

General Description

The CMSA150N03 uses advanced trench technology to provide excellent RDS (ON), low gate charge and minimize the loss of power conversion applications.

Features

- RDS(ON)<2.7mΩ @ VGS=10V
- 100% avalanche tested
- RoHS and Halogen-Free Compliant
- High Current Capability

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	150	A
I _D @T _C =100°C	Continuous Drain Current	110	A
I _{DM}	Pulsed Drain Current	450	A
EAS	Single Pulse Avalanche Energy	140	mJ
P _D @T _C =25°C	Total Power Dissipation	110	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-to-Ambient	---	55	°C/W
R _{θJC}	Thermal Resistance Junction -Case	---	1.5	°C/W

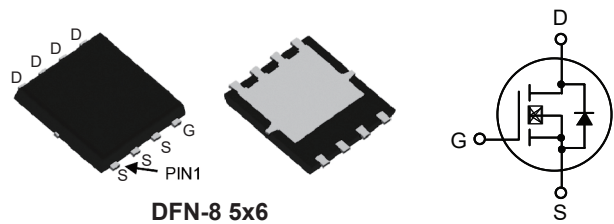
Product Summary

BVDSS	RDSON	ID
30V	2.7mΩ	150A

Applications

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

DFN-8 5x6 Pin Configuration



Type	Package	Marking
CMSA150N03	DFN-8 5*6	CMSA150N03

N-Channel Enhancement Mode Field Effect Transistor

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	$V_{GS}=10V, I_D=20A$	---	2	2.7	m Ω
		$V_{GS}=4.5V, I_D=15A$	---	2.5	3.5	
$V_{GS(th)}$	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	μA
		$V_{DS}=30V, V_{GS}=0V, T_C=55^{\circ}\text{C}$	---	---	5	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V, I_D=15A$	---	15	---	S
R_g	Gate Resistance	$V_{DS}=0V, V_{GS}=0V, f=1\text{MHz}$	---	9	---	Ω
Q_g	Total Gate Charge	$V_{DS}=15V, I_D=20A$ $V_{GS}=10V$	---	50	---	nC
Q_{gs}	Gate-Source Charge		---	8	---	
Q_{gd}	Gate-Drain Charge		---	10.5	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=15V, V_{GS}=10V, R_{GEN}=3\Omega$ $R_L=0.75\Omega$	---	7.5	---	ns
T_r	Rise Time		---	5	---	
$T_{d(off)}$	Turn-Off Delay Time		---	34	---	
T_f	Fall Time		---	10	---	
C_{iss}	Input Capacitance	$V_{DS}=15V, V_{GS}=0V, f=1\text{MHz}$	---	7000	---	pF
C_{oss}	Output Capacitance		---	800	---	
C_{rss}	Reverse Transfer Capacitance		---	450	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Diode continuous forward current	$V_G=V_D=0V, \text{Force Current}$	---	---	150	A
$I_{S,pulse}$	Diode pulse current		---	---	450	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_F=15A, T_J=25^{\circ}\text{C}$	---	---	1	V

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