CMP100N03B/CMB100N03B/CMI100N03B

30V N-Channel MOSFET

General Description

The 100N03B uses advanced trench technology to provide excellent RDS(ON). This device is suitable for low voltage, high speed switching applications in power supplies.

Product Summary

BVDSS	RDSON	ID
30V	4.5mΩ	100A

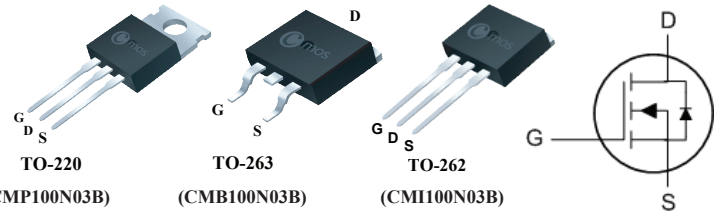
Applications

- High current， High speed switching
- DC-DC & DC-AC Converters
- Motor control Audio amplifiers
- Solenoid and relay drivers
- Automotive environment

Features

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

TO-220/263/262 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current	100	A
I_D@T_C=100℃	Continuous Drain Current	70	A
I_{DM}	Pulsed Drain Current	300	A
EAS	Single Pulse Avalanche Energy[1]	250	mJ
P_D	Total Power Dissipation	300	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	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.5	℃/W

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	30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=30A	---	4	4.5	mΩ
		V_{GS}=4.5V , I_D=20A	---	5	6	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	1	---	2	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=30V , V_{GS}=0V	---	---	1	uA
		V_{DS}=30V , V_{GS}=0V ,TC=125℃	---	---	100	
I_{GSS}	Gate-Source Leakage Current	V_{GS} =±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	I_D=22A V_{DS}=10V	---	25	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	7	---	Ω
Q_g	Total Gate Charge	I_D=100A V_{DD}=24V V_{GS}=10V	---	85	---	nC
Q_{gs}	Gate-Source Charge		---	21	---	
Q_{gd}	Gate-Drain Charge		---	40	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=15V I_D=100A R_G=1.1Ω V_{GS}=10V	---	15	---	ns
T_r	Rise Time		---	70	---	
$T_{d(off)}$	Turn-Off Delay Time		---	85	---	
T_f	Fall Time		---	65	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	3100	---	pF
C_{oss}	Output Capacitance		---	1400	---	
C_{rss}	Reverse Transfer Capacitance		---	440	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	100	A
I_{SM}	Pulsed Source Current		---	---	300	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=25A, T_J=25℃	---	---	1.3	V

Note :

3.The EAS data shows Max. rating . The test condition is V_{DD}=20V,V_{GS}=10V,L=1mH,I_{AS}=22.5A