

General Description

CMF80R450Q is power MOSFET using CMOS's advanced super junction technology that can realize very low on-resistance and gate charge. It will provide much high efficiency by using optimized charge coupling technology.

Features

- 100% avalanche tested
- Excellent ESD robustness
- Multi-layer Epitaxial Chip Technology
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	800	V
V_{GS}	Gate-Source Voltage	±30	V
$I_D@T_C=25^{\circ}C$	Continuous Drain Current	11	A
$I_D@T_C=100^{\circ}C$	Continuous Drain Current	7	A
I_{DM}	Pulsed Drain Current	44	A
EAS	Single Pulse Avalanche Energy ¹	120	mJ
$P_D@T_C=25^{\circ}C$	Total Power Dissipation	30	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	75	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	4	°C/W

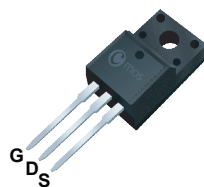
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
800V	0.45Ω	11A

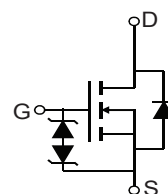
Applications

- Charger
- Adaptor
- Power Supply
- Electrodeless lamp

TO-220F Pin Configuration



TO-220F



Type	Package	Marking
CMF80R450Q	TO-220F	CMF80R450Q

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	800	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=7.1A$	---	0.39	0.45	Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	2.5	---	4.5	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=800V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 30V$, $V_{DS}=0V$	---	---	± 10	μA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=11A$	---	30	---	S
Q_g	Total Gate Charge	$I_D=11A$	---	25	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=640V$	---	6.9	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	9.3	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{GS}=10V$	---	25	---	ns
T_r	Rise Time	$V_{DD}=400V$	---	42	---	
$T_{d(off)}$	Turn-Off Delay Time	$I_D=11A$	---	140	---	
T_f	Fall Time	$R_G=25\Omega$	---	22	---	
C_{iss}	Input Capacitance	$V_{DS}=100V$, $V_{GS}=0V$, $f=1MHz$	---	920	---	pF
C_{oss}	Output Capacitance		---	48	---	
C_{rss}	Reverse Transfer Capacitance		---	3	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	11	A
I_{SM}	Pulsed Source Current		---	---	44	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=11A$, $T_J=25^{\circ}\text{C}$	---	---	1.4	V
t_{rr}	Reverse Recovery Time	$di/dt = 100A/\mu s$	---	441	---	ns
Q_{rr}	Reverse Recovery Charge	$V_{DD}=100V$, $I_{SD}=11A$	---	5.4	---	μC

Notes:

