

General Description

The CMSC8447A uses advanced trench technology and design to provide excellent $R_{DS(ON)}$. This device is well suited for Power Management and load switching applications common in Notebook Computers and Portable Battery Packs.

Features

- N-Channel MOSFET
- Low ON-resistance
- Surface Mount Package
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	40	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	30	A
$I_D@T_C=100^\circ C$		20	A
I_{DM}	Pulsed Drain Current	120	A
EAS	Single Pulse Avalanche Energy ¹	136	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	30	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	---	60	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	4.17	°C/W

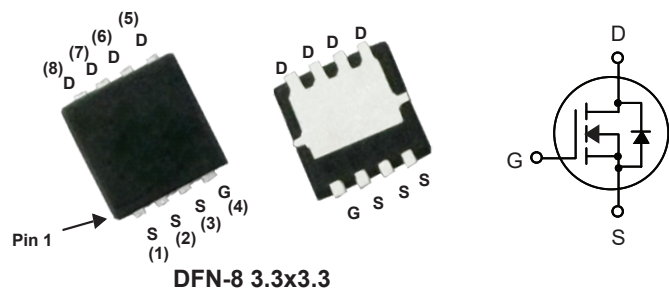
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
40V	17mΩ	30A

Applications

- High side in DC - DC Buck Converters
- Notebook battery power management
- Load switch in Notebook

DFN-8 3.3x3.3 Pin Configuration



Type	Package	Marking
CMSC8447A	DFN-8 3.3x3.3	8447A

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	40	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=20A$	---	14	17	mΩ
		$V_{GS}=4.5V, I_D=15A$	---	17	20	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\mu A$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=32V, V_{GS}=0V$	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	$V_{GS} = \pm 20V$	---	---	±100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V, I_D=20A$	---	20	---	S
Q_g	Total Gate Charge	$V_{DD}=20V, I_D=20A$ $V_{GS}=4.5V$	---	13	---	nC
Q_{gs}	Gate-Source Charge		---	4	---	
Q_{gd}	Gate-Drain Charge		---	6	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=20V, V_{GS}=10V, I_D=20A$ $R_G=1.6\Omega$	---	3.5	---	ns
T_r	Rise Time		---	3	---	
$T_{d(off)}$	Turn-Off Delay Time		---	16	---	
T_f	Fall Time		---	3	---	
C_{iss}	Input Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1MHz$	---	1350	---	pF
C_{oss}	Output Capacitance		---	140	---	
C_{rss}	Reverse Transfer Capacitance		---	80	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Diode continuous forward current	$V_G=V_D=0V$, Force Current	---	---	30	A
$I_{S,pulse}$	Diode pulse current		---	---	120	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_F=20A, T_J=25^{\circ}\text{C}$	---	0.86	1.2	V

Note :

1.The EAS data shows Max. rating .The test condition is $V_{DS}=20V, V_{GS}=10V, L=1mH, I_{AS}=16.5A$.

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.

Typical Characteristics
