

CMD330N15/CMU330N15

150V, 29mΩ typ., 50A N-Channel MOSFET

General Description

The 330N15 uses advanced SGT technology 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

- Low On-Resistance
- 100% avalanche tested
- RoHS Compliant

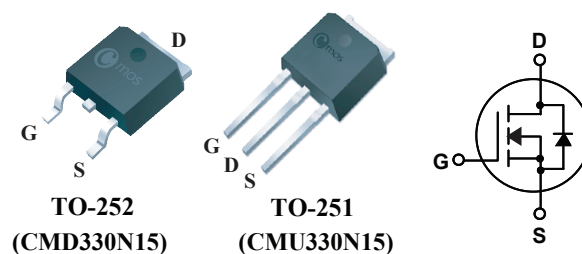
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
150V	33mΩ	50A

Applications

- High Frequency Switching and Synchronous Rectification

TO-252/251 Pin Configuration



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	50	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	35	A
I_{DM}	Pulsed Drain Current	200	A
EAS	Single Pulse Avalanche Energy ¹	162	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	100	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(Steady-State)	---	42	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.25	°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	150	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V, I _D =20A	---	29	33	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	2.0	---	4.0	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =150V, V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =10V, I _D =10A	---	11	---	S
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	1.0	---	Ω
Q _g	Total Gate Charge	I _D =16A	---	12	---	nC
Q _{gs}	Gate-Source Charge	V _{DD} =75V	---	5	---	
Q _{gd}	Gate-Drain Charge	V _{GS} =0 to 10V	---	2	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =75V	---	9	---	ns
T _r	Rise Time	V _{GS} =10V	---	6	---	
T _{d(off)}	Turn-Off Delay Time	R _G =1.6Ω	---	12	---	
T _f	Fall Time	I _D =16A	---	4	---	
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	---	750	---	pF
C _{oss}	Output Capacitance		---	500	---	
C _{rss}	Reverse Transfer Capacitance		---	35	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V, Force Current	---	---	50	A
I _{SM}	Pulsed Source Current		---	---	200	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =20A, T _J =25°C	---	0.89	1.2	V

Note :

