

General Description

The CMF060N10 uses advanced SGT technology to provide excellent RDS(ON). This device is ideal for PWM, load switching and general purpose applications.

Features

- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

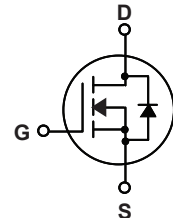
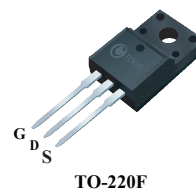
Product Summary

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

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	90	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	72	A
I_{DM}	Pulsed Drain Current	360	A
EAS	Single Pulse Avalanche Energy ¹	612	mJ
P_D	Total Power Dissipation	83	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	60	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.51	°C/W

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 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	$V_{DS}=90V, V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 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	---	Ω
Q_g	Total Gate Charge	$I_D=27.5A$	---	45	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=50V$	---	12	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	9	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=50V$	---	16	---	ns
T_r	Rise Time	$I_D=25A$	---	11	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_{GEN}=1.6\Omega$	---	30	---	
T_f	Fall Time	$V_{GS}=10V$	---	9	---	
C_{iss}	Input Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1\text{MHz}$	---	3500	---	pF
C_{oss}	Output Capacitance		---	1250	---	
C_{rss}	Reverse Transfer Capacitance		---	80	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V, \text{Force Current}$	---	---	90	A
I_{SM}	Pulsed Source Current		---	---	360	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_S=50A, T_J=25^{\circ}\text{C}$	---	---	1.2	V

Notes:

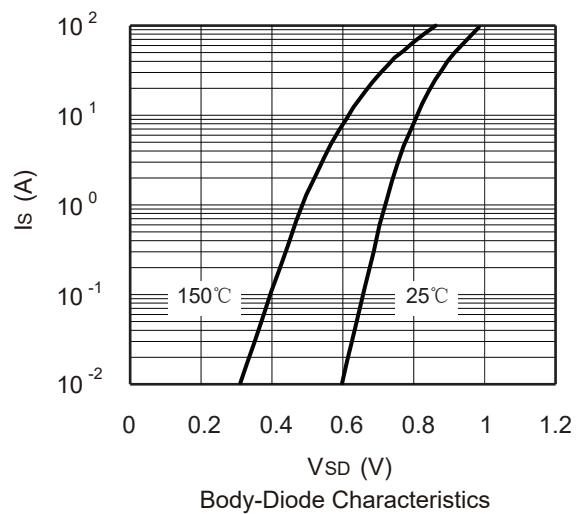
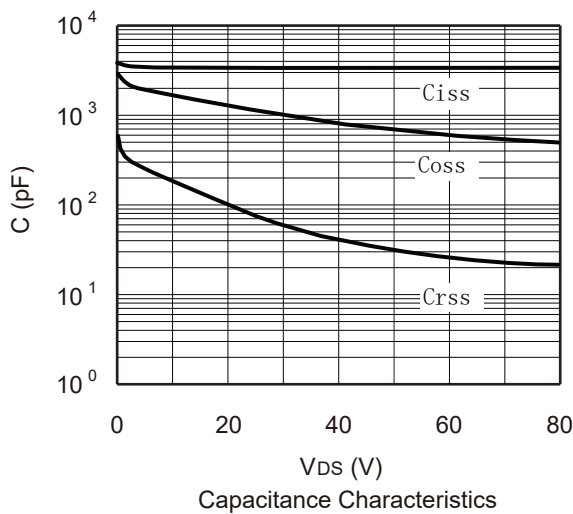
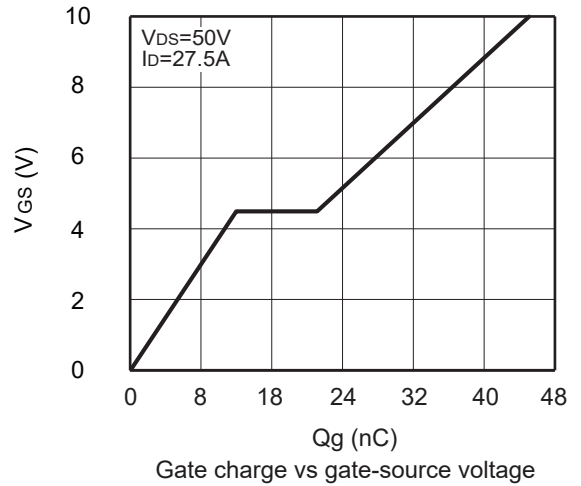
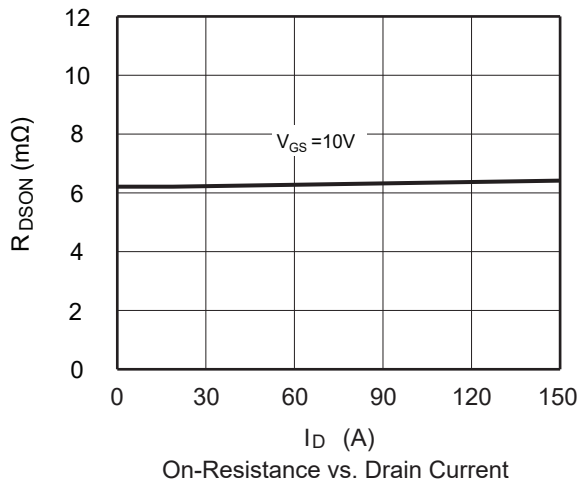
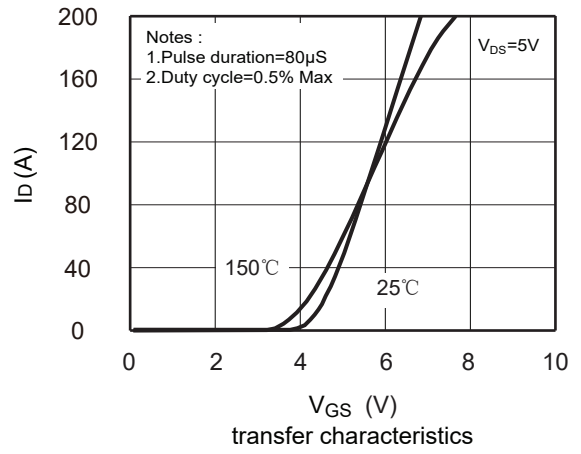
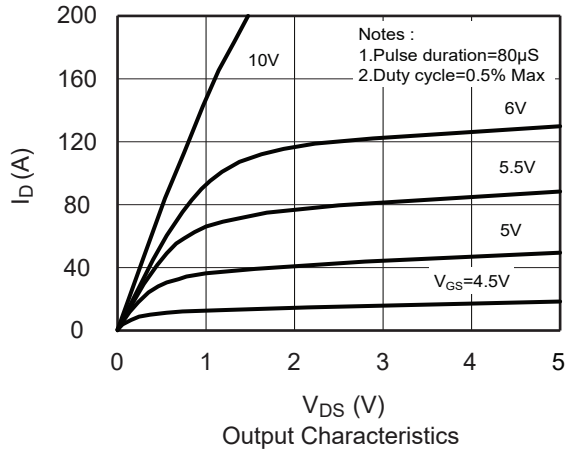
1.The EAS data shows Max. rating . The test condition is $V_{DD}=40V, V_{GS}=10V, L=0.5\text{mH}, I_D=49.5A$

