

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.

Features

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

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	-6	A
I_{DM}	Pulsed Drain Current	-18	A
EAS	Single Pulse Avalanche Energy ¹	54	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	20	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	---	80	$^\circ\text{C}/\text{W}$

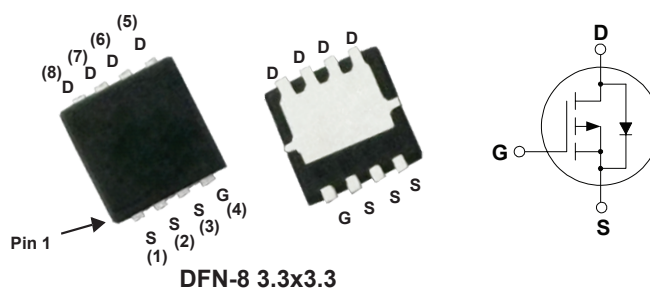
Product Summary

BVDSS	RDSON	ID
-30V	45m Ω	-6A

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
CMSC4435L	DFN-8 3.3*3.3	4435L

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=-250\mu A$	-30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V$, $I_D=-6A$	---	---	45	$m\Omega$
		$V_{GS}=-4.5V$, $I_D=-5A$	---	---	55	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D = -250\mu A$	-1	---	-2	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-24V$, $V_{GS}=0V$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS} = \pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=-5V$, $I_D=-6A$	---	16	---	S
Q_g	Total Gate Charge	$V_{DS}=-15V$, $V_{GS}=-10V$, $I_D=-6A$	---	25	---	nC
Q_{gs}	Gate-Source Charge		---	4	---	
Q_{gd}	Gate-Drain Charge		---	6	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=-15V$, $V_{GS}=-10V$, $R_G=3\Omega$ $R_L=1.5\Omega$	---	15	---	ns
T_r	Rise Time		---	10	---	
$T_{d(off)}$	Turn-Off Delay Time		---	25	---	
T_f	Fall Time		---	12	---	
C_{iss}	Input Capacitance	$V_{DS}=-15V$, $V_{GS}=0V$, $f=1MHz$	---	1800	---	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	$V_{GS}=0V$, $I_{SD}=-6A$	---	---	-1.2	V

Notes:

1.The EAS data shows Max. rating . The test condition is $V_{DD}=-25V$, $V_{GS}=-10V$, $L=3mH$, $I_{AS}=-6A$

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

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