CMSA015N03

N-Channel Enhancement Mode Field Effect Transistor

General Description

The CMSA015N03 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	1.4mΩ	170A

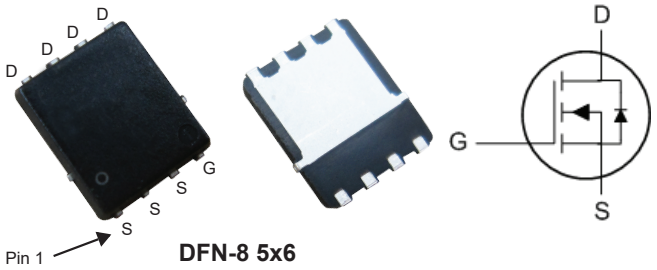
Applications

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

Features

- RDS(ON)<1.4mΩ @ VGS=10V
- 100% avalanche tested
- RoHS and Halogen-Free Compliant
- High Current Capability

DFN-8 5x6 Pin Configuration



DFN-8 5x6

Type	Package	Marking
CMSA015N03	DFN-8 5*6	CMSA015N03

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±16	V
I_D@T_C=25℃	Continuous Drain Current	170	A
I_D@T_C=100℃	Continuous Drain Current	136	A
I_{DM}	Pulsed Drain Current	450	A
EAS	Single Pulse Avalanche Energy	840	mJ
P_D@T_C=25℃	Total Power Dissipation	95	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	---	62	℃/W
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	1.31	℃/W

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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	---	---	1.4	mΩ
		V_{GS}=4.5V , I_D=40A	---	---	2.1	
$V_{GS(th)}$	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	---	40	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	3	---	Ω
Q_g	Total Gate Charge	V_{DS}=15V , I_D=85A V_{GS}=10 V	---	47	---	nC
Q_{gs}	Gate-Source Charge		---	6	---	
Q_{gd}	Gate-Drain Charge		---	10	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=15V , V_{GS}=10V , I_D=85A R_{GEN} =1.6Ω	---	6	---	ns
T_r	Rise Time		---	8	---	
$T_{d(off)}$	Turn-Off Delay Time		---	34	---	
T_f	Fall Time		---	4	---	
C_{iss}	Input Capacitance	V_{DS}=15V , V_{GS}=0V , f=1MHz	---	5000	---	pF
C_{oss}	Output Capacitance		---	1400	---	
C_{rss}	Reverse Transfer Capacitance		---	100	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Diode continuous forward current	V_G=V_D=0V , Force Current	---	---	170	A
$I_{S,pulse}$	Diode pulse current		---	---	450	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_F=28A , Tj=25℃	---	---	1	V