CMP32N20P/CMB32N20P/CMI32N20P/CMF32N20P

200V N-Channel MOSFET

General Description

These N-Channel enhancement mode power field effect transistors are produced using Cmos's proprietary, planar stripe, DMOS technology. This advanced technology has been especially tailored to minimize on-state resistance.
These devices are well suited for high efficiency switching DC/DC converters, switch mode power supplies，DC-AC converters for uninterrupted power supplies and motor controls.

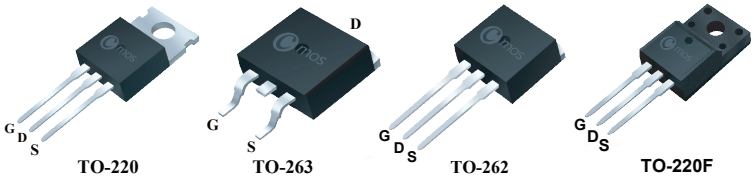
Product Summary

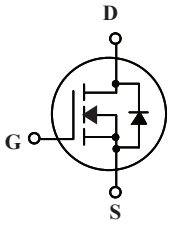
BVDSS	RDSON	ID
200V	82mΩ	32A

Applications

- UPS
- Inverter
- Lighting

TO-220/263/262/220F Pin Configuration





Features

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

Absolute Maximum Ratings

Symbol	Parameter	220/263/262	220F	Units
V_{DS}	Drain-Source Voltage	200		V
V_{GS}	Gate-Source Voltage	±20		V
I_D@T_C=25℃	Continuous Drain Current	32	32*	A
I_D@T_C=100℃	Continuous Drain Current	22	22*	A
I_{DM}	Pulsed Drain Current[1]	128	128*	A
EAS	Single Pulse Avalanche Energy[2]	1000		mJ
P_D@T_C=25℃	Total Power Dissipation	160	50	W
T_{STG}	Storage Temperature Range	-55 to 150		℃
T_J	Operating Junction Temperature Range	-55 to 150		℃

* Drain current limited by maximum junction temperature

Thermal Data

Symbol	Parameter	220/263/262	220F	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	62.5	62.5	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	0.78	2.51	℃/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	200	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=16A	---	73	82	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
		V_{DS}=160V, V_{GS}=0V , T_C=125℃	---	---	100	
I_{GSS}	Gate-Source Leakage Current	V_{GS}= ±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=15V , I_D=15A	---	17	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	1	---	Ω
Q_g	Total Gate Charge	I_D=32 A V_{DD}=160 V V_{GS}=10 V	---	83	---	nC
Q_{gs}	Gate-Source Charge		---	11	---	
Q_{gd}	Gate-Drain Charge		---	45	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=100 V I_D=32A R_G=25Ω	---	25	---	ns
T_r	Rise Time		---	270	---	
$T_{d(off)}$	Turn-Off Delay Time		---	245	---	
T_f	Fall Time		---	210	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	2400	---	pF
C_{oss}	Output Capacitance		---	300	---	
C_{rss}	Reverse Transfer Capacitance		---	40	---	

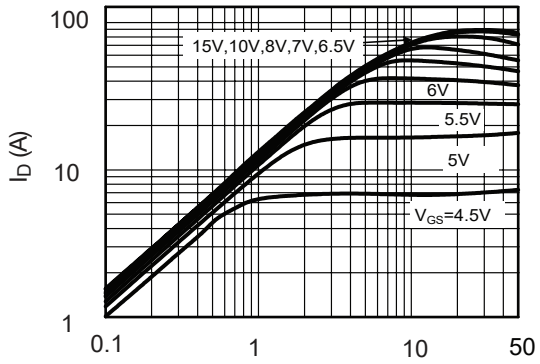
Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	32	A
I_{SM}	Pulsed Source Current		---	---	128	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=32 A, T_J=25℃	---	---	1.5	V

