CMD60N06/CMU60N06

60V, 15mΩ typ., 60A N-Channel MOSFET

General Description

The 60N06 uses advanced trench technology to provide excellent RDS(ON).It can be used in a wide variety of applications.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
60V	18mΩ	60A

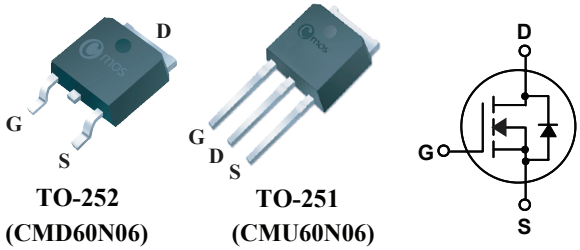
Applications

- DC/DC Converter
- Motor Drive

Features

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

TO-252/251 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current	60	A
I_D@T_C=100℃	Continuous Drain Current	42	A
I_{DM}	Pulsed Drain Current	240	A
EAS	Single Pulse Avalanche Energy[1]	123	mJ
P_D@T_C=25℃	Total Power Dissipation	80	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	50	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.56	℃/W

Electrical Characteristics(T_J=25℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=20A	---	15	18	mΩ
		V_{GS}=4.5V , I_D=10A	---	16.5	20	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	1.0	---	2.5	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=60V , V_{GS} =0V	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS} =±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=10V , I_D=20A	---	16	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	2.5	---	Ω
Q_g	Total Gate Charge	I_D=36A	---	61	---	nC
Q_{gs}	Gate-Source Charge	V_{DS}=48V	---	10	---	
Q_{gd}	Gate-Drain Charge	V_{GS}=10V	---	16	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=30V	---	36	---	ns
T_r	Rise Time	V_{GS} =10V	---	310	---	
$T_{d(off)}$	Turn-Off Delay Time	R_G = 10Ω	---	170	---	
T_f	Fall Time	I_D=18A	---	180	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	2800	---	pF
C_{oss}	Output Capacitance		---	95	---	
C_{rss}	Reverse Transfer Capacitance		---	85	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	60	A
I_{SM}	Pulsed Source Current		---	---	240	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=28A ,T_J=25℃	---	0.87	1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=30V , V_{GS}=10V , L=0.5mH , I_{AS}=22.2A.

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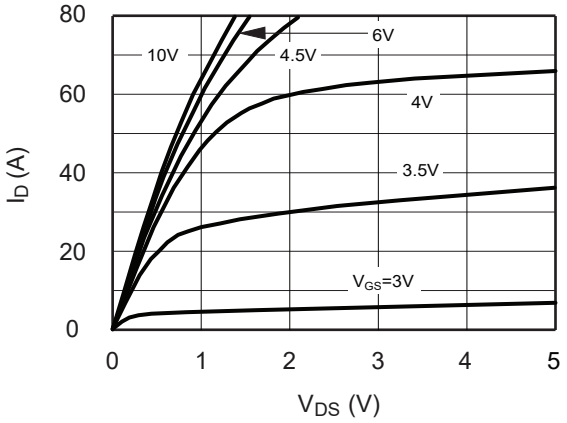
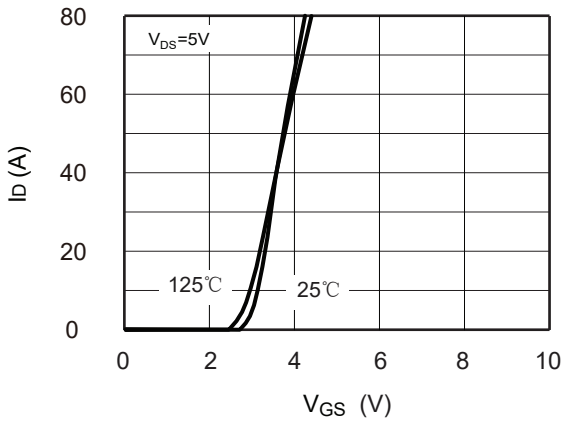
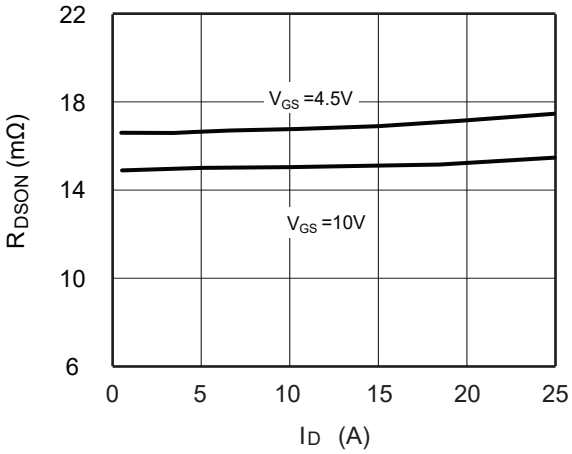
Typical Characteristics



