

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.

Features

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

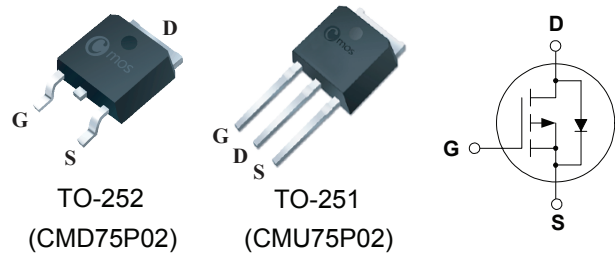
Product Summary

BVDSS	RDSON	ID
-20V	6.5mΩ	-75A

Applications

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

TO-252 / 251 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	±12	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	-75	A
I_{DM}	Pulsed Drain Current	-225	A
EAS	Single Pulse Avalanche Energy	400	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	60	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
$R_{\theta JA}$	Junction-to-Ambient	---	62.5	°C/W
$R_{\theta JC}$	Junction-to-Case (Drain)	---	2.1	°C/W

Electrical Characteristics (T_J=25°C , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =-250uA	-20	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =-4.5V , I _D =-20A	---	---	6.5	mΩ
		V _{GS} =-2.5V , I _D =-8A	---	---	9.5	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =-250uA	-0.5	---	-1.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-16V , V _{GS} =0V , T _J =25°C	---	---	-1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±12V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =-5V , I _D =-10A	---	23	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	11	---	Ω
Q _g	Total Gate Charge	V _{DS} =-10V , I _D =-24A V _{GS} =-4.5V	---	50	---	nC
Q _{gs}	Gate-Source Charge		---	5	---	
Q _{gd}	Gate-Drain Charge		---	13	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =-10V , V _{GS} =-4.5V , R _{GS} =6Ω I _D =-1A	---	25	---	ns
T _r	Rise Time		---	55	---	
T _{d(off)}	Turn-Off Delay Time		---	150	---	
T _f	Fall Time		---	65	---	
C _{iss}	Input Capacitance	V _{DS} =-10V , V _{GS} =0V , f=1MHz	---	5300	---	pF
C _{oss}	Output Capacitance		---	600	---	
C _{rss}	Reverse Transfer Capacitance		---	510	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	-75	A
I _{SM}	Pulsed Source Current		---	---	-225	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _F =-20A	---	---	-1.2	V

This product has been designed and qualified for the counsumer market.
 Cmos assumes no liability for customers' product design or applications.
 Cmos reserver the right to improve product design ,functions and reliability wihout notice.