

General Description

The 15N10 uses advanced technology and design to provide excellent $R_{DS(ON)}$. This device is ideal for boost converters and synchronous rectifiers for consumer, telecom, industrial power supplies and LED backlighting.

Features

- Reliable and Rugged
- Mounting Information Provided for the DPAK Package
- 100% avalanche tested
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	15	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	10.6	A
I_{DM}	Pulsed Drain Current	60	A
EAS	Single Pulse Avalanche Energy ¹	40	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	50	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	50	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	2.5	$^\circ\text{C}/\text{W}$

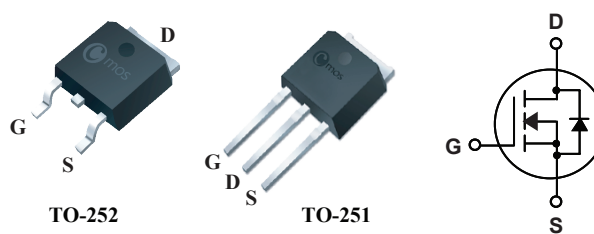
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
100V	100mΩ	15A

Applications

- LED controller
- Power Supplies
- DC-DC Converters

TO252 / TO251 Pin Configuration



Type	Package	Marking
CMD15N10	TO-252	CMD15N10
CMU15N10	TO-251	CMU15N10

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=7A$	---	90	100	mΩ
		$V_{GS}=4.5V$, $I_D=5A$	---	95	115	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=80V$, $V_{GS}=0V$, $T_J=25^{\circ}\text{C}$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	±100	nA
g_{fs}	Forward Transconductance	$V_{DS}=10V$, $I_D=7A$	---	5	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	2.6	---	Ω
Q_g	Total Gate Charge	$V_{DS}=50V$, $V_{GS}=10V$, $I_D=10A$	---	23	---	nC
Q_{gs}	Gate-Source Charge		---	3	---	
Q_{gd}	Gate-Drain Charge		---	7	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=50V$, $V_{GS}=10V$, $R_G=3\Omega$	---	15	---	ns
T_r	Rise Time		---	6	---	
$T_{d(off)}$	Turn-Off Delay Time		---	26	---	
T_f	Fall Time		---	8	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1100	---	pF
C_{oss}	Output Capacitance		---	45	---	
C_{rss}	Reverse Transfer Capacitance		---	32	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	15	A
I_{SM}	Pulsed Source Current		---	---	60	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=15A$, $T_J=25^{\circ}\text{C}$	---	0.92	1.2	V

Note :

