

CMSC2922A

100V, 77mΩ typ., 10A N-Channel MOSFET

General Description

The CMSC2922A uses advanced SGT technology to provide excellent $R_{DS(on)}$.

This device is ideal for high-frequency switching and synchronous rectification.

Features

- Low On-Resistance
- Fast Switching
- Low Gate Charge
- RoHS Compliant

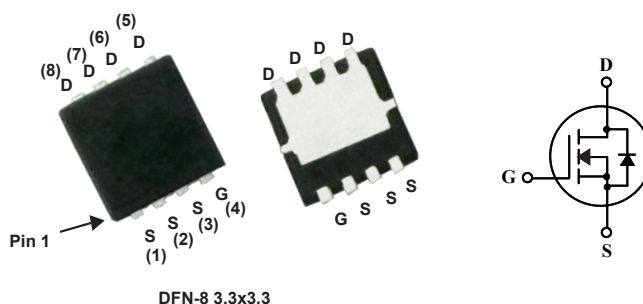
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
100V	86mΩ	10A

Applications

- DC - DC Converter

DFN-8 3.3x3.3 Pin Configuration



Type	Package	Marking
CMSC2922A	DFN-8 3.3x3.3	2922A

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	10	A
$I_D@T_C=100^{\circ}C$	Continuous Drain Current	6	A
I_{DM}	Pulsed Drain Current	30	A
EAS	Single Pulse Avalanche Energy ¹	2.5	mJ
$P_D@T_C=25^{\circ}C$	Total Power Dissipation	20	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-ambient	---	53	°C/W
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	6.25	°C/W

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=5A$	---	77	86	mΩ
		$V_{GS}=4.5V$, $I_D=3A$	---	95	120	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=80V$, $V_{GS}=0V$, $T_J=25^{\circ}\text{C}$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	±100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V$, $I_D=10A$	---	17	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	3.5	---	Ω
Q_g	Total Gate Charge	$V_{DS}=50V$, $V_{GS}=10V$, $I_D=3.3A$	---	4	---	nC
Q_{gs}	Gate-Source Charge		---	0.8	---	
Q_{gd}	Gate-Drain Charge		---	0.7	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=50V$, $V_{GS}=10V$, $R_{GEN}=6\Omega$ $I_D=3.3A$	---	4.5	---	ns
T_r	Rise Time		---	1.3	---	
$T_{d(off)}$	Turn-Off Delay Time		---	10	---	
T_f	Fall Time		---	1.4	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	220	---	pF
C_{oss}	Output Capacitance		---	100	---	
C_{rss}	Reverse Transfer Capacitance		---	5	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	10	A
I_{SM}	Pulsed Source Current		---	---	30	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_F=10A$, $T_J=25^{\circ}\text{C}$	---	1.06	1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is $V_{DD}=50V$, $V_{GS}=10V$, $L=0.3\text{mH}$, $I_{AS}=4.1A$.

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

Typical Characteristics

