

General Description

The 060N10 uses advanced technology and design to provide excellent RDS(ON) .

This device is suitable for PWM, load switching and general purpose applications.

Features

- VDS =100V, ID =90A
RDS(ON) <7.0mΩ @ VGS=10V
- Low On-Resistance
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_c=25^\circ\text{C}$	Continuous Drain Current	90	A
$I_D@T_c=100^\circ\text{C}$	Continuous Drain Current	72	A
I_{DM}	Pulsed Drain Current	270	A
EAS	Single Pulse Avalanche Energy ¹	490	mJ
P_D	Total Power Dissipation	83	W
T_{STG}	Storage Temperature Range	-55 to 175	°C
T_J	Operating Junction Temperature Range	-55 to 175	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	60	°C/W
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	1.8	°C/W

Product Summary

BVDSS	RDSON	ID
100V	7.0mΩ	90A

Applications

- DC/DC Converter
- Ideal for high-frequency switching and synchronous rectification

TO-220F Pin Configuration



Type	Package	Marking
CMF060N10	TO-220F	CMF060N10

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$\text{V}_{\text{GS}}=0\text{V}$, $\text{I}_{\text{D}}=250\mu\text{A}$	100	---	---	V
$\text{R}_{\text{DS(ON)}}$	Static Drain-Source On-Resistance	$\text{V}_{\text{GS}}=10\text{V}$, $\text{I}_{\text{D}}=20\text{A}$	---	---	7.0	$\text{m}\Omega$
$\text{V}_{\text{GS(th)}}$	Gate Threshold Voltage	$\text{V}_{\text{GS}}=\text{V}_{\text{DS}}$, $\text{I}_{\text{D}}=250\mu\text{A}$	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	$\text{V}_{\text{DS}}=90\text{V}$, $\text{V}_{\text{GS}}=0\text{V}$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$\text{V}_{\text{GS}}=\pm 20\text{V}$, $\text{V}_{\text{DS}}=0\text{V}$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$\text{V}_{\text{DS}}=10\text{V}$, $\text{I}_{\text{D}}=25\text{A}$	---	26	---	S
R_{g}	Gate Resistance	$\text{V}_{\text{DS}}=0\text{V}$, $\text{V}_{\text{GS}}=0\text{V}$, $f=1\text{MHz}$	---	2.5	---	Ω
Q_{g}	Total Gate Charge	$\text{I}_{\text{D}}=20\text{A}$	---	39	---	nC
Q_{gs}	Gate-Source Charge	$\text{V}_{\text{DS}}=50\text{V}$	---	13	---	
Q_{gd}	Gate-Drain Charge	$\text{V}_{\text{GS}}=10\text{V}$	---	13	---	
$\text{T}_{\text{d(on)}}$	Turn-On Delay Time	$\text{V}_{\text{DS}}=50\text{V}$	---	18	---	ns
T_{r}	Rise Time	$\text{R}_{\text{L}}=2.5\Omega$	---	25	---	
$\text{T}_{\text{d(off)}}$	Turn-Off Delay Time	$\text{R}_{\text{G}}=3.0\Omega$	---	31	---	
T_{f}	Fall Time	$\text{V}_{\text{GS}}=10\text{V}$	---	25	---	
C_{iss}	Input Capacitance	$\text{V}_{\text{DS}}=50\text{V}$, $\text{V}_{\text{GS}}=0\text{V}$, $f=1\text{MHz}$	---	3500	---	pF
C_{oss}	Output Capacitance		---	1530	---	
C_{rss}	Reverse Transfer Capacitance		---	37	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_{S}	Continuous Source Current	$\text{V}_{\text{G}}=\text{V}_{\text{D}}=0\text{V}$, Force Current	---	---	90	A
I_{SM}	Pulsed Source Current		---	---	270	A
V_{SD}	Diode Forward Voltage	$\text{V}_{\text{GS}}=0\text{V}$, $\text{I}_{\text{S}}=50\text{A}$, $T_J=25^\circ\text{C}$	---	---	1.2	V

Notes:

1.The EAS data shows Max. rating . The test condition is $\text{V}_{\text{DD}}=30\text{V}$, $\text{V}_{\text{GS}}=10\text{V}$, $\text{L}=1\text{mH}$, $\text{I}_{\text{D}}=31.3\text{A}$

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