

General Description

The 400P10L uses advanced SGT technology to provide excellent RDS(ON). This is suitable device for most of the synchronous buck converter applications.

Features

- 175°C Operating Temperature
- Low ON-resistance
- 100% avalanche tested
- RoHS Compliant

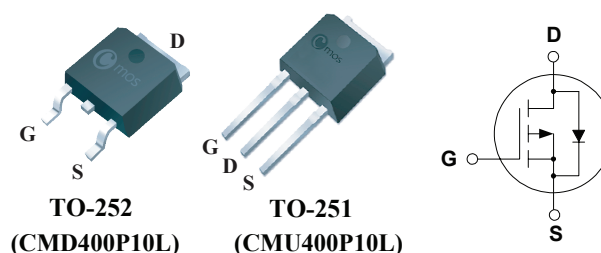
Product Summary

BVDSS	R _{DS(on)} max.	ID
-100V	36mΩ	-40A

Applications

- Load Switch
- Motor Control
- Switching Application

TO-252/251 Pin Configuration



Absolute Maximum Ratings (T_A=25 °C Unless Otherwise Noted)

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	-100	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current	-40	A
I _D @T _C =100°C	Continuous Drain Current	-28	A
I _{DM}	Pulsed Drain Current	-160	A
EAS	Single Pulse Avalanche Energy ¹	210	mJ
P _D @T _C =25°C	Total Power Dissipation	100	W
T _{STG}	Storage Temperature Range	-55 to 175	°C
T _J	Operating Junction Temperature Range	-55 to 175	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance Junction-ambient ²	---	45	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	1.5	°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	-100	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =-10V , I _D =-15A	---	31	36	mΩ
		V _{GS} =-4.5V , I _D =-10A	---	38	45	
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} =-100V , 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 =-15A	---	28	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	6.1	---	Ω
Q _g	Total Gate Charge	V _{DS} =-50V , V _{GS} =-10V , I _D =-15A	---	23	---	nC
Q _{gs}	Gate-Source Charge		---	4.9	---	
Q _{gd}	Gate-Drain Charge		---	4.2	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =-50V , V _{GS} = -10V , R _{GEN} =3Ω I _D =-15A	---	5.7	---	ns
T _r	Rise Time		---	14	---	
T _{d(off)}	Turn-Off Delay Time		---	28	---	
T _f	Fall Time		---	26	---	
C _{iss}	Input Capacitance	V _{DS} =-25V , V _{GS} =0V , f=1MHz	---	1300	---	pF
C _{oss}	Output Capacitance		---	670	---	
C _{rss}	Reverse Transfer Capacitance		---	40	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	-40	A
I _{SM}	Pulsed Source Current		---	---	-160	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =-20A , T _J =25°C	---	-0.93	-1.3	V
t _{rr}	Reverse Recovery Time	di/dt = 100A/μs	---	53	---	ns
Q _{rr}	Reverse Recovery Charge	T _J =25°C , I _F =-15A	---	103	---	nC

Note :

