

General Description

The CMSC80P02B combines advanced trench MOSFET technology with a low resistance package to provide extremely low RDS(ON). This device is ideal for load switch and battery protection applications.

Features

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

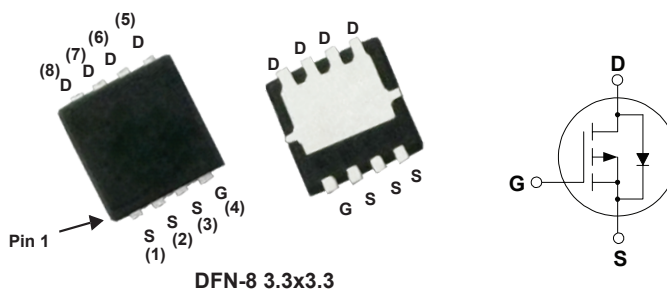
Product Summary

BVDSS	RDSON	ID
-20V	7mΩ	-80A

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
CMSC80P02B	DFN-8 3.3*3.3	80P02B

Absolute Maximum Ratings (TA=25 °C Unless Otherwise Noted)

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	-20	V
V _{GS}	Gate-Source Voltage	±12	V
I _D	Continuous Drain Current	-80	A
I _{DM}	Pulsed Drain Current	-240	A
EAS	Single Pulse Avalanche Energy ¹	196	mJ
P _{D@T_C=25°C}	Total Power Dissipation	65	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 _{θJA}	Thermal Resistance, Junction-to-Ambient	---	52	°C/W

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=-250\mu A$	-20	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-4.5V$, $I_D=-20A$	---	6.1	7	m Ω
		$V_{GS}=-2.5V$, $I_D=-20A$	---	7.8	9	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D = -250\mu A$	-0.4	---	-1.5	V
g_{fs}	Forward Transconductance	$V_{DS}=-5V$, $I_D=-20A$	---	50	---	S
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-16V$, $V_{GS}=0V$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS} = \pm 12V$, $V_{DS}=0V$	---	---	± 100	nA
Q_g	Total Gate Charge	$V_{DS}=-10V$, $I_D=-10A$ $V_{GS}=-4.5V$	---	54	---	nC
Q_{gs}	Gate-Source Charge		---	11	---	
Q_{gd}	Gate-Drain Charge		---	14	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=-10V$, $V_{GS}=-4.5V$ $I_D=-10A$, $R_G=6\Omega$	---	15	---	ns
T_r	Rise Time		---	75	---	
$T_{d(off)}$	Turn-Off Delay Time		---	192	---	
T_f	Fall Time		---	185	---	
C_{iss}	Input Capacitance	$V_{DS}=-10V$, $V_{GS}=0V$, $f=1MHz$	---	3500	---	pF
C_{oss}	Output Capacitance		---	650	---	
C_{rss}	Reverse Transfer Capacitance		---	500	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_{SD}=-20A$	---	---	-1.2	V

Notes:

1.The EAS data shows Max. rating .The test condition is $V_{DS}=-20V$, $V_{GS}=-10V$, $L=0.5mH$, $I_{AS}=-28A$.

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

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