CMP180N06/CMB180N06

N-Channel Enhancement Mode Field Effect Transistor

General Description

The 180N06 uses advanced trench technology and design to provide excellent RDS(ON) with low gate charge. It can be used in a wide variety of applications.

Product Summary

BVDSS	RDSON	ID
60V	4mΩ	180A

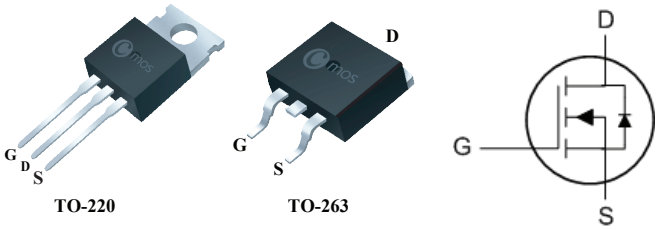
Applications

- Power switching application
- Uninterruptible power supply
- Hard switched and high frequency circuits

Features

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

TO-220/263 Pin Configuration



Type	Package	Marking
CMP180N06	TO-220	CMP180N06
CMB180N06	TO-263	CMB180N06

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℃	Continuous Drain Current	180	A
I_D@T_C=100℃	Continuous Drain Current	116	A
I_{DM}	Pulsed Drain Current[1]	540	A
EAS	Single Pulse Avalanche Energy[2]	950	mJ
P_D@T_C=25℃	Total Power Dissipation	250	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62.5	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.51	℃/W

N-Channel Enhancement Mode Field Effect Transistor

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	60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=25A	---	---	4	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}=60V , V_{GS}=0V	---		1	uA
		V_{DS}=48V , V_{GS}=0V,T_J=125℃	---	---	100	
I_{GSS}	Gate-Source Leakage Current	V_{GS} = ±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=10V , I_D=30A	---	32	---	S
Q_g	Total Gate Charge	I_D=90A V_{DD}=48V V_{GS}=10V	---	86	---	nC
Q_{gs}	Gate-Source Charge		---	22	---	
Q_{gd}	Gate-Drain Charge		---	30	---	
$T_{d(on)}$	Turn-On Delay Time	V_{GS}=10V V_{DD}=30V I_D=90A R_G=6Ω	---	38	---	ns
T_r	Rise Time		---	23	---	
$T_{d(off)}$	Turn-Off Delay Time		---	70	---	
T_f	Fall Time		---	23.5	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	5800	---	pF
C_{oss}	Output Capacitance		---	635	---	
C_{rss}	Reverse Transfer Capacitance		---	345	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	180	A
I_{SM}	Pulsed Source Current[1]		---	---	540	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=30 A, T_J=25℃	---	---	1.2	V
t_{rr}	Reverse Recovery Time	V_{GS}=0V , I_S=90A dI_F/dt =100A/μ	---	36	---	ns
Q_{rr}	Reverse Recovery Charge		---	41	---	μC

Note :
1.Repetitive rating; pulse width limited by max. junction temperature.

2.The test condition is V_{DD}=30V , V_{GS}=10V , L=1 mH , I_{AS}=49A

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.