

General Description

The MOSFETs utilize advanced processing techniques to achieve extremely low on-resistance per silicon area. This benefit, combined with the fast switching speed and ruggedized device design, provides the designer with an extremely efficient and reliable device for use in a wide variety of applications.

Features

- Advanced Process Technology
- 175°C Operating Temperature
- Fast Switching
- Fully Avalanche Rated
- Simple Drive Requirements

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	150	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	12	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	9.5	A
I_{DM}	Pulsed Drain Current	36	A
EAS	Single Pulse Avalanche Energy ¹	65	mJ
I_{AS}	Avalanche Current	8	A
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	50	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
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	50	°C/W
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	2.5	°C/W

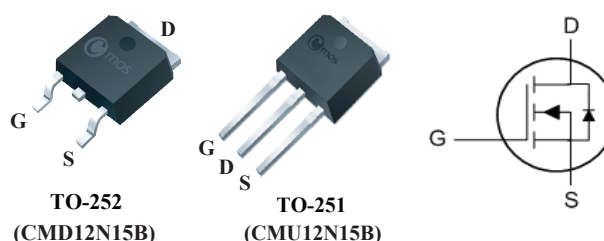
Product Summary

BVDSS	RDSON	ID
150V	0.37Ω	12A

Applications

- PWM Motor Controls
- LED TV
- DC-DC Converters

TO-252/251 Pin Configuration



Electrical Characteristics ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	150	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=3A$	---	340	370	m Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=120V$, $V_{GS}=0V$	---	---	100	nA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=6A$	---	6	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	3.5	---	Ω
Q_g	Total Gate Charge	$V_{DS}=120V$, $V_{GS}=10V$ $I_D=9A$	---	10	---	nC
Q_{gs}	Gate-Source Charge		---	2.5	---	
Q_{gd}	Gate-Drain Charge		---	6	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=75V$, $I_D=9A$, $R_G=25\Omega$	---	6	---	ns
T_r	Rise Time		---	60	---	
$T_{d(off)}$	Turn-Off Delay Time		---	22	---	
T_f	Fall Time		---	40	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	430	---	pF
C_{oss}	Output Capacitance		---	18	---	
C_{rss}	Reverse Transfer Capacitance		---	15	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	12	A
I_{SM}	Pulsed Source Current		---	---	36	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=12A$, $T_J=25^{\circ}\text{C}$	---	---	1.2	V

Note :

1.Starting $T_J=25^{\circ}\text{C}$, $I_D=8A$, $V_{DD}=20V$, $L=2\text{mH}$

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.