

### General Description

The 100N04C uses advanced trench technology and design to provide excellent RDS(ON). It can be used in a wide variety of applications.

### Features

- Fast switching
- 100% avalanche tested
- 175°C Operating Temperature
- RoHS Compliant

### Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	40	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	100	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	80	A
$I_{DM}$	Pulsed Drain Current	300	A
EAS	Single Pulse Avalanche Energy	715	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	90	W
$T_{STG}$	Storage Temperature Range	-55 to 175	$^\circ\text{C}$
$T_J$	Operating Junction Temperature Range	-55 to 175	$^\circ\text{C}$

### Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.4	$^\circ\text{C}/\text{W}$

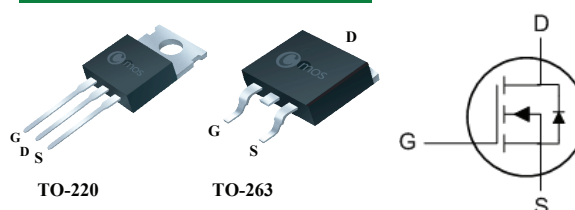
### Product Summary

BVDSS	RDSON	ID
40V	5.8m $\Omega$	100A

### Applications

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

### TO-220 Pin Configuration



Type	Package	Marking
CMP100N04C	TO-220	CMP100N04C
CMB100N04C	TO-263	CMB100N04C

Electrical Characteristics ( $T_J=25^{\circ}\text{C}$  , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$BV_{DS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V$ , $I_D=250\mu A$	40	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$ , $I_D=20A$	---	---	5.8	m $\Omega$
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=4.5V$ , $I_D=15A$	---	---	7.5	m $\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$ , $I_D=250\mu A$	1	---	3	V
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=40V$ , $V_{GS}=0V$	---	---	1	$\mu A$
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 20V$ , $V_{DS}=0V$	---	---	$\pm 100$	nA
gfs	Forward Transconductance	$V_{DS}=5V$ , $I_D=20A$	---	38	---	S
$R_g$	Gate Resistance	$V_{DS}=0V$ , $V_{GS}=0V$ , $f=1\text{MHz}$	---	1.1	---	$\Omega$
$Q_g$	Total Gate Charge	$I_{DS}=40A$	---	96	---	nC
$Q_{gs}$	Gate-Source Charge	$V_{DS}=32V$	---	18	---	
$Q_{gd}$	Gate-Drain Charge	$V_{GS}=10V$	---	39	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=20V$ , $I_{DS}=40A$	---	16	---	ns
$T_r$	Rise Time	$R_L=35\Omega$	---	96	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=4\Omega$	---	34	---	
$T_f$	Fall Time	$V_{GEN}=10V$	---	29	---	
$C_{iss}$	Input Capacitance	$V_{DS}=20V$ , $V_{GS}=0V$ , $f=1\text{MHz}$	---	2600	---	pF
$C_{oss}$	Output Capacitance		---	480	---	
$C_{rss}$	Reverse Transfer Capacitance		---	260	---	

## 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	$V_{GS}=0V$ , $I_S=20A$ , $T_J=25^{\circ}\text{C}$	---	---	1.2	V

Note :

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 Cmos assumes no liability for customers' product design or applications.  
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