

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

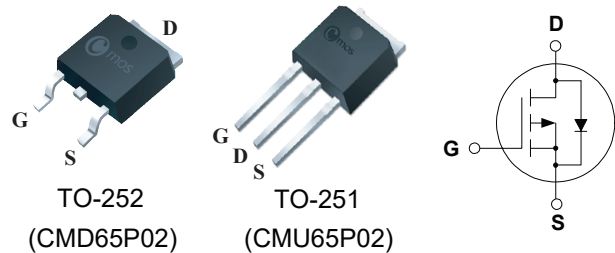
Product Summary

BVDSS	RDSON	ID
-20V	10.5mΩ	-65A

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	-65	A
I_{DM}	Pulsed Drain Current	-260	A
EAS	Single Pulse Avalanche Energy ¹	112	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 =-30A	---	---	10.5	mΩ
		V _{GS} =-2.5V , I _D =-20A	---	---	14.5	
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} =-10V , I _D =-10A	---	22	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	12.5	---	Ω
Q _g	Total Gate Charge	V _{DD} =-15V, I _D =-10A V _{GS} =-4.5V	---	115	---	nC
Q _{gs}	Gate-Source Charge		---	7	---	
Q _{gd}	Gate-Drain Charge		---	20	---	
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		---	60	---	
T _{d(off)}	Turn-Off Delay Time		---	155	---	
T _f	Fall Time		---	65	---	
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V , f=1MHz	---	3500	---	pF
C _{oss}	Output Capacitance		---	410	---	
C _{rss}	Reverse Transfer Capacitance		---	340	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	-65	A
I _{SM}	Pulsed Source Current		---	---	-260	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _F =-20A	---	---	-1.5	V

Note :

1.EAS condition:T_J=25°C,V_{DD}=-10V,V_{GS}=-10V,I_D=-15A,L=1mH.

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Typical Characteristics

