

## N-Channel Enhancement Mode Field Effect Transistor

### General Description

The 100N68K is N-Channel MOSFET, It has specifically been designed to minimize input capacitance and gate charge. The device is therefore suitable in advanced high-efficiency switching applications.

### Features

- Minimize input capacitance and gate charge
- 100% avalanche tested
- Low On-Resistance

### Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	68	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	100	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	80	A
$I_{DM}$	Pulsed Drain Current	400	A
EAS	Single Pulse Avalanche Energy	500	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	170	W
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ C$
$T_J$	Operating Junction Temperature Range	-55 to 150	$^\circ C$

### Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.88	$^\circ C/W$

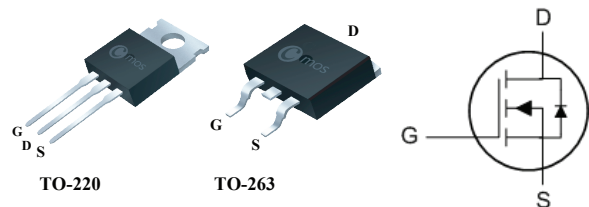
### Product Summary

BVDSS	RDSON	ID
68V	6.5m $\Omega$	100A

### Applications

- Motor Control
- DC-DC converters
- Switching applications

### TO-220/263 Pin Configuration



Type	Package	Marking
CMP100N68K	TO-220	CMP100N68K
CMB100N68K	TO-263	CMB100N68K

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	68	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=30A$	---	---	6.5	m $\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	2	---	4	V
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=68V, V_{GS}=0V$	---	---	1	$\mu A$
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	$\pm 100$	nA
gfs	Forward Transconductance	$V_{DS}=5V, I_D=30A$	---	42	---	S
$R_g$	Gate Resistance	$V_{DS}=0V, V_{GS}=0V, f=1\text{MHz}$	---	2.3	---	$\Omega$
$Q_g$	Total Gate Charge	$I_D=30A$	---	86	---	nC
$Q_{gs}$	Gate-Source Charge	$V_{DD}=30V$	---	19	---	
$Q_{gd}$	Gate-Drain Charge	$V_{GS}=10V$	---	29	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=30V$	---	17	---	ns
$T_r$	Rise Time	$I_D=1A$	---	11	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=2.5\Omega$	---	56	---	
$T_f$	Fall Time	$V_{GS}=10V$	---	14	---	
$C_{iss}$	Input Capacitance	$V_{DS}=30V, V_{GS}=0V, f=1\text{MHz}$	---	5100	---	pF
$C_{oss}$	Output Capacitance		---	360	---	
$C_{rss}$	Reverse Transfer Capacitance		---	320	---	

### Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$I_S$	Continuous Source Current	$V_G=V_D=0V, \text{Force Current}$	---	---	100	A
$I_{SM}$	Pulsed Source Current		---	---	400	A
$V_{SD}$	Diode Forward Voltage	$V_{GS}=0V, I_S=50A, T_J=25^{\circ}\text{C}$	---	---	1.2	V

Note :

This product has been designed and qualified for the consumer market.  
 Cmos assumes no liability for customers' product design or applications.  
 Cmos reserves the right to improve product design, functions and reliability without notice.