

General Description

The CMP100P03B is a P-channel Power MOSFET. They use advanced trench technology to provide excellent $R_{DS(ON)}$. The device is therefore suitable in advanced high-efficiency switching applications.

Features

- Fast switching
- Lower On-resistance
- 100% EAS Guaranteed
- Simple Drive Requirement

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_c=25^\circ C$	Continuous Drain Current	-80	A
I_{DM}	Pulsed Drain Current	-240	A
EAS	Single Pulse Avalanche Energy ¹	225	mJ
$P_D@T_c=25^\circ C$	Total Power Dissipation	65	W
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 175	$^\circ C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Junction-to-Ambient	---	62	$^\circ C/W$
$R_{\theta JC}$	Junction-to-Case	---	1.1	$^\circ C/W$

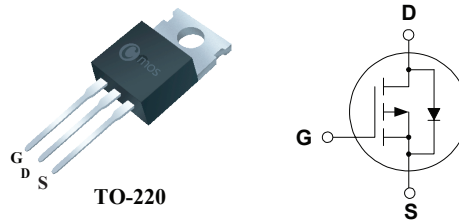
Product Summary

BVDSS	RDSON	ID
-30V	14m Ω	-80A

Applications

- DC-DC Converters
- Motor control
- LED controller

TO-220 Pin Configuration



Type	Package	Marking
CMP100P03B	TO-220	CMP100P03B

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	$V_{GS}=-10V, I_D=-30A$	---	11	14	m Ω
		$V_{GS}=-4.5V, I_D=-20A$	---	15	20	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D=-250\mu A$	-1	---	-3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-30V, V_{GS}=0V, T_J=25^\circ\text{C}$	---	---	-1	μA
		$V_{DS}=-30V, V_{GS}=0V, T_J=125^\circ\text{C}$	---	---	-50	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=-20V, I_D=-11A$	---	13	---	S
Q_g	Total Gate Charge	$V_{DS}=-24V, I_D=-50A$ $V_{GS}=0$ to $-10V$	---	48	---	nC
Q_{gs}	Gate-Source Charge		---	7	---	
Q_{gd}	Gate-Drain Charge		---	12	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=-15V, V_{GS}=-10V, R_G=3.5\Omega$ $I_D=-50A$	---	15	---	ns
T_r	Rise Time		---	10	---	
$T_{d(off)}$	Turn-Off Delay Time		---	50	---	
T_f	Fall Time		---	25	---	
C_{iss}	Input Capacitance	$V_{DS}=-25V, V_{GS}=0V, f=1\text{MHz}$	---	4000	---	pF
C_{oss}	Output Capacitance		---	800	---	
C_{rss}	Reverse Transfer Capacitance		---	500	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	-80	A
I_{SM}	Pulsed Source Current		---	---	-240	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_F=-10A$	---	---	-1.5	V

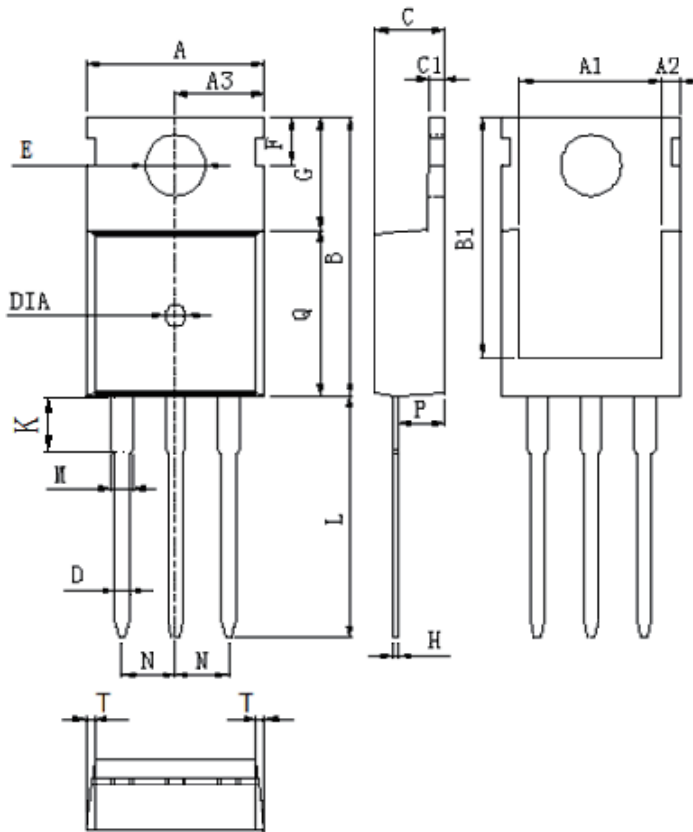
Notes

1. The test condition is $V_{DD}=-25V, V_{GS}=-10V, L=0.5\text{mH}, I_{AS}=-30A$

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.

Package Dimensions

TO-220 Package Outline Drawing



DIM	MILLIMETERS
A	10.0 ± 0.3
A1	8.64 ± 0.2
A2	1.15 ± 0.1
A3	5.0 ± 0.2
B	15.8 ± 0.4
B1	13.2 ± 0.3
C	4.56 ± 0.1
C1	1.3 ± 0.2
D	0.8 ± 0.2
E	3.6 ± 0.2
F	2.95 ± 0.3
G	6.5 ± 0.3
H	0.5 ± 0.1
K	3.1 ± 0.2
L	13.2 ± 0.4
M	1.25 ± 0.1
N	2.54 ± 0.1
P	2.4 ± 0.3
Q	9.0 ± 0.3
T	W: 0.35
DIA	⊙1.5 (deep 0.2)

Unit : mm