

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

- 100% avalanche tested
- Excellent ESD robustness
- Low Power Loss by High Speed Switching and Low On-Resistance
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	900	V
V_{GS}	Gate-Source Voltage	± 30	V
$I_D@T_C=25^{\circ}\text{C}$	Continuous Drain Current	11	A
$I_D@T_C=100^{\circ}\text{C}$	Continuous Drain Current	7	A
I_{DM}	Pulsed Drain Current	44	A
EAS	Single Pulse Avalanche Energy ¹	50	mJ
$P_D@T_C=25^{\circ}\text{C}$	Total Power Dissipation	31	W
T_{STG}	Storage Temperature Range	-55 to 150	$^{\circ}\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^{\circ}\text{C}$

Thermal Data

Symbol	Parameter	Rating	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	75	$^{\circ}\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	4	$^{\circ}\text{C/W}$

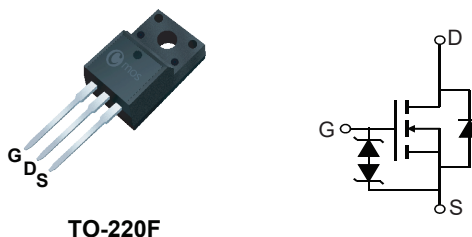
Product Summary

BVDSS	RDSON	ID
900V	0.45 Ω	11A

Applications

- Charger
- Adaptor
- Power Supply
- Electrodeless lamp

TO-220F Pin Configuration



TO-220F

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	$V_{DS}=25V$, $V_{GS}=0V$, $f=1MHz$	---	960	---	pF
C_{oss}	Output Capacitance		---	1350	---	
C_{rss}	Reverse Transfer Capacitance		---	35	---	

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	$V_{GS}=0V$, $I_S=11A$	---	---	1.4	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.

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

Cmos reserves the right to improve product design ,functions and reliability without notice.

Typical Characteristics

