

General Description

CMF90R450Q 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

- $R_{DS(ON)} < 0.45\Omega$ @ $V_{GS} = 10V$
- 100% avalanche tested
- RoHS Compliant
- Low Power Loss by High Speed Switching and Low On-Resistance

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	900	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	50	mJ
$P_D @ T_C = 25^\circ C$	Total Power Dissipation	40	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ C$

Thermal Data

Symbol	Parameter	Rating	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	62.5	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-case	3.5	$^\circ C/W$

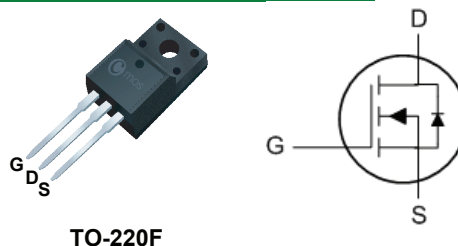
Product Summary

BVDSS	$R_{DS(ON)}$	ID
900V	0.45Ω	11A

Applications

- Charger
- Adaptor
- Power Supply
- Electrodeless lamp

TO-220F Pin Configuration



Type	Package	Marking
CMF90R450Q	TO-220F	CMF90R450Q

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	900	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=7.1A$	---	---	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	$V_{DS}=640V$	---	7	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	9	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{GS}=10V$	---	25	---	ns
T_r	Rise Time	$V_{DD}=400V$	---	45	---	
$T_{d(off)}$	Turn-Off Delay Time	$I_D=11A$	---	140	---	
T_f	Fall Time	$R_G=25\Omega$	---	22	---	
C_{iss}	Input Capacitance	$V_{DS}=100V$, $V_{GS}=0V$, $f=1MHz$	---	960	---	pF
C_{oss}	Output Capacitance		---	40	---	
C_{rss}	Reverse Transfer Capacitance		---	1.5	---	

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	$V_{GS}=0V$, $I_S=11A$	---	---	1.2	V

Notes:

1.The EAS data shows Max. rating . The test condition is $V_{DD}=80V$, $V_{GS}=10V$, $L=5mH$, $I_{AS}=4.5A$

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.