

General Description

These N-Channel enhancement mode power field effect transistors are produced using advanced technology which has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficiency switched mode power supplies, active power factor correction, electronic lamp ballasts based on half bridge topology.

Features

- Originative New Design
- 100% avalanche tested
- Fast switching
- Improved dv/dt capability
- Very Low Intrinsic Capacitances

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	600	V
V_{GS}	Gate-Source Voltage	±30	V
$I_D@T_C=25^{\circ}C$	Continuous Drain Current	7.5	A
$I_D@T_C=100^{\circ}C$	Continuous Drain Current	5.5	A
I_{DM}	Pulsed Drain Current	30	A
EAS	Single Pulse Avalanche Energy	480	mJ
$P_D@T_C=25^{\circ}C$	Total Power Dissipation	40	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Rating	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	62.5	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	3.0	°C/W

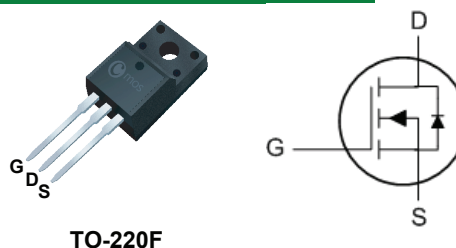
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
600V	1.15Ω	7.5A

Applications

- Charger
- Adaptor
- Power Supply
- Electrodeless lamp

TO-220F Pin Configuration



Type	Package	Marking
CMF8N60A	TO-220F	CMF8N60A

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	600	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=3.5A$	---	1.02	1.15	Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	3	---	5	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=600V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 30V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=15V$, $I_D=3.5A$	---	8	---	S
Q_g	Total Gate Charge	$I_D=7A$	---	18	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=480V$	---	5	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	8	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{GS}=10V$	---	23	---	ns
T_r	Rise Time	$V_{DS}=300V$	---	37	---	
$T_{d(off)}$	Turn-Off Delay Time	$I_D=7A$	---	36	---	
T_f	Fall Time	$R^{\theta}=25\Omega$	---	26	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1MHz$	---	1300	---	pF
C_{oss}	Output Capacitance		---	92	---	
C_{rss}	Reverse Transfer Capacitance		---	10	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	7.5	A
I_{SM}	Pulsed Source Current		---	---	30	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=7.5A$, $T_J=25^{\circ}\text{C}$	---	---	1.5	V
t_{rr}	Reverse Recovery Time	$V_{GS}=0V$, $I_S=7.5A$, $T_J=25^{\circ}\text{C}$	---	350	---	ns
Q_{rr}	Reverse Recovery Charge	$di/dt=100A/\mu s$	---	3.3	---	μC

Notes:

This product has been designed and qualified for the consumer market.

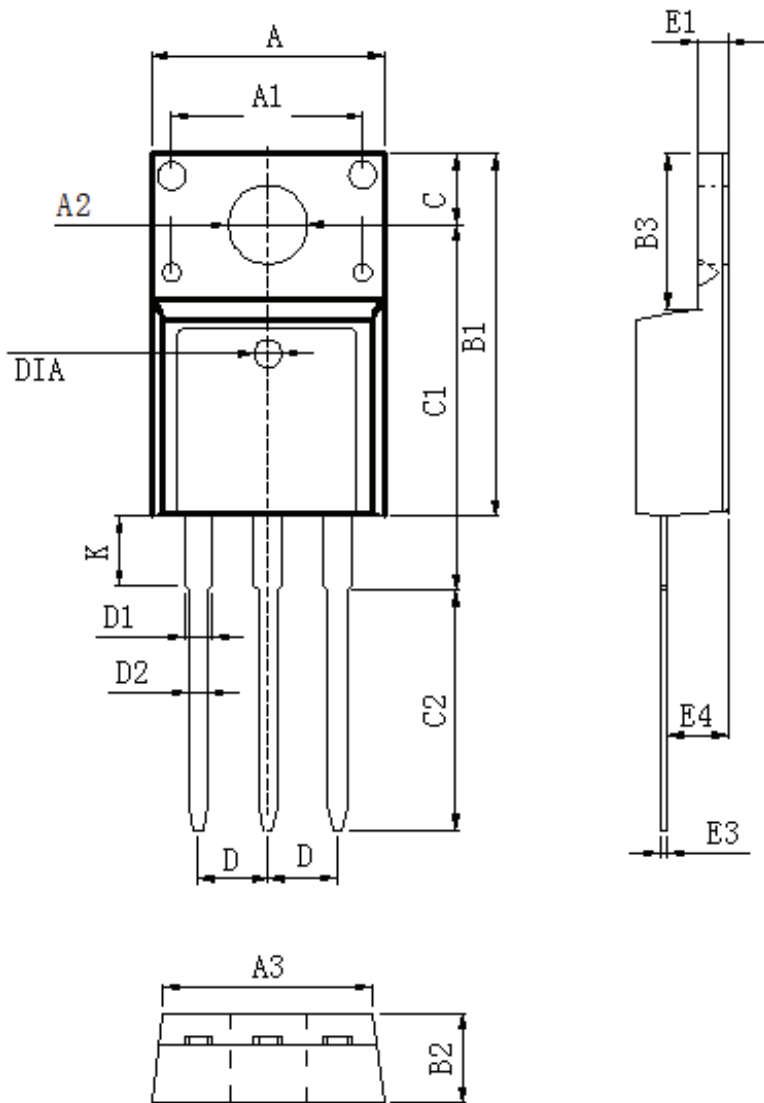
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Cmos reserves the right to improve product design, functions and reliability without notice. Please refer to the latest version of specification.

Package Dimension

TO-220F

Unit :mm



DIM	MILLIMETERS
A	10.16±0.3
A1	7.00±0.1
A2	3.3±0.2
A3	9.5±0.2
B1	15.87±0.3
B2	4.7±0.2
B3	6.68±0.4
C	3.3±0.2
C1	12.57±0.3
C2	10.02±0.5
D	2.54±0.05
D1	1.28±0.2
D2	0.8±0.1
K	3.1±0.3
E1	2.54±0.1
E3	0.5±0.1
E4	2.76±0.2
DIA	⌀1.5 (deep 0.2)