

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

- RDS(ON)<0.45Ω @ VGS=10V
- 100% avalanche tested
- RoHS Compliant
- Low Power Loss by High Speed Switching and Low On-Resistance

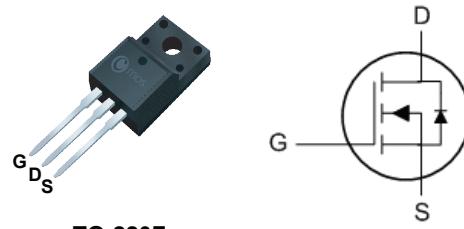
Product Summary

BVDSS	RDSON	ID
900V	0.45Ω	11A

Applications

- Charger
- Adaptor
- Power Supply
- Electrodeless lamp

TO-220F Pin Configuration



TO-220F

Type	Package	Marking
CMF90R450Q	TO-220F	CMF90R450Q

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	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	3.5	°C/W

Electrical Characteristics (T_J=25°C , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =250uA	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 =250uA	2.5	---	4.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =800V , V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =± 30V , V _{DS} =0V	---	---	±10	uA
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 =25Ω	---	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 VDD=80V,Vgs=10V,L=5mH,IAS=4.5A

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