

General Description

The CMD30DN03 is a high performance trench Dual N-channel MOSFET which utilizes extremely high cell density to provide low $R_{DS(on)}$ and gate charge characteristics. It is ideally suited to support synchronous buck converter applications.

Features

- Low On-Resistance
- 100% avalanche tested
- Simple Drive Requirements
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	30	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	21	A
I_{DM}	Pulsed Drain Current	90	A
EAS	Single Pulse Avalanche Energy ¹	48	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	25	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	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	42	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	5	$^\circ\text{C}/\text{W}$

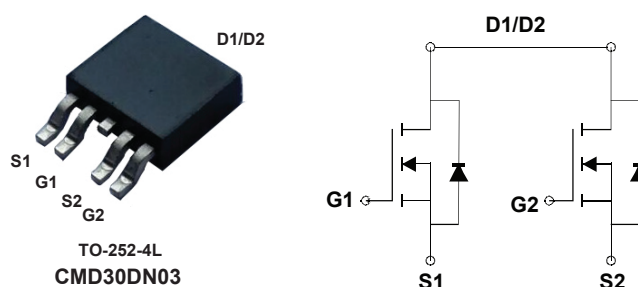
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
30V	14mΩ	30A

Applications

- DC/DC Converter
- Load Switch
- Power Management in Note book

TO-252-4L Pin Configuration



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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=6A$	---	12	14	mΩ
		$V_{GS}=4.5V$, $I_D=5A$	---	17	21	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1	---	2.5	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=30V$, $V_{GS}=0V$	---	---	1	uA
		$V_{DS}=24V$, $V_{GS}=0V$, $T_J=125^{\circ}\text{C}$	---	---	10	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V$, $I_D=6A$	---	8	---	S
Q_g	Total Gate Charge	$V_{DS}=15V$, $I_D=15A$ $V_{GS}=4.5V$	---	7	---	nC
Q_{gs}	Gate-Source Charge		---	2.7	---	
Q_{gd}	Gate-Drain Charge		---	3	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=15V$, $V_{GS}=10V$, $R_G=3.3\Omega$ $I_D=15A$	---	10	---	ns
T_r	Rise Time		---	60	---	
$T_{d(off)}$	Turn-Off Delay Time		---	15	---	
T_f	Fall Time		---	13	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	820	---	pF
C_{oss}	Output Capacitance		---	85	---	
C_{rss}	Reverse Transfer Capacitance		---	70	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Diode continuous forward current	$V_G=V_D=0V$, Force Current	---	---	30	A
$I_{S,pulse}$	Diode pulse current		---	---	90	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_F=6A$, $T_J=25^{\circ}\text{C}$	---	0.84	1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is $V_{DD}=25V$, $V_{GS}=10V$, $L=0.3\text{mH}$, $I_{AS}=18A$.

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

Typical Characteristics