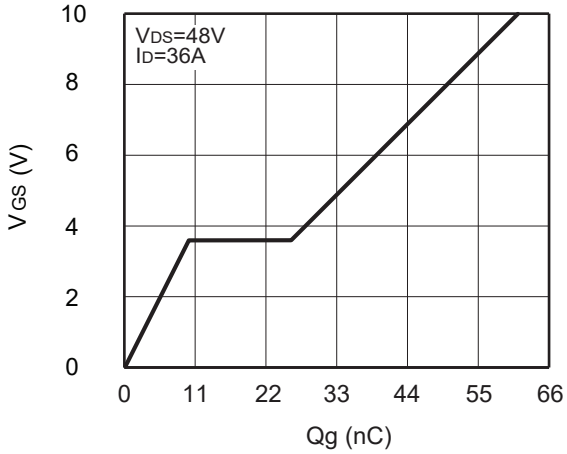
Output Characteristics



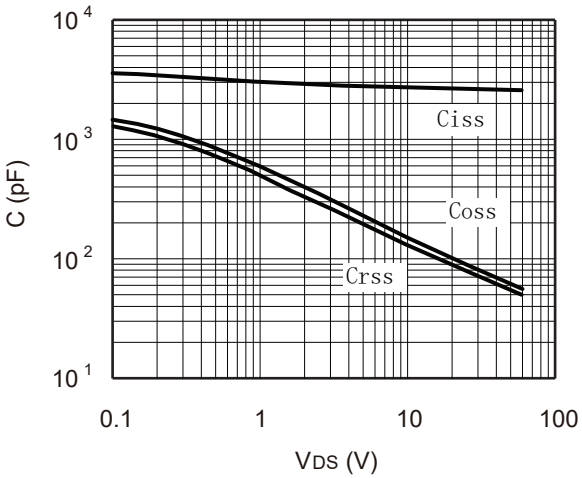
transfer characteristics



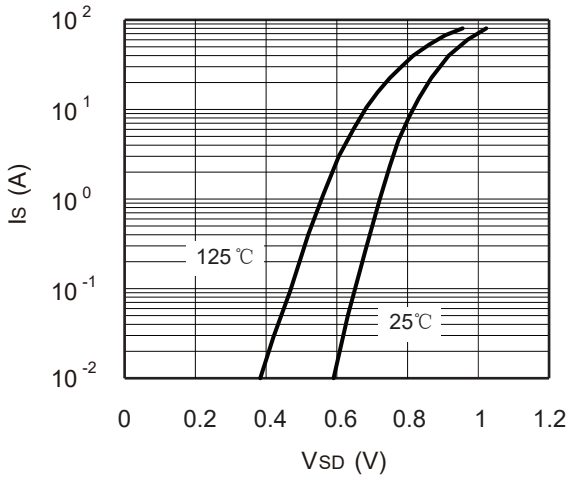
On-Resistance vs. Drain Current