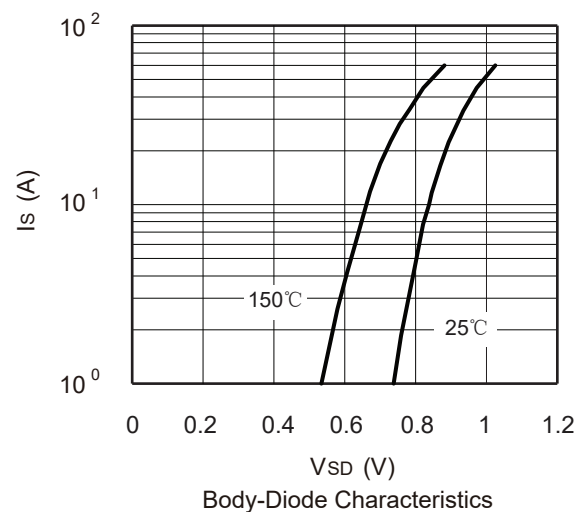
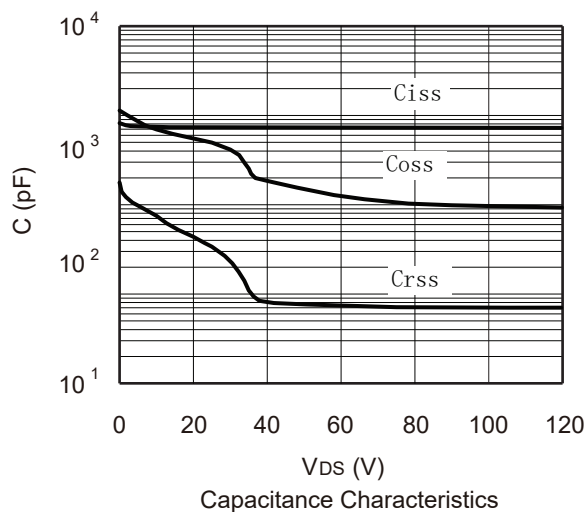
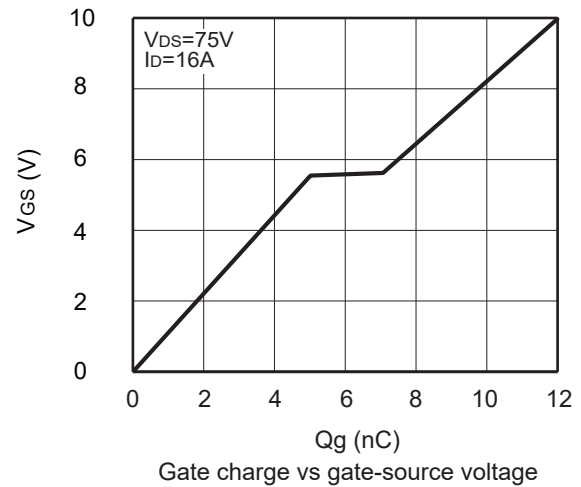
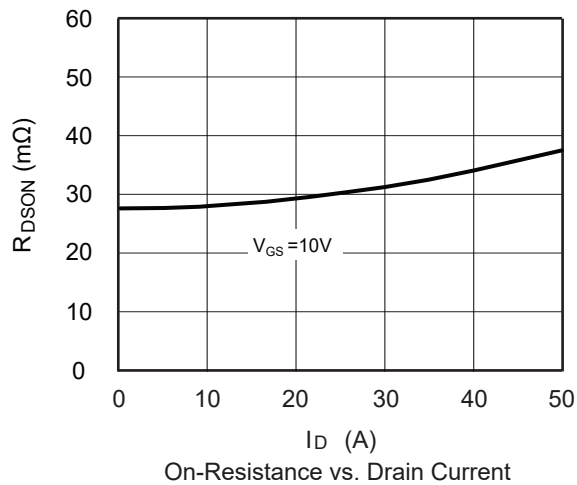
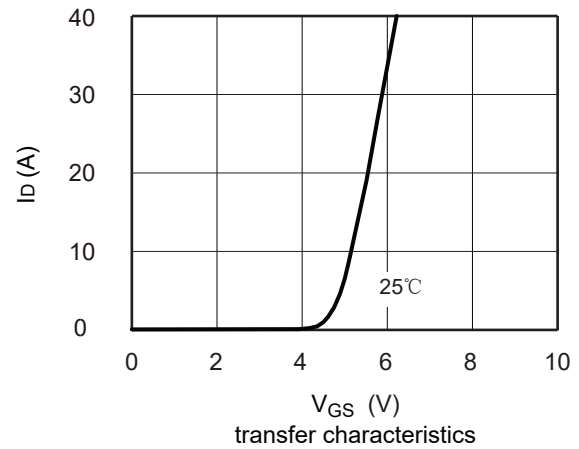
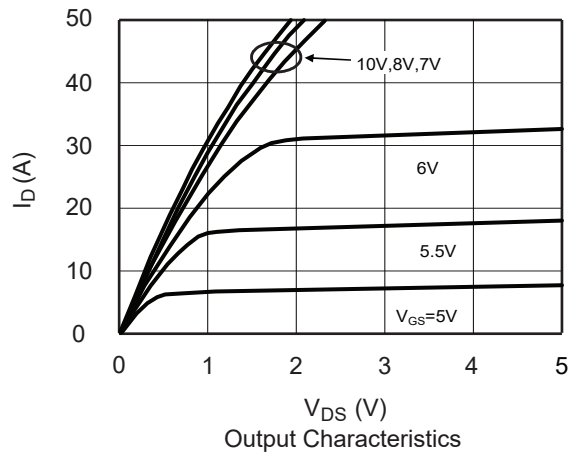
1.The EAS data shows Max. rating . The test condition is V_{DD}=50V, V_{GS}=10V, L=1mH, I_{AS}=18A.

This product has been designed and qualified for the consumer market.

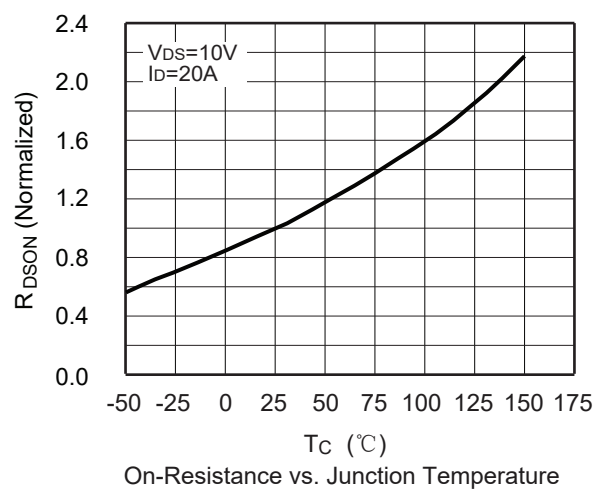
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Cmos reserves the right to improve product design, functions and reliability without notice. Please refer to the latest version of specification.