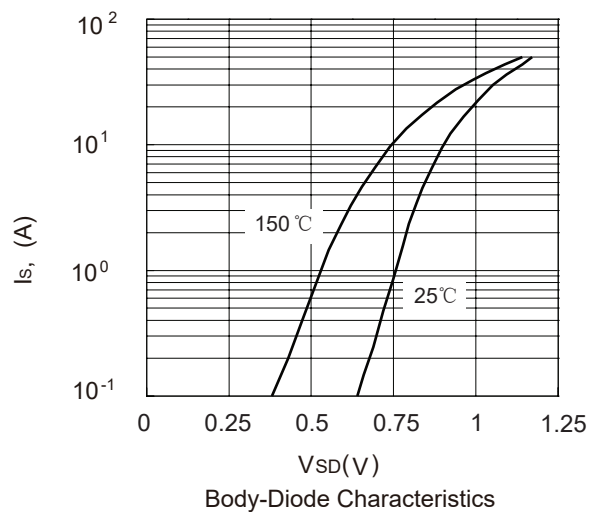
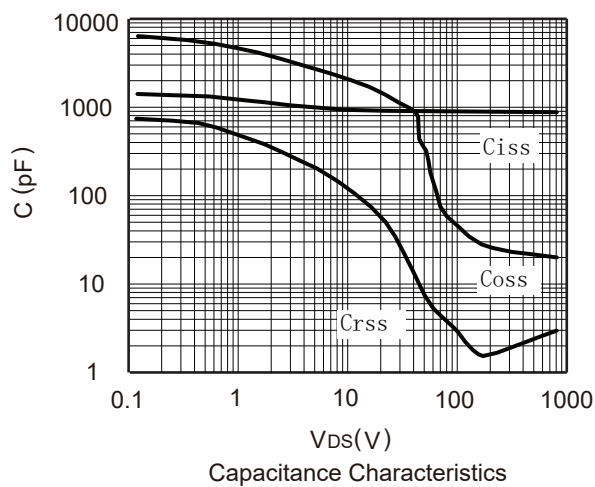
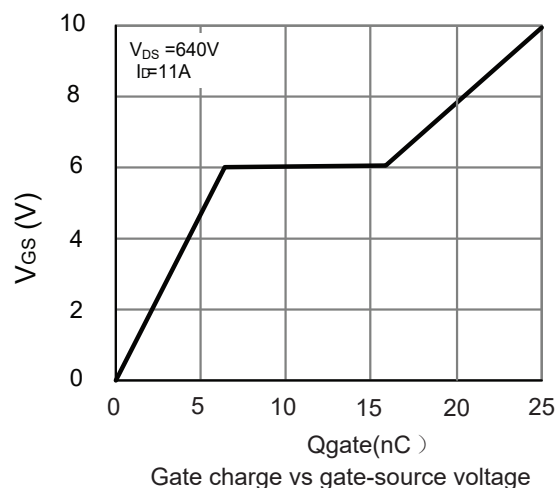
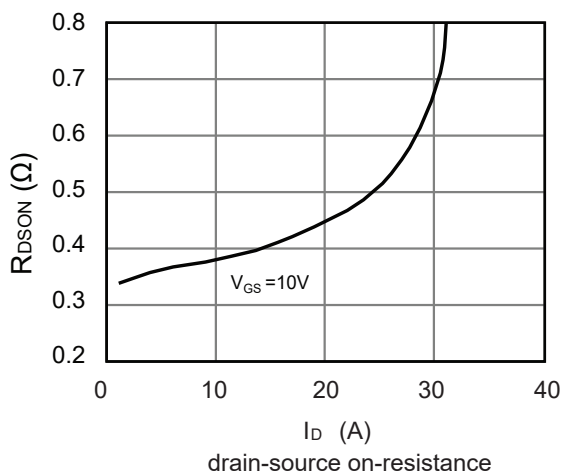
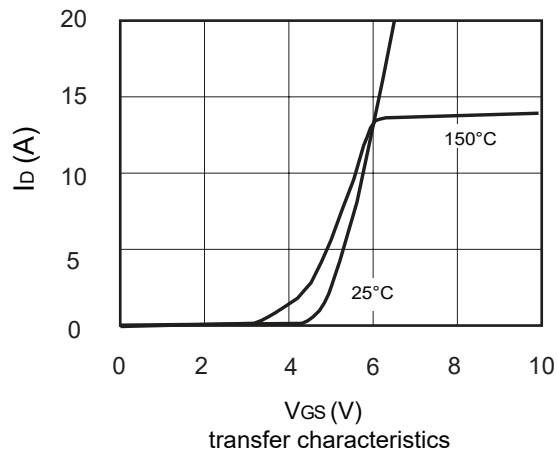
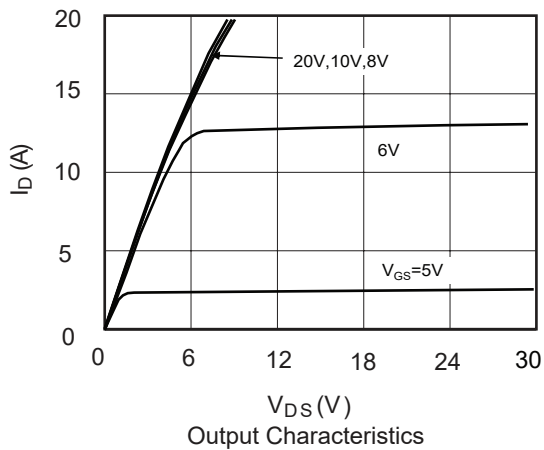
1.The EAS data shows Max. rating . The test condition is $V_{DD}=80V$, $V_{GS}=10V$, $L=15mH$, $I_{AS}=4A$.

