CMP150P03/CMB150P03

P-Channel Enhancement Mode MOSFET

General Description

The 150P03 uses advanced trench technology and design to provide excellent RDS(ON). It can be used in a wide variety of applications.

Product Summary

BVDSS	RDSON	ID
-30V	6mΩ	-120A

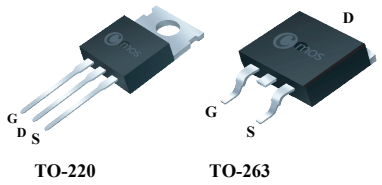
Applications

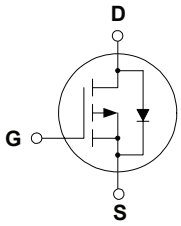
- Inverters
- Motor drive
- DC / DC converter

Features

- Fast switching
- 100% avalanche tested
- Lower On-resistance
- RoHS Compliant

TO-220/TO-263 Pin Configuration





Type	Package	Marking
CMP150P03	TO-220	CMP150P03
CMB150P03	TO-263	CMB150P03

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℃	Continuous Drain Current	-120	A
I_D@T_C=100℃	Continuous Drain Current	-96	A
I_{DM}	Pulsed Drain Current	-360	A
EAS	Single Pulse Avalanche Energy [1]	450	mJ
P_D@T_C=25℃	Total Power Dissipation	130	W
T_{STG}	Storage Temperature Range	-55 to 175	℃
T_J	Operating Junction Temperature Range	-55 to 175	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.5	℃/W

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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=-250uA	-30	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V , I_D=-20A	---	5	6	mΩ
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-4.5V , I_D=-20A	---	6	7.5	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250uA	-1	---	-2.5	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}=-10 V , I_D=-20A	---	35	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	20	---	Ω
Q_g	Total Gate Charge	I_D=-90A V_{DS} =-24V V_{GS} =-10V	---	100	---	nC
Q_{gs}	Gate-Source Charge		---	43	---	
Q_{gd}	Gate-Drain Charge		---	11	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD} = -15V I_{DS} =-90A R_{GEN} =3.5Ω V_{GEN} =-10V	---	36	---	ns
T_r	Rise Time		---	11	---	
$T_{d(off)}$	Turn-Off Delay Time		---	71	---	
T_f	Fall Time		---	21	---	
C_{iss}	Input Capacitance	V_{DS}=-25V ,V_{GS}=0V , f=1MHz	---	8000	---	pF
C_{oss}	Output Capacitance		---	3000	---	
C_{rss}	Reverse Transfer Capacitance		---	1200	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	-120	A
I_{SM}	Pulsed Source Current		---	---	-360	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=-20A ,T_J=25℃	---	---	-1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=-20V , V_{GS}=-10V , L=0.5mH , I_{AS}=-42.5A