Typical Characteristics



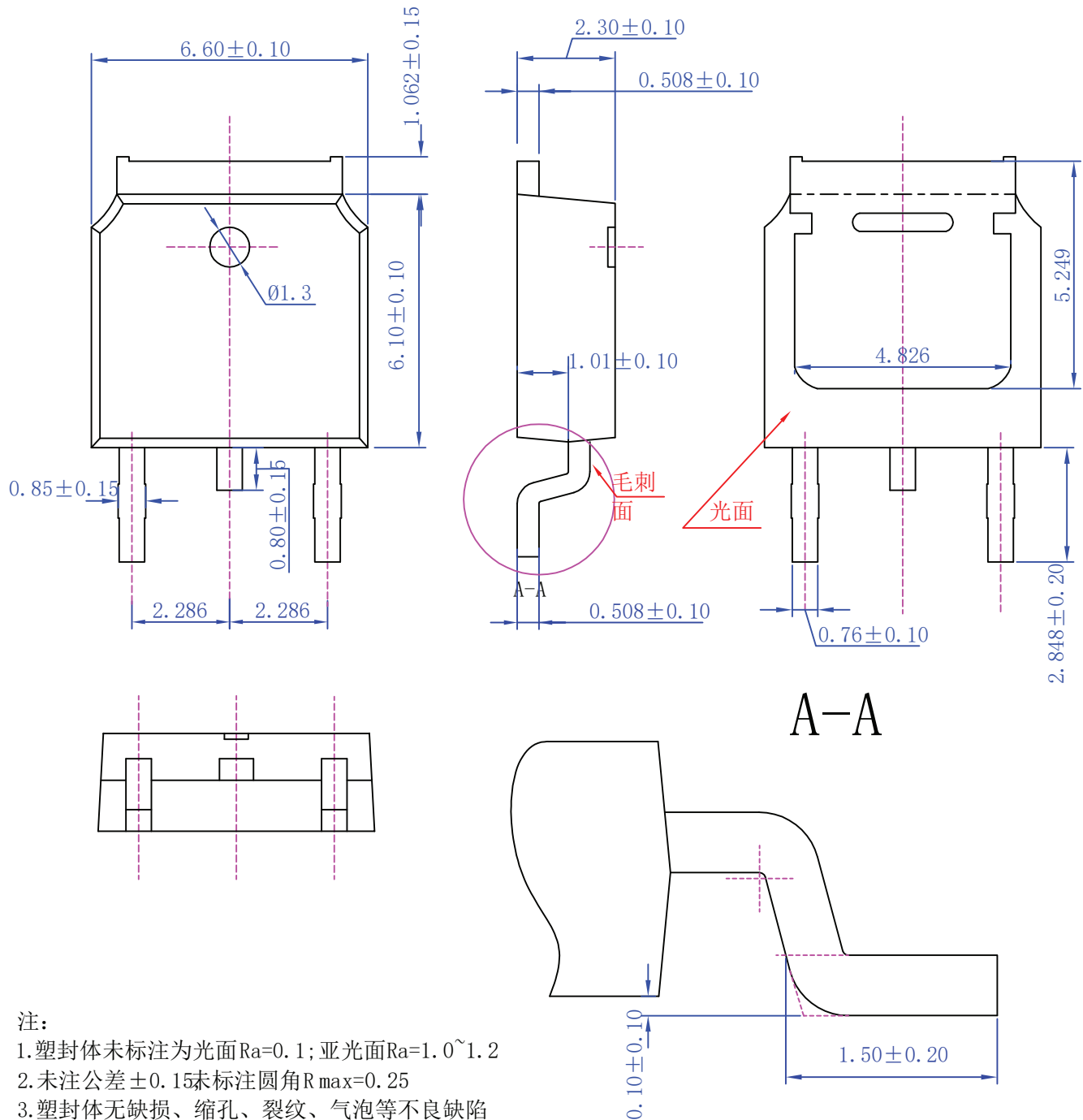
Characteristics



Package Dimension

TO-252

Unit :mm



Package Dimension

TO-251A

Unit :mm

