CMD80P04L/CMU80P04L

P-Channel 40-V (D-S) MOSFET

General Description

These P-Channel enhancement mode power field effect transistors use advanced trench technology and design to provide excellent RDS(ON) . This device is suitable for use as a load switch or in PWM applications.

Product Summary

BVDSS	RDSON	ID
-40V	9mΩ	-80A

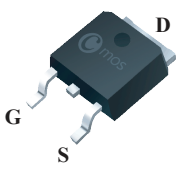
Applications

- DC-DC Converters
- Load Switches
- BLDC Motor driver

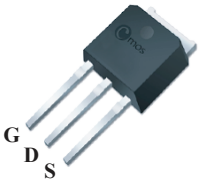
Features

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

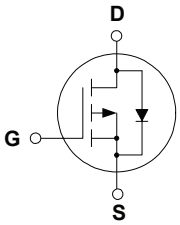
TO-252 / 251 Pin Configuration



TO-252



TO-251



Type	Package	Marking
CMD80P04L	TO-252	CMD80P04L
CMU80P04L	TO-251	CMU80P04L

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-40	V
V_{GS}	Gate-Sou ce Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current	-80	A
I_{DM}	Pulsed Drain Current	-240	A
EAS	Single Pulse Avalanche Energy	440	mJ
P_D@T_C=25℃	Total Power Dissipation	75	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
$R_{\theta JA}$	Junction-to-Ambient	---	62	℃/W
$R_{\theta JC}$	Junction-to-Case (Drain)	---	2.0	℃/W

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	-40	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V , I_D=-28A	---	---	9.0	mΩ
		V_{GS}=-4.5V, I_D=-25A	---	---	14.0	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250uA	-1.0	---	-2.5	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-32V, V_{GS}=0V , T_J=25℃	---	---	-1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS} = ±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=-5 V , I_D=-20A	---	47	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	5.0	---	Ω
Q_g	Total Gate Charge	V_{DD}=-32V , I_D=-70A V_{GS}=-10V	---	55	---	nC
Q_{gs}	Gate-Source Charge		---	21	---	
Q_{gd}	Gate-Drain Charge		---	11	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=-20V, V_{GS}=-10V , R_G =3.5Ω I_D=-73A	---	20	---	ns
T_r	Rise Time		---	13	---	
$T_{d(off)}$	Turn-Off Delay Time		---	25	---	
T_f	Fall Time		---	30	---	
C_{iss}	Input Capacitance	V_{DS}=-25V, V_{GS}=0V , f=1MHz	---	6500	---	pF
C_{oss}	Output Capacitance		---	1400	---	
C_{rss}	Reverse Transfer Capacitance		---	40	---	

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=-20A	---	---	-1.2	V

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