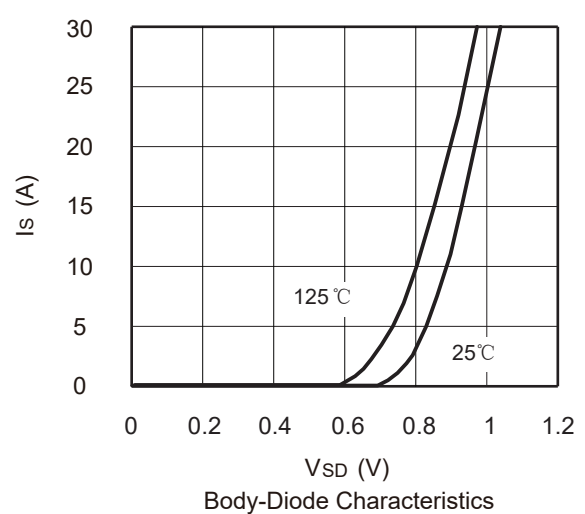
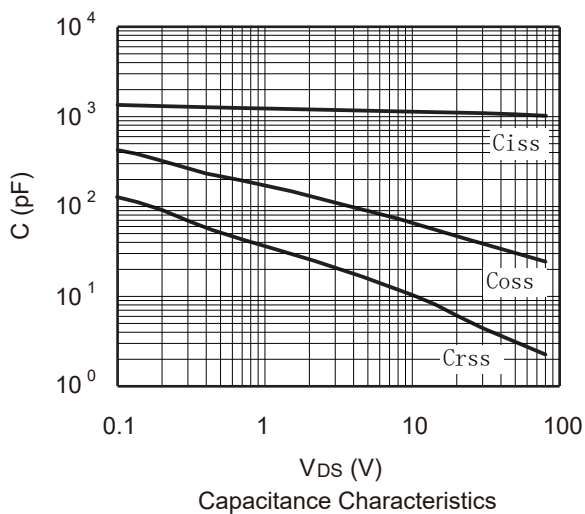
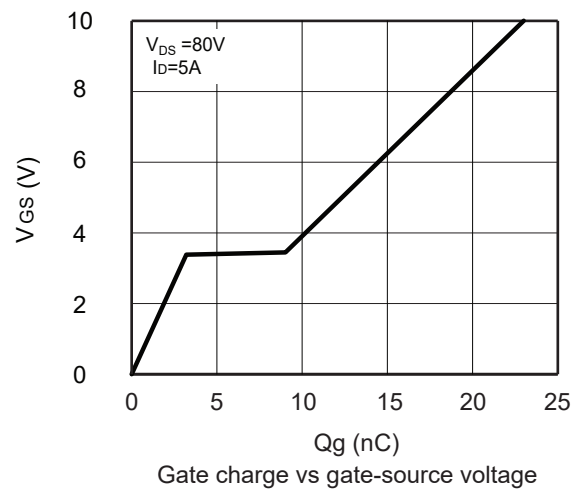
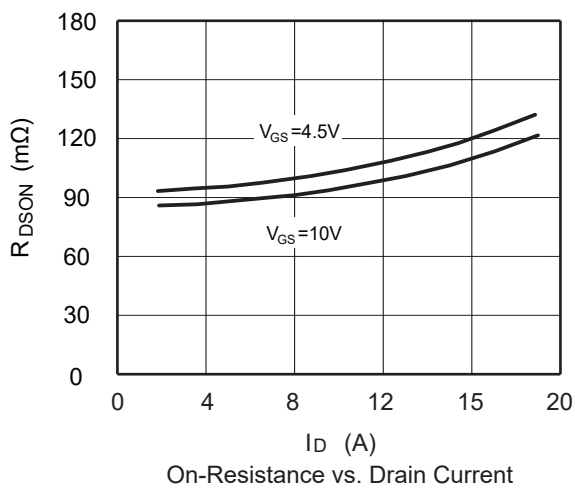
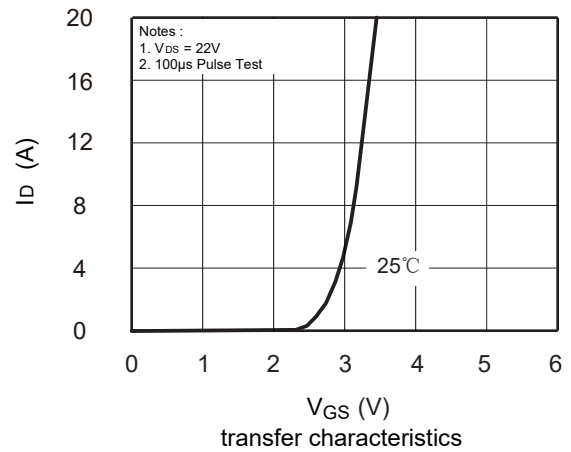
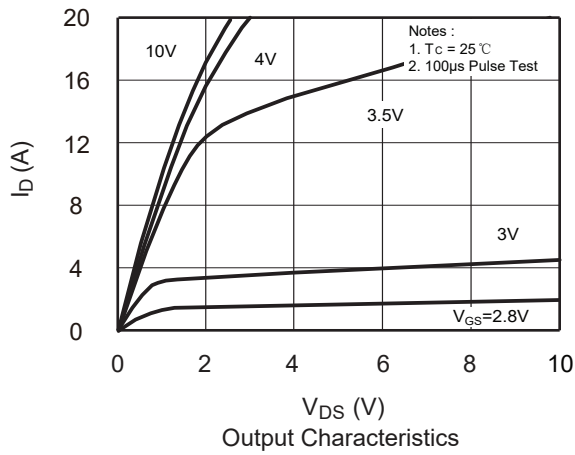
1.The EAS data shows Max. rating . The test condition is $V_{DD}=80V$, $V_{GS}=10V$, $L=1\text{mH}$, $I_{AS}=9A$.

