CMSC4435B

P-Channel Enhancement Mode MOSFET

General Description

Advanced Power MOSFETs from Cmos provide the designer with the best combination of fast switching and low on-resistance.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	25mΩ	-15A

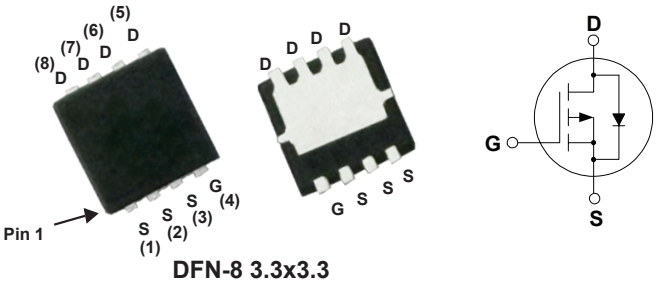
Applications

- 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

Type	Package	Marking
CMSC4435B	DFN-8 3.3*3.3	4435B

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current	-15	A
I_{DM}	Pulsed Drain Current	-60	A
EAS	Single Pulse Avalanche Energy[1]	100	mJ
P_D@T_C=25℃	Total Power Dissipation	20	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-to-Ambient	---	80	℃/W

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	---	---	25	mΩ
		V_{GS}=-4.5V , I_D=-5A	---	---	30	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D = -250μA	-1	---	-3	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}=-5V , I_D=-9A	---	18	---	S
Q_g	Total Gate Charge	V_{DS}=-15V , V_{GS}=-10V , I_D=-10A	---	20	---	nC
Q_{gs}	Gate-Source Charge		---	4	---	
Q_{gd}	Gate-Drain Charge		---	5	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=-15V, V_{GS}=-10V , R_{GEN}=3Ω R_L=1.5Ω	---	12	---	ns
T_r	Rise Time		---	6	---	
$T_{d(off)}$	Turn-Off Delay Time		---	25	---	
T_f	Fall Time		---	10	---	
C_{iss}	Input Capacitance	V_{DS}=-15V , V_{GS}=0V , f=1MHz	---	2200	---	pF
C_{oss}	Output Capacitance		---	180	---	
C_{rss}	Reverse Transfer Capacitance		---	130	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_{SD}=-10A	---	---	-1.2	V

Notes:

1.The EAS data shows Max. rating . The test condition is V_{DD}=-25V,V_{GS}=-10V,L=2mH,I_{AS}=-10A