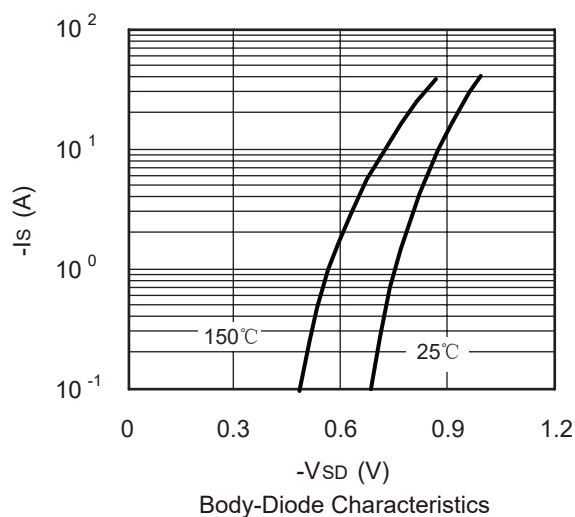
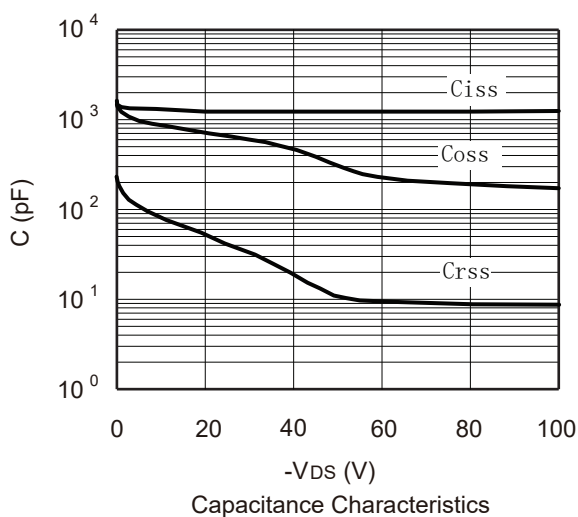
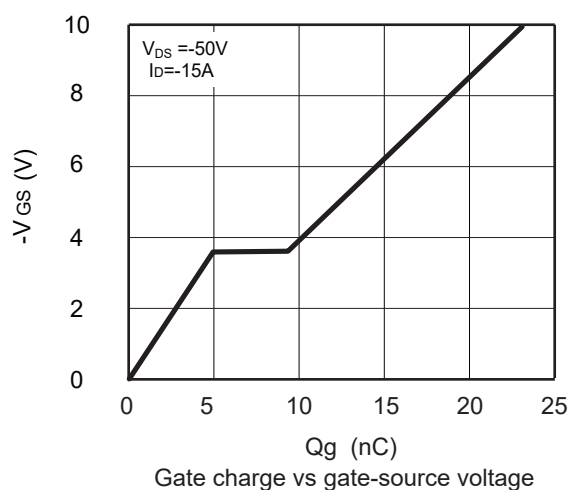
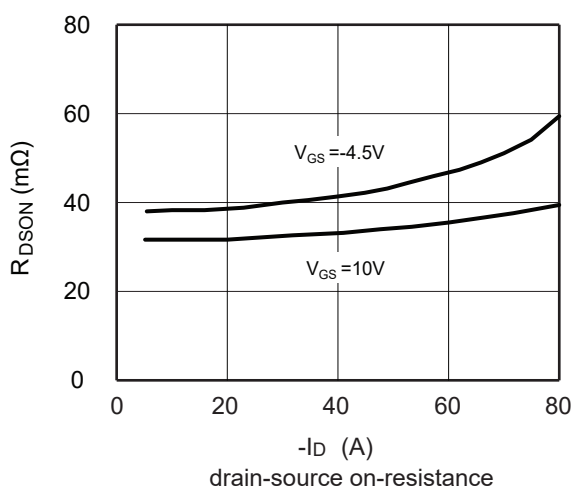
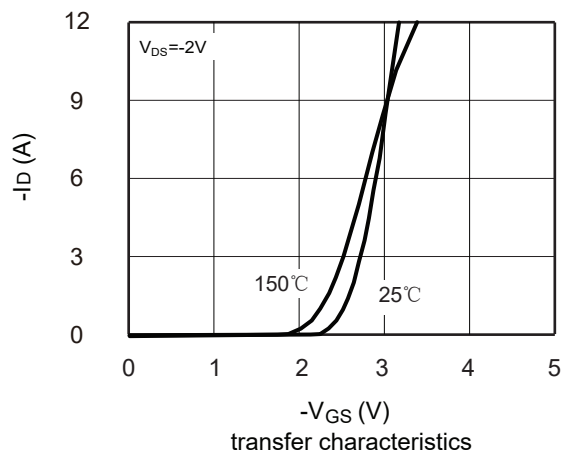
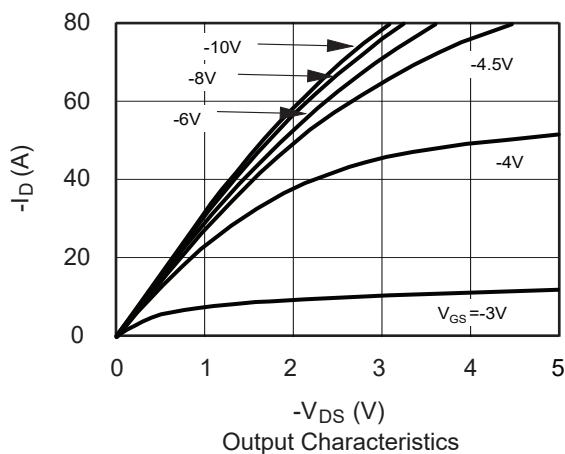
- 1.The EAS data shows Max. rating . The test condition is V_{DD}=-50V , V_{GS}=-10V , L=1mH , I_{AS}=-20.5A.
2. Device mounted on FR-4 substrate PC board with 2oz copper in 1inch square cooling area.

