

General Description

The 2910 uses advanced process technology and design to provide excellent RDS(ON).

This device is ideal for boost converters and synchronous rectifiers for consumer, telecom, industrial power supplies and LED backlighting.

Features

- 100% avalanche tested
- Fast Switching
- Improved dv/dt capability

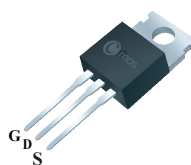
Product Summary

BVDSS	RDSON	ID
100V	24mΩ	30A

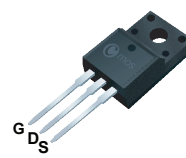
Applications

- High Efficiency Synchronous Rectification in SMPS
- Uninterruptible Power Supply
- Hard Switched and High Frequency Circuits

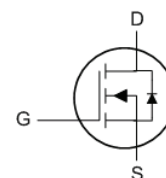
TO-220/220F Pin Configuration



TO-220
(CMP2910)



TO-220F
(CMF2910)



Absolute Maximum Ratings

Symbol	Parameter	CMP2910/CMF2910		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	30	30*	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	21	21*	A
I_{DM}	Pulsed Drain Current ¹	80	80*	A
EAS	Single Pulse Avalanche Energy ²	136		mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	50	25	W
T_{STG}	Storage Temperature Range	-55 to 175		$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 175		$^\circ\text{C}$

* Drain current limited by maximum junction temperature.

Thermal Data

Symbol	Parameter	CMP2910	CMF2910	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	60	60	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	3	5.5	$^\circ\text{C}/\text{W}$

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=15A$	---	---	24	$m\Omega$
		$V_{GS}=4.5V$, $I_D=15A$	---	---	36	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=50V$, $V_{GS}=0V$	---	---	1	μA
		$V_{DS}=50V$, $V_{GS}=0V$, $T_J=55^{\circ}\text{C}$	---	---	5	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 10V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=15A$	---	18	---	S
Q_g	Total Gate Charge	$I_D=20A$	---	15	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=50V$	---	4	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	3	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=50V$	---	8	---	ns
T_r	Rise Time	$R_{GEN}=3\Omega$	---	10	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_L=2.5\Omega$	---	25	---	
T_f	Fall Time	$V_{GS}=10V$	---	5	---	
C_{iss}	Input Capacitance	$V_{DS}=50V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1400	---	pF
C_{oss}	Output Capacitance		---	100	---	
C_{rss}	Reverse Transfer Capacitance		---	10	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	30	A
I_{SM}	Pulsed Source Current		---	---	80	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=15A$, $T_J=25^{\circ}\text{C}$	---	---	1	V

Note :

1. Repetitive rating, pulse width limited by junction temperature $T_J(\text{MAX})=175^{\circ}\text{C}$. Ratings are based on low frequency and duty cycles to keep initial $T_J=25^{\circ}\text{C}$.

2. The EAS data shows Max. rating . The test condition is $V_{DD}=50V$, $V_{GS}=10V$, $L=1\text{mH}$, $I_{AS}=16.5A$

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.