CMD70N03/CMU70N03

30V N-Channel MOSFET

General Description

The 70N03 is the highest performance trench N-ch MOSFETs with extreme high cell density ,which provide excellent RDSON and gate charge for most of the synchronous buck converter applications .

The 70N03 meet the RoHS requirement , 100% EAS guaranteed with full function reliability approved.

Features

- Advanced high cell density Trench technology
- Super Low Gate Charge
- 100% avalanche tested
- RoHS Compliant

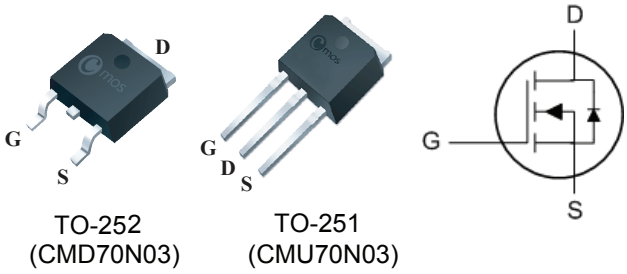
Product Summary

BVDSS	RDSON	ID
30V	7mΩ	70A

Applications

- High Frequency Point-of-Load Synchronous Buck Converter for MB/NB/UMPC/VGA
- Networking DC-DC Power System
- Load Switch

TO-252/251 Pin Configuration



TO-252 (CMD70N03)

TO-251 (CMU70N03)

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℃	Continuous Drain Current	70	A
I_D@T_C=100℃	Continuous Drain Current	50	A
I_{DM}	Pulsed Drain Current[1]	170	A
EAS	Single Pulse Avalanche Energy[2]	85	mJ
P_D@T_C=25℃	Total Power Dissipation	65	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	---	70	℃/W
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	2	℃/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	30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance[1]	V_{GS}=10V , I_D=28A	---	4	7	mΩ
		V_{GS}=4.5V , I_D=25A	---	7.5	11.5	
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D = 250μA	1	1.7	3	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=20V , V_{GS}=0V , T_J=25℃	---	---	1	uA
		V_{DS}=20V , V_{GS}=0V , T_J=150℃	---	---	10	
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=10V, I_D=28A	---	30	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	1.7	3.4	Ω
Q_g	Total Gate Charge	V_{DS}=15V , V_{GS}=5V , I_D=30A	---	15	---	nC
Q_{gs}	Gate-Source Charge		---	8.1	---	
Q_{gd}	Gate-Drain Charge		---	4.7	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=15V , V_{GS}=10V , R_G=3.3Ω I_D=30A	---	13	---	ns
T_r	Rise Time		---	6.7	---	
$T_{d(off)}$	Turn-Off Delay Time		---	22.5	---	
T_f	Fall Time		---	10.1	---	
C_{iss}	Input Capacitance	V_{DS}=20V , V_{GS}=0V , f=1MHz	---	3200	---	pF
C_{oss}	Output Capacitance		---	510	---	
C_{rss}	Reverse Transfer Capacitance		---	180	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	70	A
I_{SM}	Pulsed Source Current[1]		---	---	170	A
V_{SD}	Diode Forward Voltage[1]	V_{GS}=0V , I_S=10A , T_J=25℃	---	---	1.3	V

Note :

1.The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%

2.The test condition is V_{DD}=30V,V_{GS}=10V,L=0.1mH,I_L=12A

This product has been designed and qualified for the counsumer market.
Cmos assumes no liability for customers' product design or applications.
Cmos reserver the right to improve product design ,functions and reliability wihtout notice.