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.Please refer to the latest version of specification.

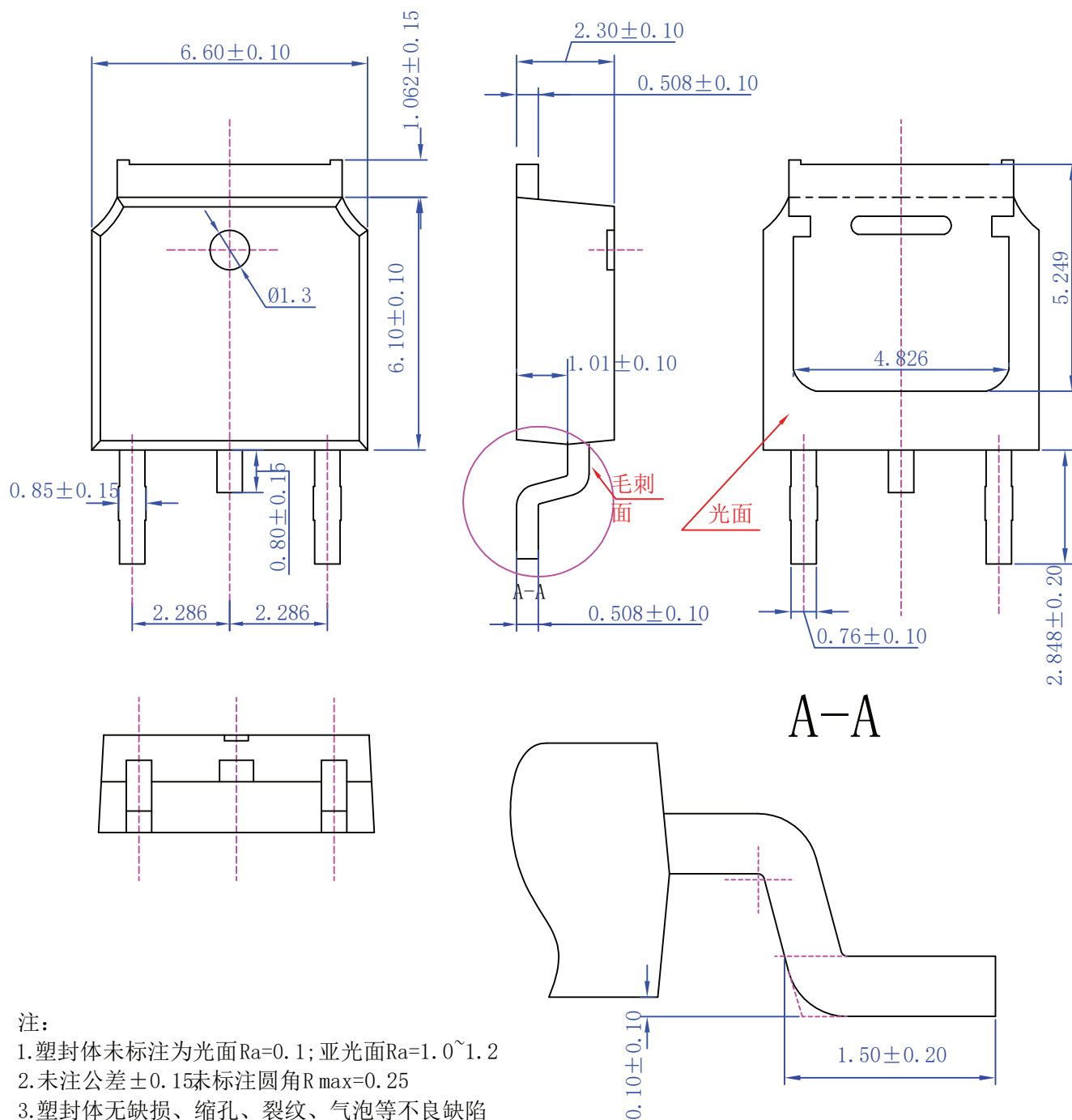
Typical Characteristics



Package Dimension

TO-252

Unit :mm



Package Dimension

TO-251A

Unit :mm

