

## P-Channel Enhancement Mode MOSFET

### General Description

The CMF60P06 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
- Lower On-resistance
- RoHS Compliant

### Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	-60	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	-60	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	-48	A
$I_{DM}$	Pulsed Drain Current	-180	A
EAS	Single Pulse Avalanche Energy	340	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	60	W
$T_{STG}$	Storage Temperature Range	-55 to 175	$^\circ C$
$T_J$	Operating Junction Temperature Range	-55 to 175	$^\circ C$

### Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	40	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.2	$^\circ C/W$

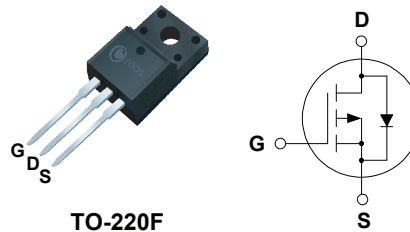
### Product Summary

BVDSS	RDSON	ID
-60V	19.5m $\Omega$	-60A

### Applications

- Inverters
- Motor drive
- DC / DC converter

### TO-220 Pin Configuration



Type	Package	Marking
CMF60P06	TO-220F	CMF60P06

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V, I_D=-20A$	---	---	19.5	m $\Omega$
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-4.5V, I_D=-20A$	---	---	22	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	$V_{DS}=-60V, V_{GS}=0V$	---	---	1	$\mu A$
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	$\pm 100$	nA
gfs	Forward Transconductance	$V_{DS}=-10V, I_D=-10A$	---	32	---	S
$R_g$	Gate Resistance	$V_{DS}=0V, V_{GS}=0V, f=1\text{MHz}$	---	9	---	$\Omega$
$Q_g$	Total Gate Charge	$I_D=-55A$	---	37	---	nC
$Q_{gs}$	Gate-Source Charge	$V_{DS}=-30V$	---	15	---	
$Q_{gd}$	Gate-Drain Charge	$V_{GS}=-4.5V$	---	20	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=-2V, I_{DS}=-10A$	---	11	---	ns
$T_r$	Rise Time	$R_L=2\Omega$	---	6	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=1\Omega$	---	71	---	
$T_f$	Fall Time	$V_{GEN}=-10V$	---	41	---	
$C_{iss}$	Input Capacitance	$V_{DS}=-25V, V_{GS}=0V, f=1\text{MHz}$	---	5800	---	pF
$C_{oss}$	Output Capacitance		---	390	---	
$C_{rss}$	Reverse Transfer Capacitance		---	290	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$I_S$	Continuous Source Current	$V_G=V_D=0V, \text{Force Current}$	---	---	-60	A
$I_{SM}$	Pulsed Source Current		---	---	-180	A
$V_{SD}$	Diode Forward Voltage	$V_{GS}=0V, I_S=-20A, T_J=25^{\circ}\text{C}$	---	---	-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.