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.

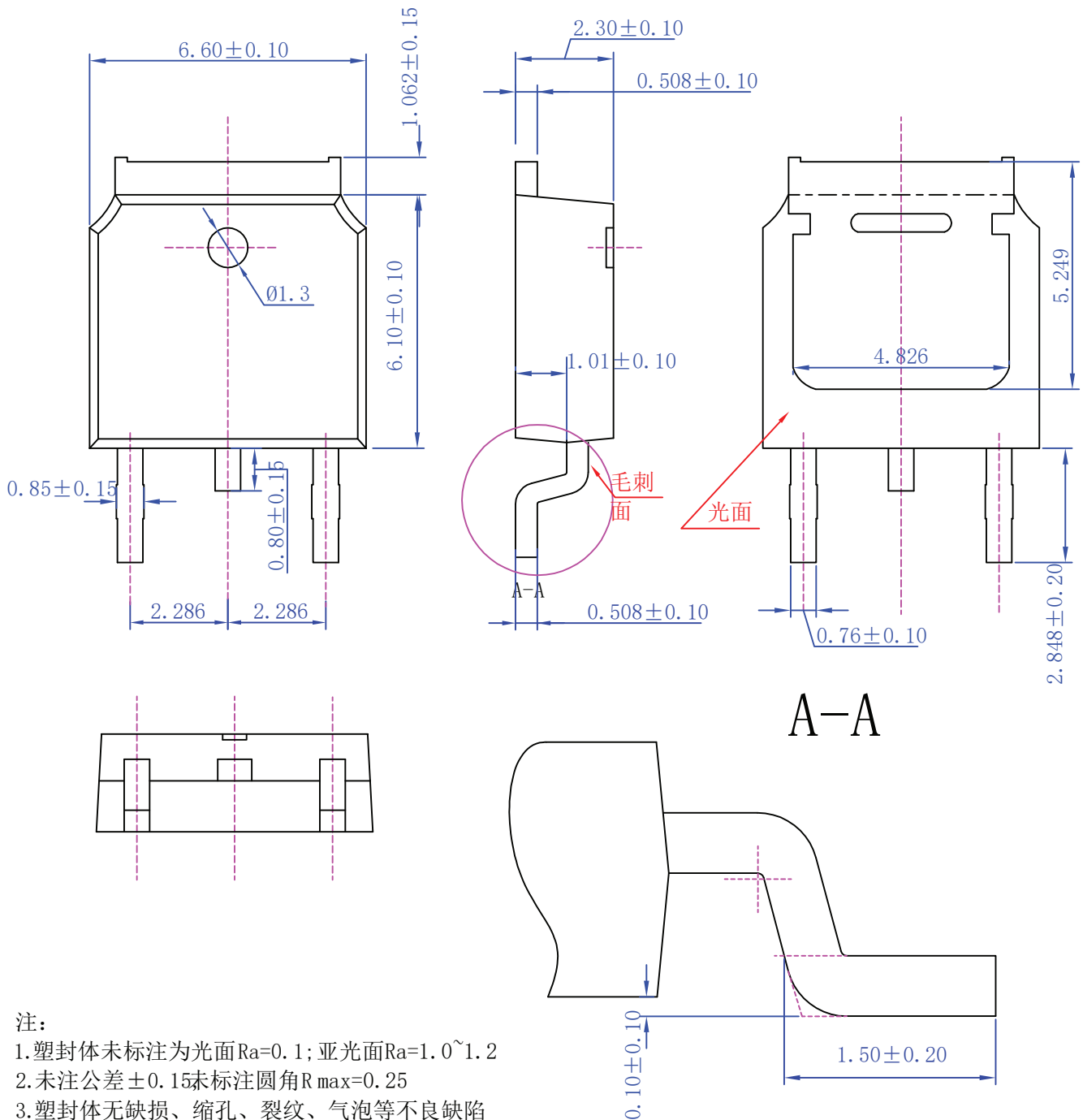
Typical Characteristics



Package Dimension

TO-252

Unit :mm



注:

1. 塑封体未标注为光面 $Ra=0.1$; 亚光面 $Ra=1.0 \sim 1.2$
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