Gate charge vs gate-source voltage



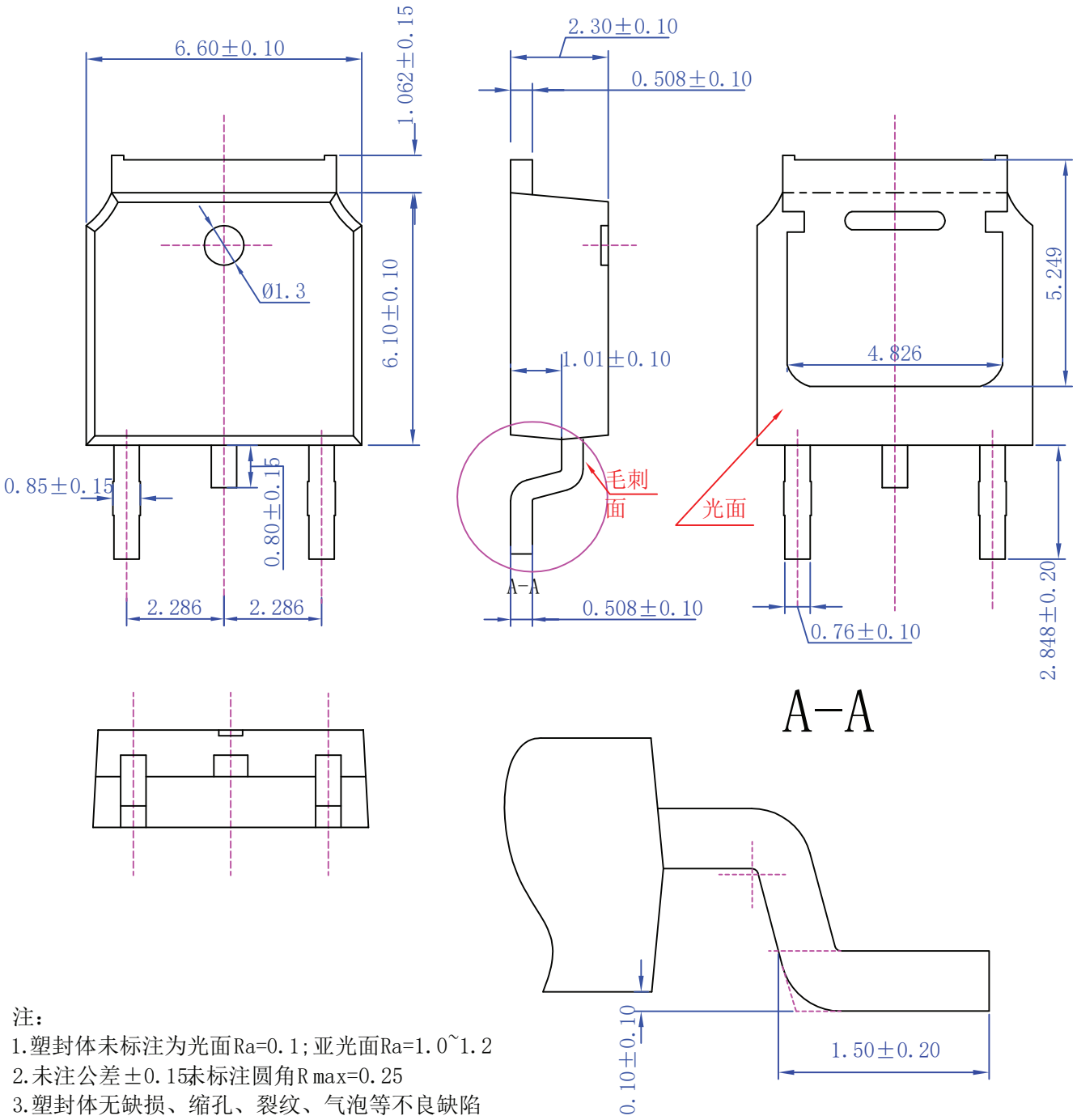
Capacitance Characteristics



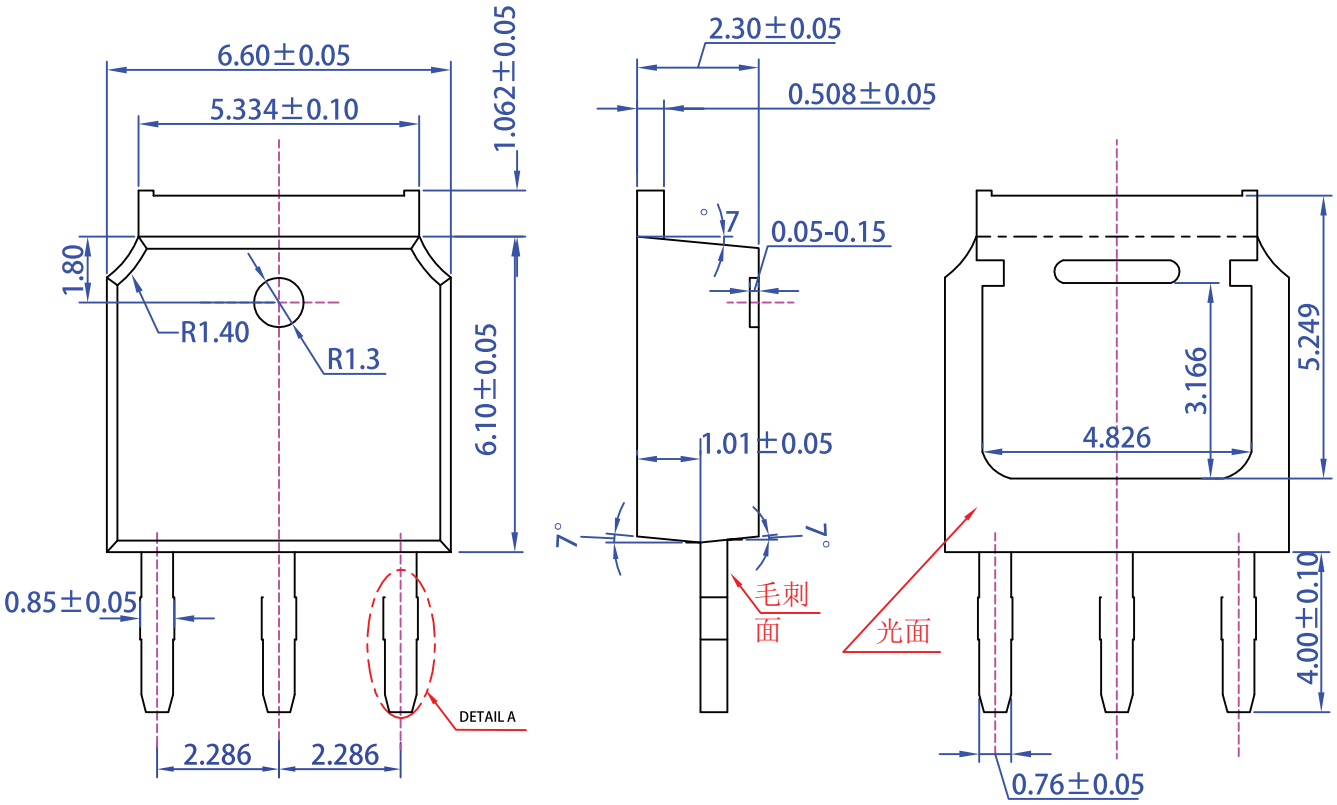
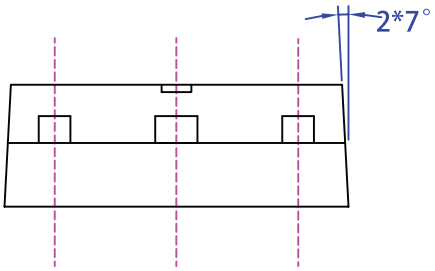
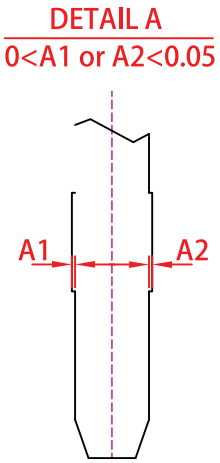
Body-Diode Characteristics

Package Dimension

TO-252 Unit :mm



注：
1.塑封体未标注为光面Ra=0.1;亚光面Ra=1.0~1.2
2.未注公差±0.15未标注圆角R max=0.25
3.塑封体无缺损、缩孔、裂纹、气泡等不良缺陷
4.标注单位mm
5.顶针孔不允许凸出塑封体表面

Package Dimension

TO-251A Unit :mm