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.Please refer to the latest version of specification.

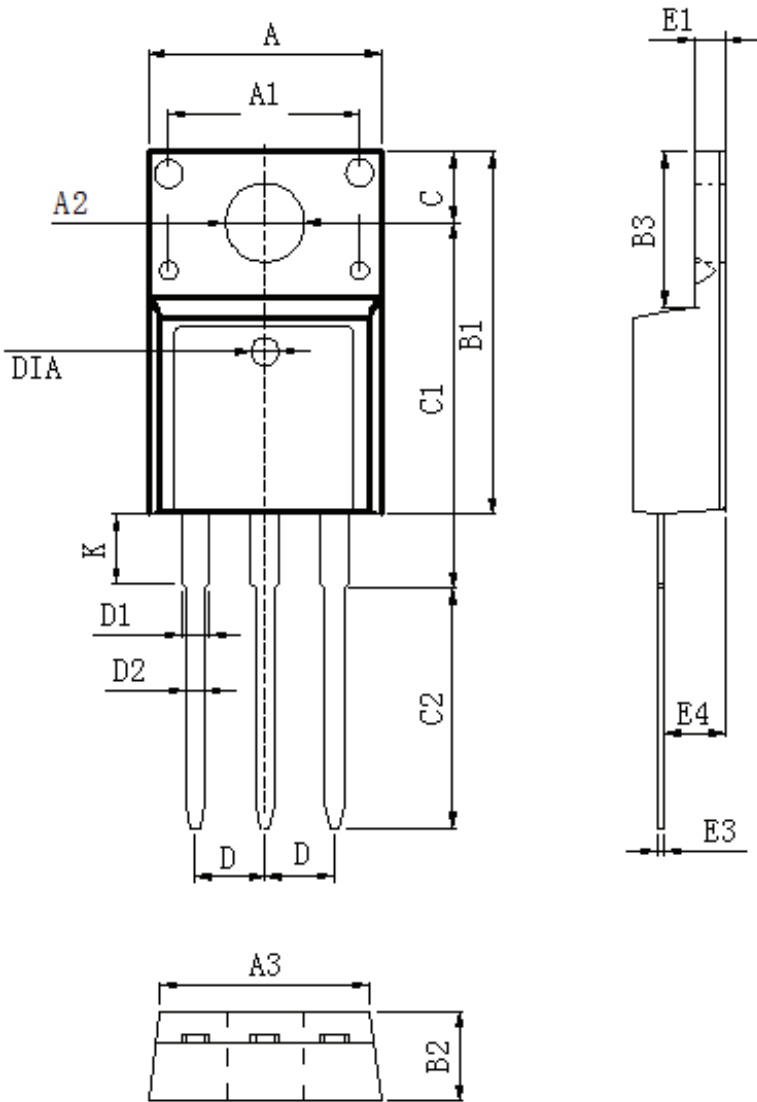
Typical Characteristics



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)