

General Description

The CMP90N68K 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	68	V
V_{GS}	Gate-Source Voltage	± 25	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	90	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	72	A
I_{DM}	Pulsed Drain Current	360	A
EAS	Single Pulse Avalanche Energy	450	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	140	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	---	62.5	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.1	$^\circ\text{C}/\text{W}$

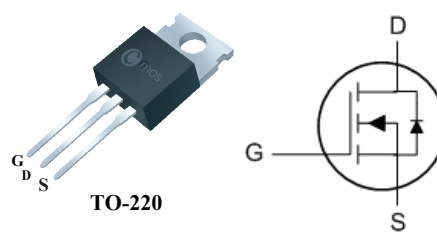
Product Summary

BVDSS	RDSON	ID
68V	9m Ω	90A

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
CMP90N68K	TO-220	CMP90N68K

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	68	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=25A$	---	---	9	m Ω
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=6V$, $I_D=20A$	---	---	17	m Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=60V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 25V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=10A$	---	25	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1MHz$	---	3.0	---	Ω
Q_g	Total Gate Charge	$I_D=62A$	---	142	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=44V$	---	33	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	40	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=28V$	---	13	---	ns
T_r	Rise Time	$I_D=62A$	---	100	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=4.5\Omega$	---	48	---	
T_f	Fall Time	$V_{GS}=10V$	---	64	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1MHz$	---	3500	---	pF
C_{oss}	Output Capacitance		---	250	---	
C_{rss}	Reverse Transfer Capacitance		---	211	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	90	A
I_{SM}	Pulsed Source Current		---	---	360	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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