

General Description

The 7P20B uses advanced trench technology and design to provide excellent RDS(ON) with low gate charge. It can be used in a wide variety of applications.

Features

- P-Channel
- Low ON-resistance.
- Fast Switching
- 100% avalanche tested

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-200	V
V_{GS}	Gate-Source Voltage	± 30	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	-7	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	-4.2	A
I_{DM}	Pulsed Drain Current	-21	A
EAS	Single Pulse Avalanche Energy	115	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	55	W
T_J, T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_L	Operating Junction Temperature Range	300	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	50	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	2.27	$^\circ\text{C/W}$

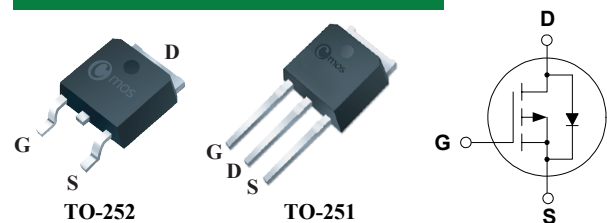
Product Summary

BVDSS	RDSON	ID
-200V	1.1 Ω	-7A

Applications

- Power Switch
- DC / DC converter

TO-252/251 Pin Configuration



Type	Package	Marking
CMD7P20B	TO-252	CMD7P20B
CMU7P20B	TO-251	CMU7P20B

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=-250\mu A$	-200	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V$, $I_D=-3.5A$	---	---	1.1	Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=-250\mu A$	-3	---	-5	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-200V$, $V_{GS}=0V$	---	---	-1	μA
		$V_{DS}=-160V$, $T_C=125^\circ\text{C}$	---	---	-10	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=-10V$, $I_D=-3.5A$	---	4.5	---	S
Q_g	Total Gate Charge	$I_D=-7.3A$	---	18	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=-160V$	---	4.5	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=-10V$	---	9.5	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=-100V$	---	13	---	ns
T_r	Rise Time	$I_D=-7.3A$	---	140	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=25\Omega$	---	30	---	
T_f	Fall Time		---	50	---	
C_{iss}	Input Capacitance	$V_{DS}=-25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	580	---	pF
C_{oss}	Output Capacitance		---	120	---	
C_{rss}	Reverse Transfer Capacitance		---	30	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	-7	A
I_{SM}	Pulsed Source Current		---	---	-21	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=-5A$, $T_J=25^\circ\text{C}$	---	---	-1.2	V

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.