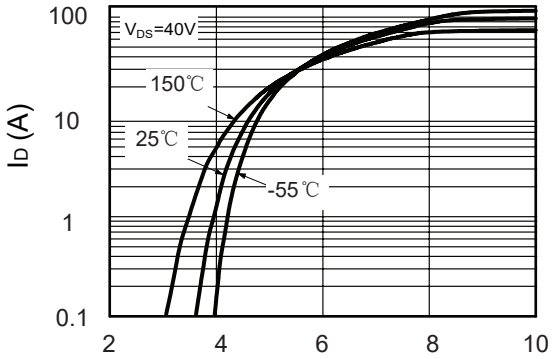
Note :
1.Repetitive rating; pulse width limited by maximum junction temperature

2.The EAS data shows Max. rating . The test condition is V_{DD}=80V,V_{GS}=10V,L=5.0mH,I_{AS}=20A

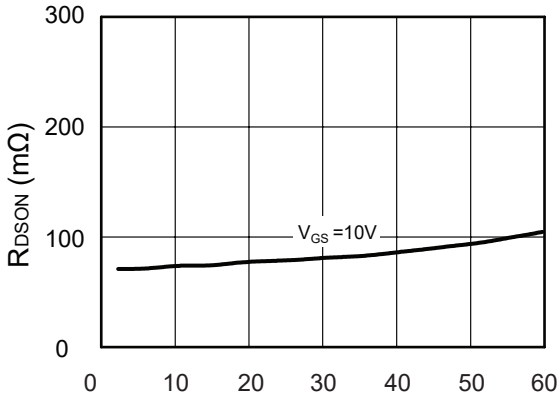
Typical Characteristics



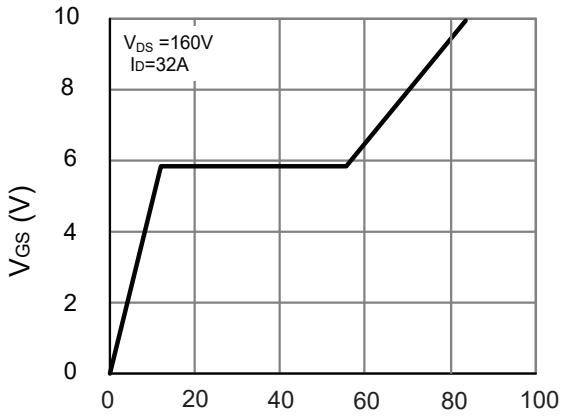
Output Characteristics



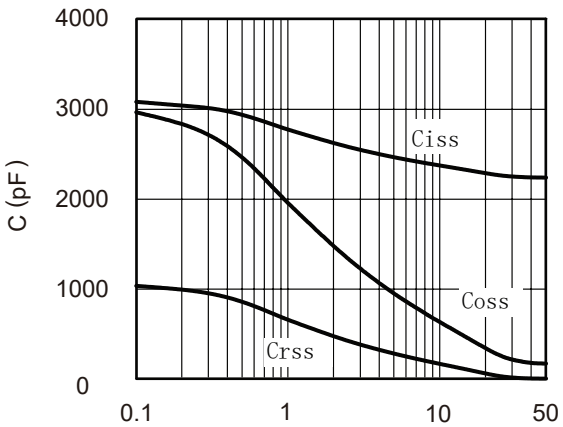
transfer characteristics



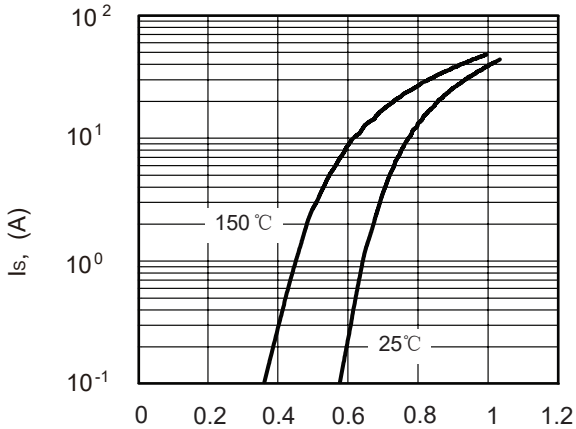
drain-source on-resistance



Gate charge vs gate-source voltage



Capacitance Characteristics



Body-Diode Characteristics