CMSA025N03

N-Channel Enhancement Mode Field Effect Transistor

General Description

The CMSA025N03 uses advanced technology to provide excellent RDS (ON) . This device is suitable to be used as the low side FET general purpose.

Product Summary

BVDSS	RDSON	ID
30V	2.5mΩ	100A

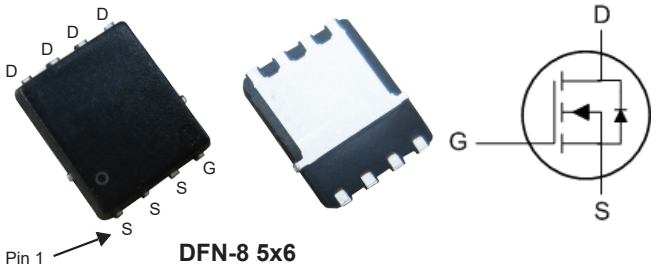
Applications

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

Features

- RDS(ON)<2.5mΩ @ VGS=10V
- 100% avalanche tested
- RoHS and Halogen-Free Compliant
- High Current Capability

DFN-8 5x6 Pin Configuration



DFN-8 5x6

Type	Package	Marking
CMSA025N03	DFN-8 5*6	CMSA025N03

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	40	V
V_{GS}	Gate-Source Voltage	±16	V
I_D@T_C=25℃	Continuous Drain Current	100	A
I_D@T_C=100℃	Continuous Drain Current	80	A
I_{DM}	Pulsed Drain Current	400	A
EAS	Single Pulse Avalanche Energy	390	mJ
P_D@T_C=25℃	Total Power Dissipation	85	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	---	50	℃/W
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	1.5	℃/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	V_{GS}=10V , I_D=50A	---	---	2.5	mΩ
		V_{GS}=4.5V , I_D=40A	---	---	3.7	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250μA	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=24V , V_{GS}=0V	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS} =±16V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=10V , I_D=20A	---	20	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	3.2	---	Ω
Q_g	Total Gate Charge	V_{DD}=15V , I_D=30A V_{GS}=4.5V	---	28	---	nC
Q_{gs}	Gate-Source Charge		---	13	---	
Q_{gd}	Gate-Drain Charge		---	7	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=15V , V_{GS}=10V , I_D=30A R_{GEN} =1.6Ω	---	11	---	ns
T_r	Rise Time		---	6	---	
$T_{d(off)}$	Turn-Off Delay Time		---	37	---	
T_f	Fall Time		---	7	---	
C_{iss}	Input Capacitance	V_{DS}=15V , V_{GS}=0V , f=1MHz	---	2300	---	pF
C_{oss}	Output Capacitance		---	750	---	
C_{rss}	Reverse Transfer Capacitance		---	34	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Diode continuous forward current	V_G=V_D=0V , Force Current	---	---	100	A
$I_{S,pulse}$	Diode pulse current		---	---	400	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_F=28A , Tj=25℃	---	---	1.2	V

Note :

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.