

### 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	$\pm 20$	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	12	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	9.5	A
$I_{DM}$	Pulsed Drain Current	36	A
EAS	Single Pulse Avalanche Energy	80	mJ
$I_{AS}$	Avalanche Current	7	A
$P_D@T_C=25^\circ C$	Total Power Dissipation	50	W
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ C$
$T_J$	Operating Junction Temperature Range	-55 to 150	$^\circ C$

### Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	50	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	2.78	$^\circ C/W$

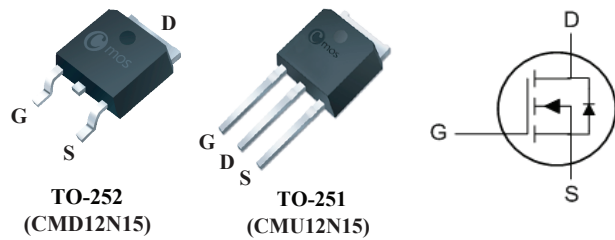
### Product Summary

BVDSS	RDSON	ID
150V	0.26 $\Omega$	12A

### Applications

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

### TO-252/251 Pin Configuration



**Electrical Characteristics (T<sub>J</sub>=25°C , unless otherwise noted)**

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V , I <sub>D</sub> =250uA	150	---	---	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	V <sub>GS</sub> =10V , I <sub>D</sub> =3.5A	---	---	260	mΩ
		V <sub>GS</sub> =4.5V , I <sub>D</sub> = 1A	---	---	270	
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250uA	1	---	2.5	V
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =130V , V <sub>GS</sub> =0V , T <sub>J</sub> =25 °C	---	---	1	uA
		V <sub>DS</sub> =120V , V <sub>GS</sub> =0V , T <sub>J</sub> = 150°C	---	---	10	
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> =±20V , V <sub>DS</sub> =0V	---	---	±100	nA
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =10V , I <sub>D</sub> =3A	---	7.3	---	S
R <sub>g</sub>	Gate Resistance	V <sub>DS</sub> =0V , V <sub>GS</sub> =0V , f=1MHz	---	2.2	---	Ω
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =120V , V <sub>GS</sub> =10V I <sub>D</sub> =9A	---	10	---	nC
Q <sub>gs</sub>	Gate-Source Charge		---	2.5	---	
Q <sub>gd</sub>	Gate-Drain Charge		---	6	---	
T <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DD</sub> =75V , I <sub>D</sub> = 9A , R <sub>G</sub> =25Ω	---	6	---	ns
T <sub>r</sub>	Rise Time		---	60	---	
T <sub>d(off)</sub>	Turn-Off Delay Time		---	22	---	
T <sub>f</sub>	Fall Time		---	40	---	
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =25V , V <sub>GS</sub> =0V , f=1MHz	---	780	---	pF
C <sub>oss</sub>	Output Capacitance		---	24	---	
C <sub>rss</sub>	Reverse Transfer Capacitance		---	17	---	

**Diode Characteristics**

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I <sub>S</sub>	Continuous Source Current	V <sub>G</sub> =V <sub>D</sub> =0V , Force Current	---	---	12	A
I <sub>SM</sub>	Pulsed Source Current		---	---	36	A
V <sub>SD</sub>	Diode Forward Voltage	V <sub>GS</sub> =0V , I <sub>S</sub> =6A , T <sub>J</sub> = 25 °C	---	---	1.2	V

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