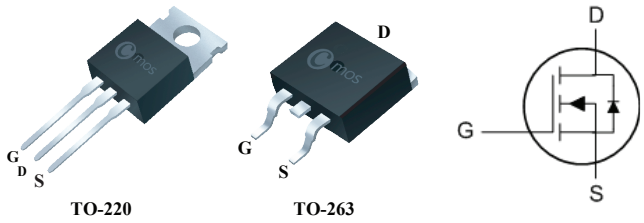
Product Summary

BVDSS	RDSON	ID
200V	28mΩ	60A

Applications

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

TO-220/263 Pin Configuration



Type	Package	Marking
CMP60N20	TO-220	CMP60N20
CMB60N20	TO-263	CMB60N20

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°C	Continuous Drain Current,VGS @ 10V	60	A
I_D@T_C=100°C	Continuous Drain Current,VGS @ 10V	48	A
I_{DM}	Pulsed Drain Current	240	A
EAS	Single Pulse Avalanche Energy	1400	mJ
P_D@T_C=25°C	Power Dissipation	260	W
T_{STG}	Storage Temperature Range	-55 to 175	°C
T_J	Operating Junction Temperature Range	-55 to 175	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Junction-to-Ambient (PCB mount)	---	62	°C/W
$R_{\theta JC}$	Junction-to-Case	---	0.57	°C/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=30A	---	---	28	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	3	---	5	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=25A	---	35	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	3.2	---	Ω
Q_g	Total Gate Charge	I_D=30A V_{DS}=100V V_{GS}=10V	---	100	---	nC
Q_{gs}	Gate-Source Charge		---	30	---	
Q_{gd}	Gate-Drain Charge		---	40	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=100V I_D=30A R_G=2.5Ω V_{GS}=10V	---	31	---	ns
T_r	Rise Time		---	21	---	
$T_{d(off)}$	Turn-Off Delay Time		---	22	---	
T_f	Fall Time		---	32	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	5600	---	pF
C_{oss}	Output Capacitance		---	338	---	
C_{rss}	Reverse Transfer Capacitance		---	136	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source 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=30A , T_J=25℃	---	---	1.2	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.