

### General Description

The 060N10 uses advanced technology and design to provide excellent RDS(ON) .

This device is suitable for PWM, load switching and general purpose applications.

### Features

- VDS =100V, ID =90A  
RDS(ON) <7.0mΩ @ VGS=10V
- Low On-Resistance
- RoHS Compliant

### Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V <sub>DS</sub>	Drain-Source Voltage	100	V
V <sub>GS</sub>	Gate-Source Voltage	±20	V
I <sub>D</sub> @T <sub>C</sub> =25°C	Continuous Drain Current	90	A
I <sub>D</sub> @T <sub>C</sub> =100°C	Continuous Drain Current	72	A
I <sub>DM</sub>	Pulsed Drain Current	270	A
EAS	Single Pulse Avalanche Energy <sup>1</sup>	490	mJ
P <sub>D</sub>	Total Power Dissipation	83	W
T <sub>STG</sub>	Storage Temperature Range	-55 to 175	°C
T <sub>J</sub>	Operating Junction Temperature Range	-55 to 175	°C

### Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R <sub>θJA</sub>	Thermal Resistance Junction-ambient	---	60	°C/W
R <sub>θJC</sub>	Thermal Resistance Junction -Case	---	1.8	°C/W

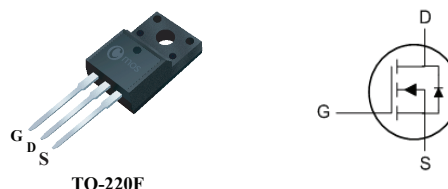
### Product Summary

BVDSS	RDS(ON)	ID
100V	7.0mΩ	90A

### Applications

- DC/DC Converter
- Ideal for high-frequency switching and synchronous rectification

### TO-220F Pin Configuration



Type	Package	Marking
CMF060N10	TO-220F	CMF060N10

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V$ , $I_D=250\mu A$	100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$ , $I_D=20A$	---	---	7.0	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	$V_{DS}=90V$ , $V_{GS}=0V$	---	---	1	$\mu A$
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 20V$ , $V_{DS}=0V$	---	---	$\pm 100$	nA
$g_{fs}$	Forward Transconductance	$V_{DS}=10V$ , $I_D=25A$	---	26	---	S
$R_g$	Gate Resistance	$V_{DS}=0V$ , $V_{GS}=0V$ , $f=1\text{MHz}$	---	2.5	---	$\Omega$
$Q_g$	Total Gate Charge	$I_D=20A$	---	39	---	nC
$Q_{gs}$	Gate-Source Charge	$V_{DS}=50V$	---	13	---	
$Q_{gd}$	Gate-Drain Charge	$V_{GS}=10V$	---	13	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=50V$	---	18	---	ns
$T_r$	Rise Time	$R_L=2.5\Omega$	---	25	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=3.0\Omega$	---	31	---	
$T_f$	Fall Time	$V_{GS}=10V$	---	25	---	
$C_{iss}$	Input Capacitance	$V_{DS}=50V$ , $V_{GS}=0V$ , $f=1\text{MHz}$	---	3500	---	pF
$C_{oss}$	Output Capacitance		---	1530	---	
$C_{rss}$	Reverse Transfer Capacitance		---	37	---	

## 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		---	---	270	A
$V_{SD}$	Diode Forward Voltage	$V_{GS}=0V$ , $I_S=50A$ , $T_J=25^{\circ}\text{C}$	---	---	1.2	V

## Notes:

1.The EAS data shows Max. rating . The test condition is  $V_{DD}=30V$  ,  $V_{GS}=10V$  ,  $L=1\text{mH}$  ,  $I_D=31.3A$

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