

CMD060N12/CMU060N12

120V, 4.9mΩ typ., 100A N-Channel MOSFET

General Description

The 060N12 uses advanced SGT technology to provide excellent RDS(ON). This device is ideal for high-frequency switching and synchronous rectification.

Features

- Low On-Resistance
- 100% avalanche tested
- Simple Drive Requirements
- RoHS Compliant

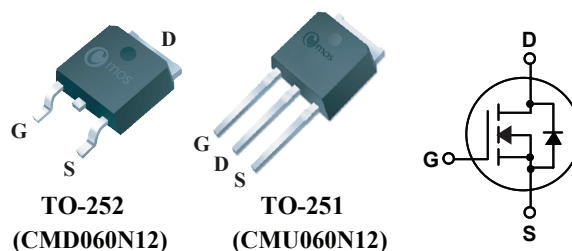
Product Summary

BVDSS	RDS(on) max.	ID
120V	5.6mΩ	100A

Applications

- DC/DC Converter
- Ideal for high-frequency switching and synchronous rectification

TO-252/251 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	120	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current	100	A
I _D @T _C =100°C	Continuous Drain Current	70	A
I _{DM}	Pulsed Drain Current	400	A
EAS	Single Pulse Avalanche Energy ¹	435	mJ
P _D @T _C =25°C	Total Power Dissipation	130	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 _{θJA}	Thermal Resistance Junction-ambient	---	50	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	0.96	°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	120	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V, I _D =20A	---	4.9	5.6	mΩ
		V _{GS} =4.5V, I _D =20A	---	6.2	7.5	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1	---	3	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =100V, V _{GS} =0V	---	---	1	μA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =10V, I _D =7A	---	27	---	S
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	1.3	---	Ω
Q _g	Total Gate Charge	I _D =20A	---	65	---	nC
Q _{gs}	Gate-Source Charge	V _{DS} =50V	---	10	---	
Q _{gd}	Gate-Drain Charge	V _{GS} =10V	---	9	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =50V	---	10	---	ns
T _r	Rise Time	V _{GS} =10V	---	6	---	
T _{d(off)}	Turn-Off Delay Time	R _{GEN} =3Ω	---	51	---	
T _f	Fall Time	R _L =2.5Ω	---	9	---	
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	---	3850	---	pF
C _{oss}	Output Capacitance		---	1850	---	
C _{rss}	Reverse Transfer Capacitance		---	200	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V, Force Current	---	---	100	A
I _{SM}	Pulsed Source Current		---	---	400	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =20A, T _J =25°C	---	0.82	1.2	V

Note :

