

General Description

The 120P06 uses advanced trench technology to provide excellent $R_{DS(ON)}$.

This device is suitable for use as a Battery protection or in other Switching application.

Features

- P-Channel MOSFET
- Low ON-resistance
- 100% avalanche tested
- RoHS Compliant

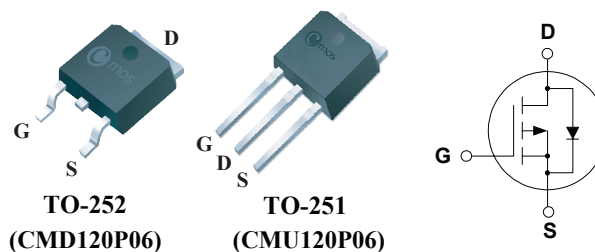
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
-60V	7.5mΩ	-100A

Applications

- Motor
- Multi cells Li-ion battery protection

TO-252/251 Pin Configuration



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ Unless Otherwise Noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	-100	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	-65	A
I_{DM}	Pulsed Drain Current	-400	A
EAS	Single Pulse Avalanche Energy ¹	1056	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	160	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 ²	---	40	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.78	$^\circ\text{C/W}$

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 =-250μA	-60	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =-10V , I _D =-28A	---	6.4	7.5	mΩ
		V _{GS} =-4.5V , I _D =-25A	---	7.4	10	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D = -250μA	-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
g _{fs}	Forward Transconductance	V _{DS} =-5V , I _D =-25A	---	69	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	12	---	Ω
Q _g	Total Gate Charge	V _{DS} =-30V , V _{GS} =-10V , I _D =-110A	---	180	---	nC
Q _{gs}	Gate-Source Charge		---	50	---	
Q _{gd}	Gate-Drain Charge		---	40	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =-30V , V _{GS} = -10V , R _G =2.5Ω I _D =-110A	---	20	---	ns
T _r	Rise Time		---	190	---	
T _{d(off)}	Turn-Off Delay Time		---	140	---	
T _f	Fall Time		---	300	---	
C _{iss}	Input Capacitance	V _{DS} =-25V , V _{GS} =0V , f=1MHz	---	12200	---	pF
C _{oss}	Output Capacitance		---	650	---	
C _{rss}	Reverse Transfer Capacitance		---	330	---	

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 =-25A , T _J =25°C	---	-0.83	-1.3	V

Note :

