CMF150N04

40V N-Channel MOSFET

General Description

The 150N04 is N-Channel MOSFET, It has specifically been designed to minimize input capacitance and gate charge. The device is therefore suitable in advanced high-efficiency switching applications.

Product Summary

BVDSS	RDSON	ID
40V	3.5mΩ	120A

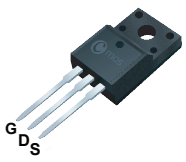
Applications

- Motor Control
- DC-DC converters
- Switching applications

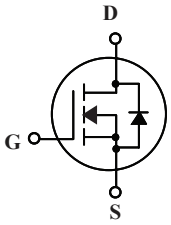
Features

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

TO-220F Pin Configuration



TO-220F
(CMF150N04)



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	40	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current	120	A
I_D@T_C=100℃	Continuous Drain Current	95	A
I_{DM}	Pulsed Drain Current	360	A
EAS	Single Pulse Avalanche Energy [1]	460	mJ
P_D@T_C=25℃	Total Power Dissipation	41	W
T_{STG}	Storage Temperature Range	-55 to 175	℃
T_J	Operating Junction Temperature Range	-55 to 175	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient(Steady-State)	---	65	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case(Steady-State)	---	3.6	℃/W

Electrical Characteristics (T_J=25℃ , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	40	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=20A	---	3	3.5	mΩ
		V_{GS}=4.5V , I_D=20A	---	4.7	5.5	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=40 V, V_{GS}=0V	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS} = ±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=10V , I_D=20A	---	25	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	2	---	Ω
Q_g	Total Gate Charge	I_D=120A V_{DD}=20V V_{GS}=10V	---	76	---	nC
Q_{gs}	Gate-Source Charge		---	24	---	
Q_{gd}	Gate-Drain Charge		---	18	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=20V R_{GEN}=4.7Ω I_D=60A V_{GS}=10V	---	20	---	ns
T_r	Rise Time		---	181	---	
$T_{d(off)}$	Turn-Off Delay Time		---	91	---	
T_f	Fall Time		---	66	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	6700	---	pF
C_{oss}	Output Capacitance		---	600	---	
C_{rss}	Reverse Transfer Capacitance		---	120	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	120	A
I_{SM}	Pulsed Source Current		---	---	360	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=20A , T_J=25℃	---	---	1.2	V

Notes:

1.The EAS data shows Max. rating .The test condition is V_{DS}=20V , V_{GS}=10V , L=0.5mH , I_{AS}=43A.

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