

General Description

The CMSA018DN10 uses advanced SGT technology to provide excellent RDS(ON) and low gate charge .

This device is suitable for use as a Battery protection or in other Switching application.

Features

- Dual N-Channel MOSFET
- 100% avalanche tested
- Small Footprint (5x6mm) for Compact Design
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^{\circ}C$	Continuous Drain Current	40	A
$I_D@T_C=85^{\circ}C$	Continuous Drain Current	25	A
I_{DM}	Pulsed Drain Current	120	A
EAS	Single Pulse Avalanche Energy ¹	15	mJ
$P_D@T_C=25^{\circ}C$	Total Power Dissipation	60	W
T_{STG}	Storage Temperature Range	-55 to 150	$^{\circ}C$
T_J	Operating Junction Temperature Range	-55 to 150	$^{\circ}C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient($t \leq 10$ s) ^{2,3}	---	35	$^{\circ}C/W$
$R_{\theta JC}$	Thermal Resistance Junction -Case (Steady State)	---	2.7	$^{\circ}C/W$

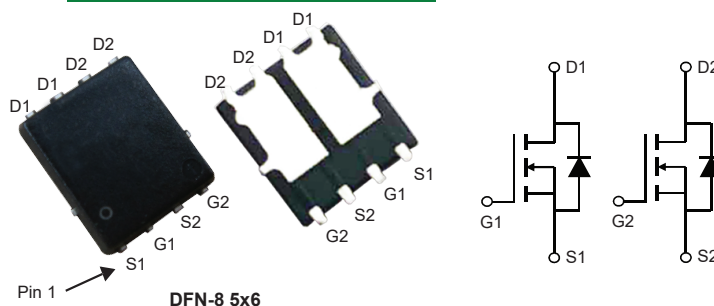
Product Summary

BVDSS	RDSON	ID
100V	19m Ω	40A

Applications

- Primary Side Switching
- Synchronous Rectification
- DC/AC Inverters

DFN-8 5x6 Pin Configuration



Type	Package	Marking
CMSA018DN10	DFN-8 5*6	CMSA018DN10

Electrical Characteristics ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=15A$	---	17.5	19	m Ω
		$V_{GS}=4.5V$, $I_D=10A$	---	23	28	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=100V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V$, $I_D=10A$	---	18	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1MHz$	---	3	---	Ω
Q_g	Total Gate Charge	$V_{DD}=50V$, $I_D=10A$ $V_{GS}=6V$	---	13	---	nC
Q_{gs}	Gate-Source Charge		---	3.5	---	
Q_{gd}	Gate-Drain Charge		---	5.5	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=50V$, $V_{GEN}=10V$, $R_G=1\Omega$ $R_L=5\Omega$, $I_D=10A$	---	8	---	ns
T_r	Rise Time		---	12	---	
$T_{d(off)}$	Turn-Off Delay Time		---	20	---	
T_f	Fall Time		---	7	---	
C_{iss}	Input Capacitance	$V_{DS}=50V$, $V_{GS}=0V$, $f=1MHz$	---	1200	---	pF
C_{oss}	Output Capacitance		---	350	---	
C_{rss}	Reverse Transfer Capacitance		---	40	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Diode continuous forward current	$V_G=V_D=0V$, Force Current	---	---	40	A
$I_{S,pulse}$	Diode pulse current		---	---	120	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=10A$, $T_J=25^{\circ}\text{C}$	---	0.87	1.2	V

Notes:

1. The EAS data shows Max. rating . The test condition is $V_{DD}=30V$, $V_{GS}=10V$, $L=0.3mH$, $I_{AS}=10A$

2. Surface mounted on 1" x 1" FR4 board.

3. Maximum under steady state conditions is 85°C/W .

This product has been designed and qualified for the consumer market.

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

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

Package Dimensions

DFN-8 5x6

