

General Description

The 20P06A uses advanced trench technology and design to provide excellent RDS(ON). This is suitable device for most of the synchronous buck converter applications.

Product Summary

BVDSS	R _{DS(on)} max.	ID
-60V	95mΩ	-18A

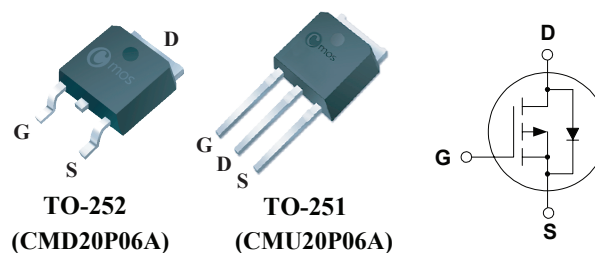
Applications

- DC-DC converters
- Motor control

Features

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

TO-252/251 Pin Configuration



Absolute Maximum Ratings (T_A=25 °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°C	Continuous Drain Current	-18	A
I _D @T _C =100°C	Continuous Drain Current	-11.5	A
I _{DM}	Pulsed Drain Current	-72	A
EAS	Single Pulse Avalanche Energy ¹	42	mJ
P _D @T _C =25°C	Total Power Dissipation	35	W
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance Junction-ambient	---	62	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	3.57	°C/W

Electrical Characteristics ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=-250\mu A$	-60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V$, $I_D=-10A$	---	81	95	mΩ
		$V_{GS}=-4.5V$, $I_D=-5A$	---	95	120	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D = -250\mu A$	-1.0	---	-2.5	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-60V$, $V_{GS} = 0V$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=-5V$, $I_D=-10A$	---	16	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	5.7	---	Ω
Q_g	Total Gate Charge	$V_{DS}=-48V$, $I_D=-18A$ $V_{GS}=-10V$ (Note 2)	---	45	---	nC
Q_{gs}	Gate-Source Charge		---	10	---	
Q_{gd}	Gate-Drain Charge		---	15	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=-30V$, $V_{GS} = -10V$ $I_D = -9A$, $R_G=4.7\Omega$ (Note 2)	---	30	---	ns
T_r	Rise Time		---	20	---	
$T_{d(off)}$	Turn-Off Delay Time		---	100	---	
T_f	Fall Time		---	25	---	
C_{iss}	Input Capacitance	$V_{DS}=-25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	1150	---	pF
C_{oss}	Output Capacitance		---	50	---	
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	---	---	-18	A
I_{SM}	Pulsed Source Current		---	---	-72	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=-18A$, $T_J=25^{\circ}\text{C}$	---	-0.98	-1.2	V

Note :