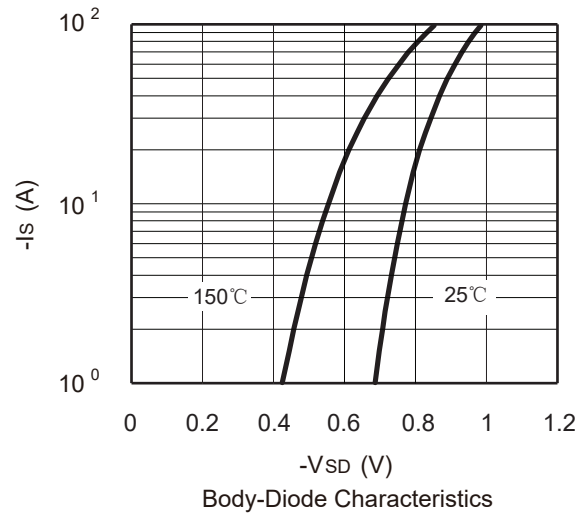
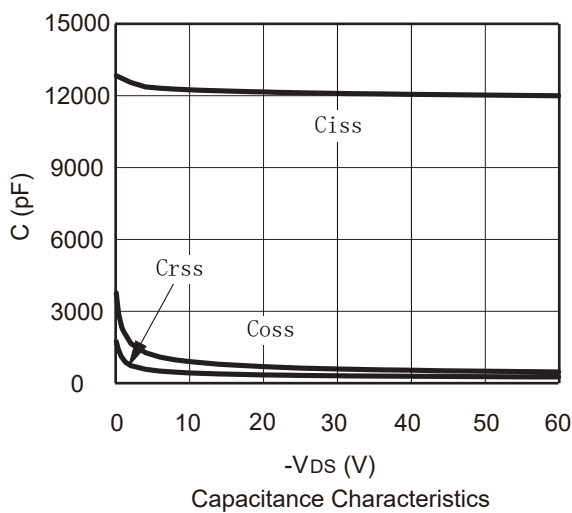
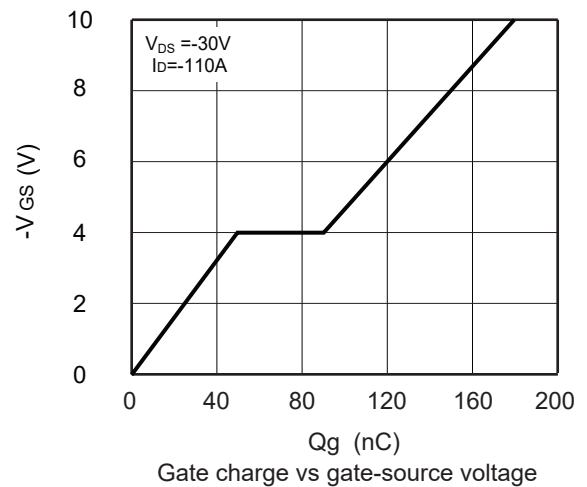
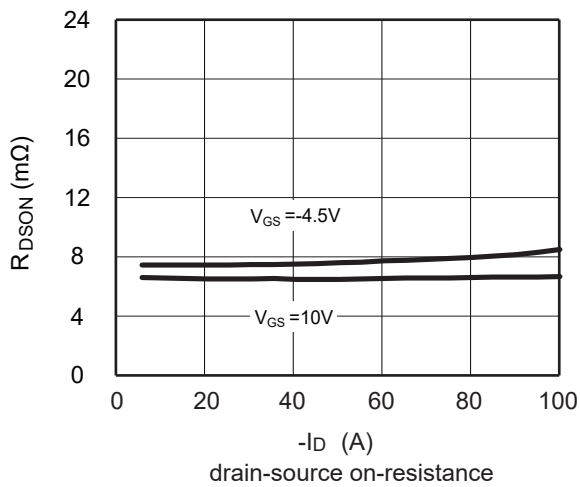
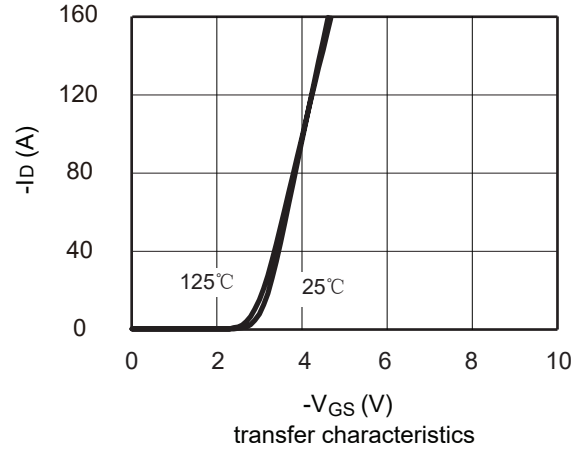
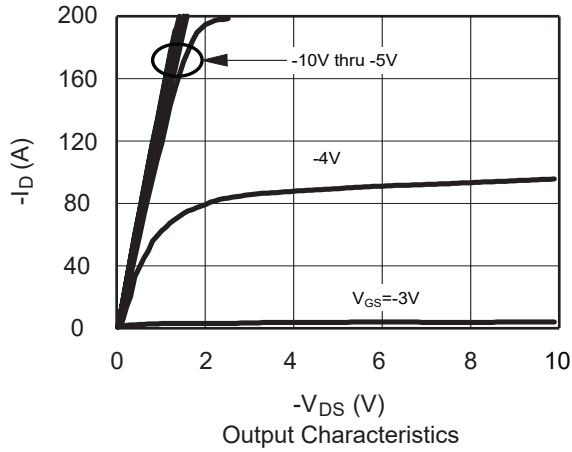
- 1.The EAS data shows Max. rating . The test condition is V_{DD}=-40V , V_{GS}=-10V , L=0.5mH , I_{AS}=-65A.
2. Device mounted on FR-4 substrate PC board with 2oz copper in 1inch square cooling area.

