

General Description

The CMSA020N45 uses advanced technology to provide excellent RDS (ON) . This device is suitable to be used as the low side FET general purpose.

Features

- RDS(ON)<1.7mΩ @ VGS=10V
- 100% avalanche tested
- RoHS and Halogen-Free Compliant
- High Current Capability

Absolute Maximum Ratings

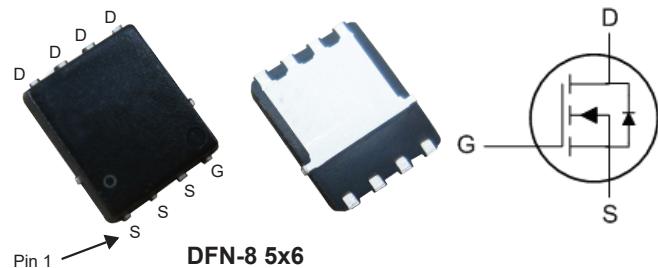
Product Summary

BVDSS	RDS(ON)	ID
45V	1.7mΩ	100A

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
CMSA020N45	DFN-8 5*6	CMSA020N45

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	45	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D @ T_c = 25^\circ C$	Continuous Drain Current	100	A
$I_D @ T_c = 100^\circ C$	Continuous Drain Current	80	A
I_{DM}	Pulsed Drain Current	300	A
EAS	Single Pulse Avalanche Energy	420	mJ
$P_D @ T_c = 25^\circ C$	Total Power Dissipation	75	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
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	---	45	°C/W
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	2.0	°C/W

Electrical Characteristics (T_J=25°C , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =250μA	45	---	---	V
R _{DSON}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =28A	---	---	1.7	mΩ
		V _{GS} =4.5V , I _D =28A	---	---	2.0	
V _{GTH}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250μA	1	---	2.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =32V , V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =10V , I _D =20A	---	30	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	2.3	---	Ω
Q _g	Total Gate Charge	V _{DS} =32V , I _D =20A	---	60	---	nC
Q _{gs}	Gate-Source Charge		---	14	---	
Q _{gd}	Gate-Drain Charge		---	9	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =20V , V _{GS} =10V , I _D =20A	---	15	---	ns
T _r	Rise Time		---	46	---	
T _{d(off)}	Turn-Off Delay Time		---	36	---	
T _f	Fall Time		---	8	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	6800	---	pF
C _{oss}	Output Capacitance		---	1000	---	
C _{rss}	Reverse Transfer Capacitance		---	1100	---	

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		---	---	300	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _F =28A , T _J =25°C	---	---	1	V

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Cmos assumes no liability for customers' product design or applications.

Cmos reserves the right to improve product design ,functions and reliability without notice.