CMP80N06/CMB80N06/CMI80N06

N-Channel Enhancement Mode Field Effect Transistor

General Description

The 80N06 is N-ch MOSFET with extreme high cell density , which provide excellent RDSON and gate charge for most of the synchronous buck converter applications.

Product Summery

BVDSS	RDSON	ID
60V	7.8mΩ	80A

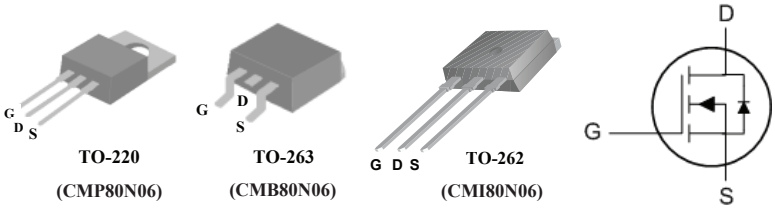
Features

- Simple Drive Requirement
- Fast Switching
- Low On-Resistance

Applications

- Motor Control
- DC-DC converters
- General Purpose Power Amplifier

TO220/263/262 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current[1]	80	A
I_D@T_C=100℃	Continuous Drain Current[1]	50	A
I_{DM}	Pulsed Drain Current[2]	250	A
EAS	Single Pulse Avalanche Energy[3]	405	mJ
I_{AS}	Avalanche Current	80	A
P_D@T_C=25℃	Total Power Dissipation	260	W
T_{STG}	Storage Temperature Range	-55 to 175	℃
T_J	Operating Junction Temperature Range	-55 to 175	℃

Thermal Data

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient[1]	62	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	0.9	℃/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	60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance[2]	V_{GS}=10V , I_D=80A	---	6.5	7.8	mΩ
		V_{GS}=4.5V , I_D=80A	---	8.2	14	
$V_{GS(th)}$	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}=60V , V_{GS}=0V , Tj=125 °C	---	---	100	
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=10V , I_D=40A	---	50	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	1.5	---	Ω
Q_g	Total Gate Charge	I_D=80A V_{DS}=30V V_{GS}=0 to 10V	---	76	---	nC
Q_{gs}	Gate-Source Charge		---	24	---	
Q_{gd}	Gate-Drain Charge		---	35	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=30V I_D=80A R_G=3.3 Ω V_{GS}=10V	---	45	---	ns
T_r	Rise Time		---	160	---	
$T_{d(off)}$	Turn-Off Delay Time		---	95	---	
T_f	Fall Time		---	68	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	3800	---	pF
C_{oss}	Output Capacitance		---	815	---	
C_{rss}	Reverse Transfer Capacitance		---	300	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current[1]	V_G=V_D=0V , Force Current	---	---	80	A
I_{SM}	Pulsed Source Current[2]		---	---	250	A
V_{SD}	Diode Forward Voltage[2]	V_{GS}=0V , I_S=80 A, T_J=25℃	---	---	1.5	V

Note :
1.The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.
2.The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%
3.The EAS data shows Max. rating . The test condition is V_{DD}=24V,V_{GS}=10V,L=0.13mH,I_{AS}=80A