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

Cmos assumes no liability for customers' product design or applications.

Cmos reserver the right to improve product design ,functions and reliability wihtout notice.Please refer to the latest version of specification.

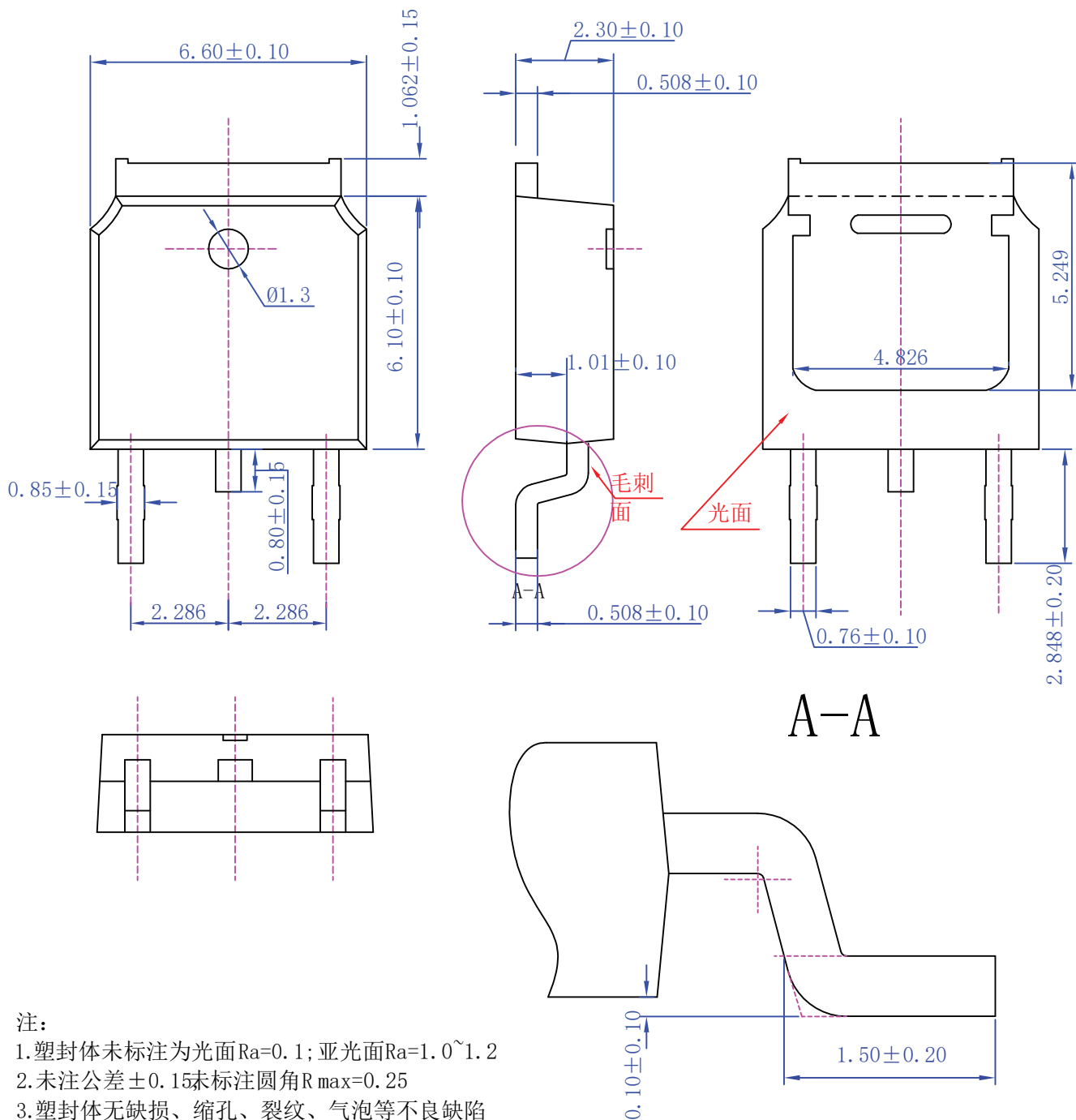
Typical Characteristics



Package Dimension

TO-252

Unit :mm



Package Dimension

TO-251A

Unit :mm