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

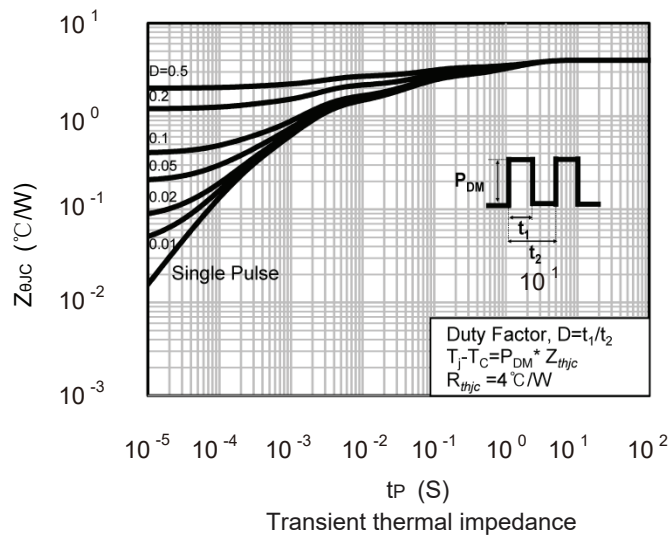
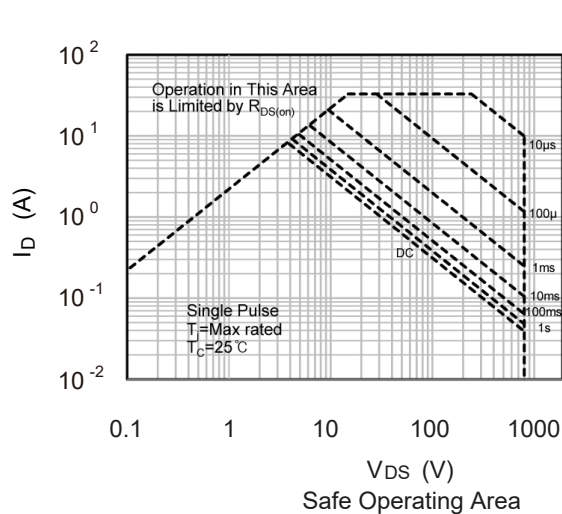
Cmos assumes no liability for customers' product design or applications.

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

Typical Characteristics



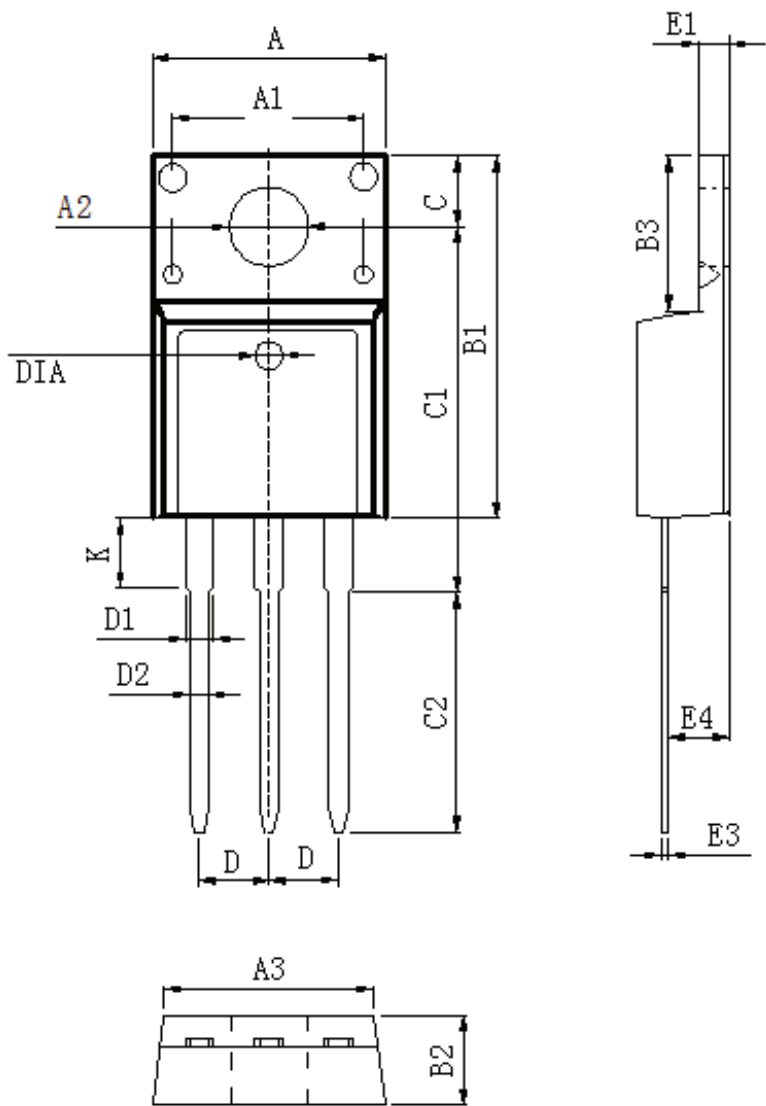
Typical Characteristics



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)