

CMD60N03B/CMU60N03B

30V, 7.6mΩ typ., 60A N-Channel MOSFET

General Description

The 60N03B uses advanced process technology and design to provide excellent RDS(ON). This device is suitable for DC to DC converter and general purpose applications.

Product Summary

BVDSS	RDS(on) max.	ID
30V	8.5mΩ	60A

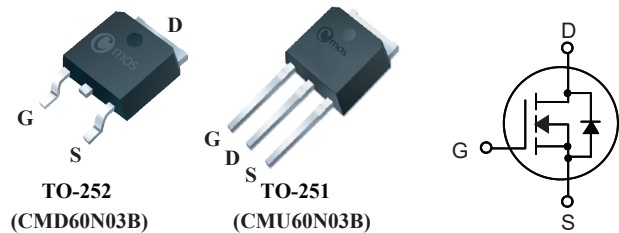
Applications

- DC/DC Converters in Computing, Servers, and POL
- Isolated DC/DC Converters in Telecom and Industrial

Features

- Low ON-resistance
- Low Gate Charge
- 100% avalanche tested
- RoHS Compliant

DFN-8 5x6 Pin Configuration



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°C	Continuous Drain Current	60	A
I _D @T _C =100°C	Continuous Drain Current	42	A
I _{DM}	Pulsed Drain Current	240	A
EAS	Single Pulse Avalanche Energy ¹	72	mJ
P _D @T _C =25°C	Total Power Dissipation	55	W
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance Junction-ambient(Steady-State)	---	50	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	2.27	°C/W

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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	$V_{GS}=10V$, $I_D=25A$	---	7.6	8.5	mΩ
		$V_{GS}=4.5V$, $I_D=20A$	---	9.7	12	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=30V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	±100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V$, $I_D=20A$	---	22	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1	---	Ω
Q_g	Total Gate Charge	$I_D=20A$	---	15	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=15V$	---	2.5	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=10V$	---	2.5	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=15V$	---	4.5	---	ns
T_r	Rise Time	$V_{GS}=10V$	---	4	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_{GEN}=3\Omega$	---	20	---	
T_f	Fall Time	$R_L=0.75\Omega$	---	3	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1100	---	pF
C_{oss}	Output Capacitance		---	360	---	
C_{rss}	Reverse Transfer Capacitance		---	30	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	60	A
I_{SM}	Pulsed Source Current		---	---	240	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=20A$, $T_J=25^{\circ}\text{C}$	---	0.92	1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is $V_{DD}=25V$, $V_{GS}=10V$, $L=0.5\text{mH}$, $I_{AS}=17A$.

This product has been designed and qualified for the consumer market.
Cmos assumes no liability for customers' product design or applications.
Cmos reserves the right to improve product design ,functions and reliability without notice.

Typical Characteristics