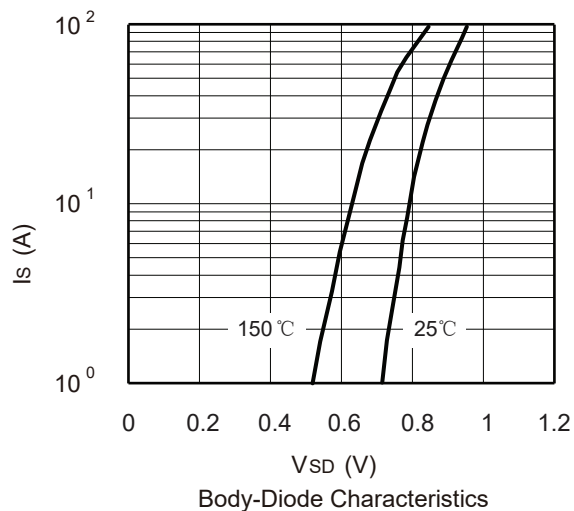
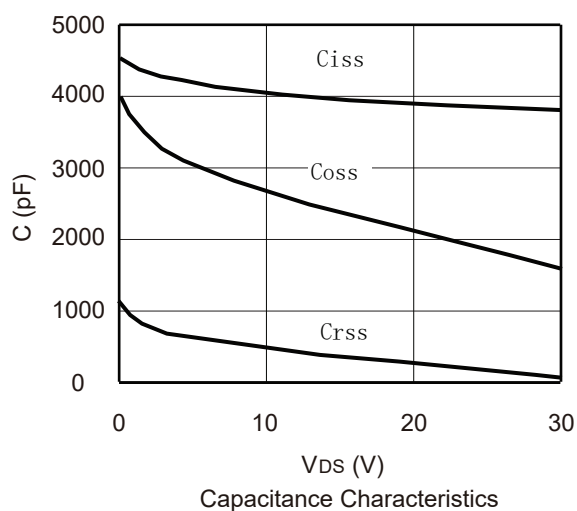
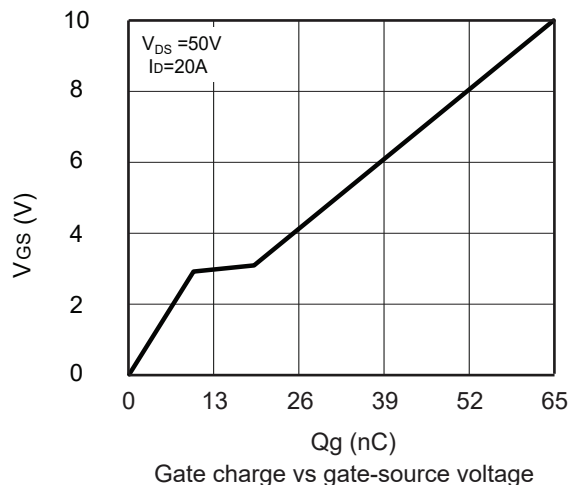
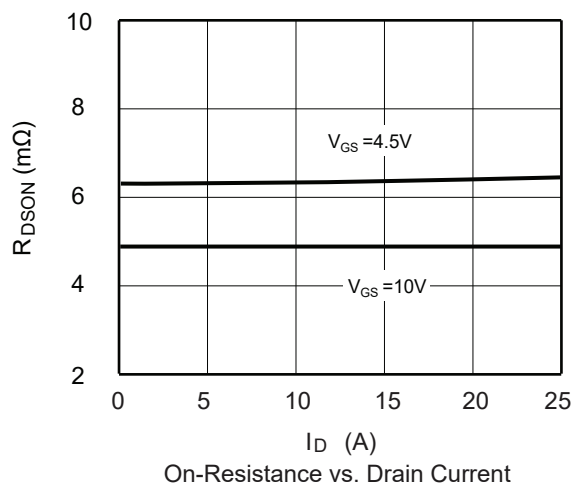
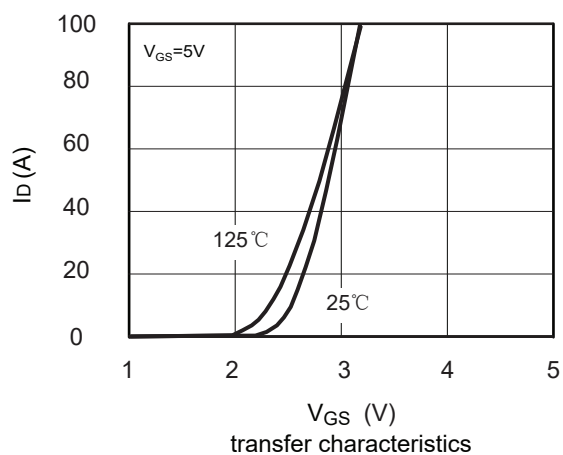
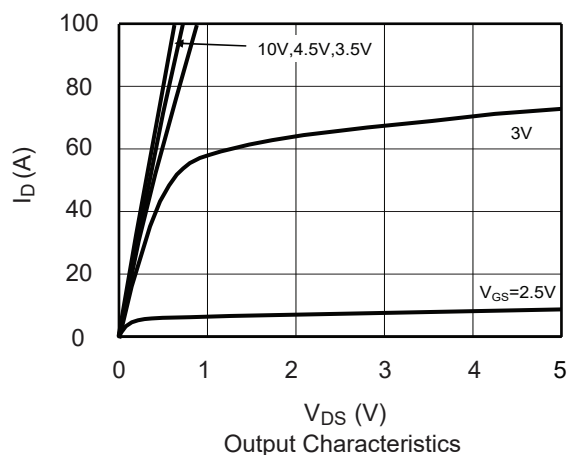
1.The EAS data shows Max. rating . The test condition is V_{DD}=80V, V_{GS}=10V, L=1mH, I_{AS}=29.5A.

