CMSC4435

P-Channel Enhancement Mode MOSFET

General Description

The CMSC4435 uses advanced process technology and design to provide excellent RDS(ON). This device is well suited for Power Management and load switching applications common in Notebook Computers and Portable Battery Packs.

Product Summary

BVDSS	RDSON	ID
-30V	14mΩ	-15A

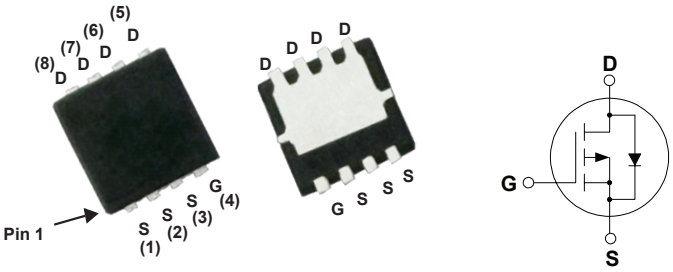
Applications

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

Features

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

DFN-8 3.3x3.3 Pin Configuration



DFN-8 3.3x3.3

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Absolute Maximum Ratings (T_A=25 ℃ Unless Otherwise Noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current	-15	A
I_D@T_C=100℃	Continuous Drain Current	-10	A
I_{DM}	Pulsed Drain Current	-60	A
EAS	Single Pulse Avalanche Energy [1]	78	mJ
P_D@T_C=25℃	Total Power Dissipation	30	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	53	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	4.16	℃/W

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Electrical Characteristics (T_J=25℃ , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=-250μA	-30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V , I_D=-8A	---	11	14	mΩ
		V_{GS}=-4.5V , I_D=-5A	---	14	20	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D = -250μA	-1	---	-2	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-24V, V_{GS}=0V	---	---	-1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS} = ±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=-10V, I_D=-10A	---	16	---	S
Q_g	Total Gate Charge	V_{DS}=-15V , V_{GS}=-4.5V , I_D=-8.5A	---	18	---	nC
Q_{gs}	Gate-Source Charge		---	3	---	
Q_{gd}	Gate-Drain Charge		---	9	---	
$T_{d(on)}$	Turn-On Delay Time[3]	V_{DS}=-15V, V_{GS}=-10V , R_{GEN}=6Ω I_D=-8.5A	---	15	---	ns
T_r	Rise Time		---	10	---	
$T_{d(off)}$	Turn-Off Delay Time		---	40	---	
T_f	Fall Time		---	25	---	
C_{iss}	Input Capacitance	V_{DS}=-15V , V_{GS}=0V , f=1MHz	---	2500	---	pF
C_{oss}	Output Capacitance		---	380	---	
C_{rss}	Reverse Transfer Capacitance		---	300	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	-15	A
I_{SM}	Pulsed Source Current		---	---	-60	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=-10A , T_J=25℃	---	---	-1.5	V

Notes:

1.The EAS data shows Max. rating . The test condition is V_{DD}=-30V , V_{GS}=-10V , L=0.7mH , I_{AS}=-15A.

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