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.

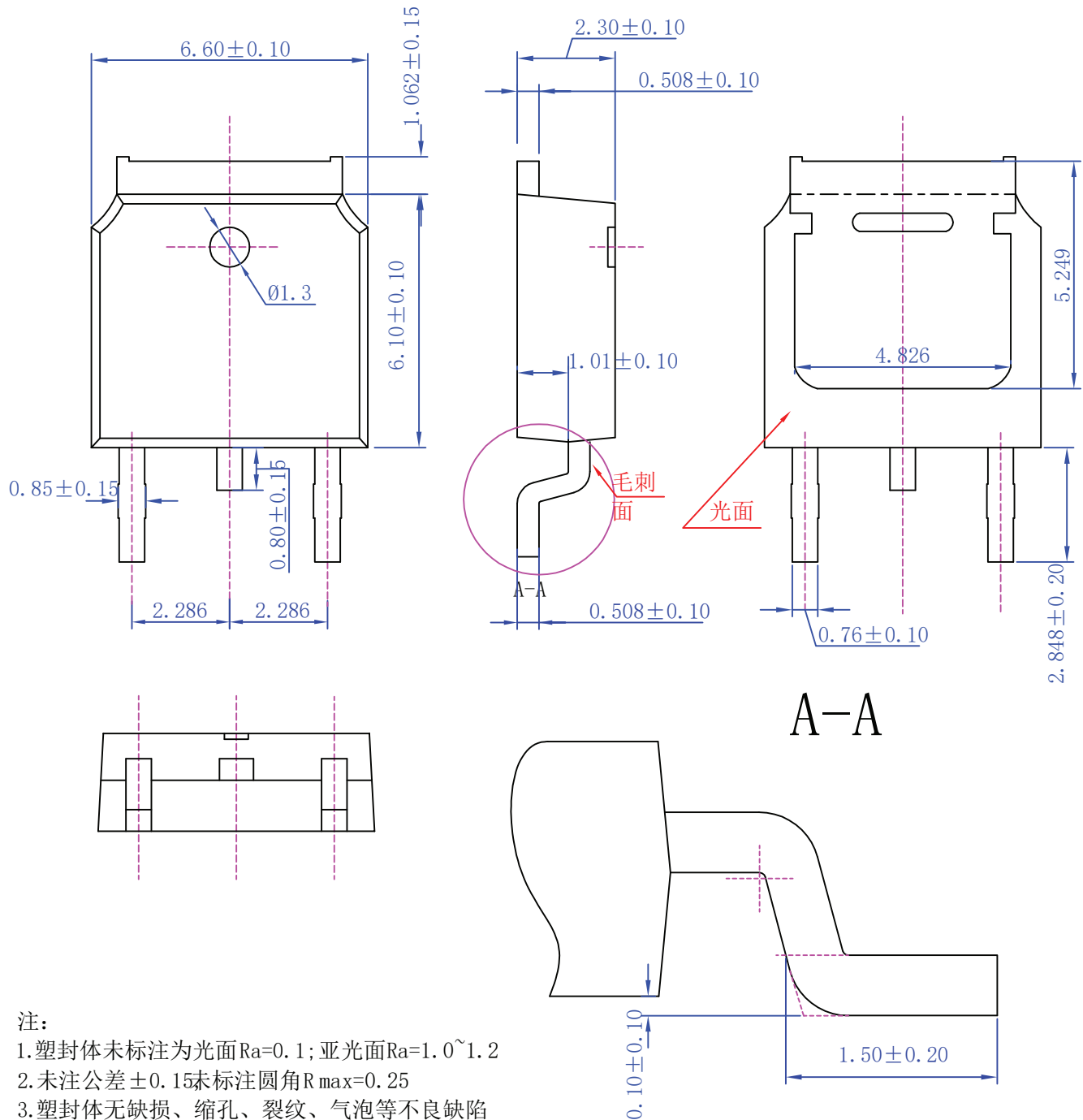
Typical Characteristics



Package Dimension

TO-252

Unit :mm



Package Dimension

TO-251A

Unit :mm