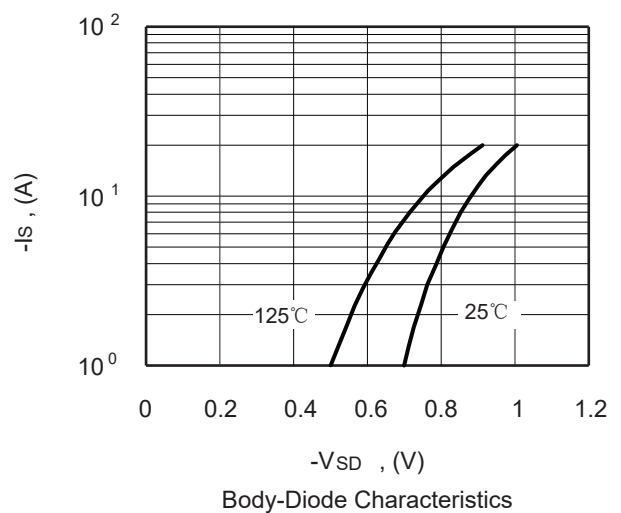
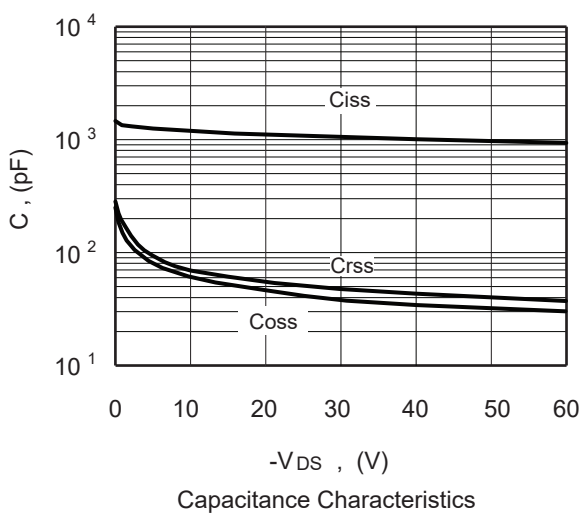
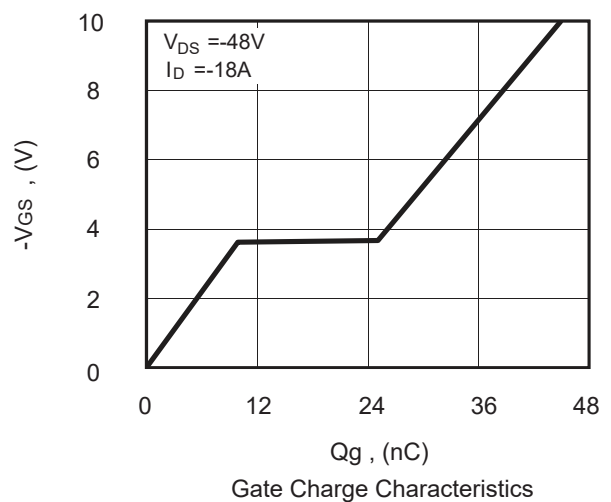
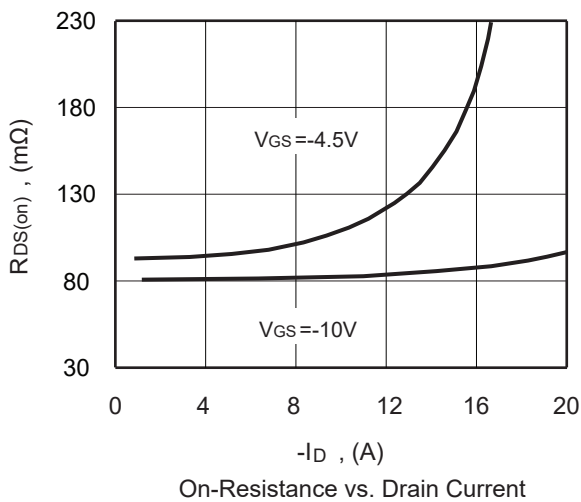
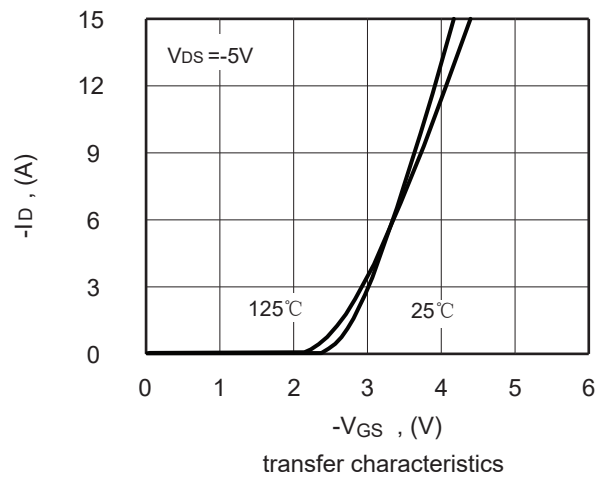
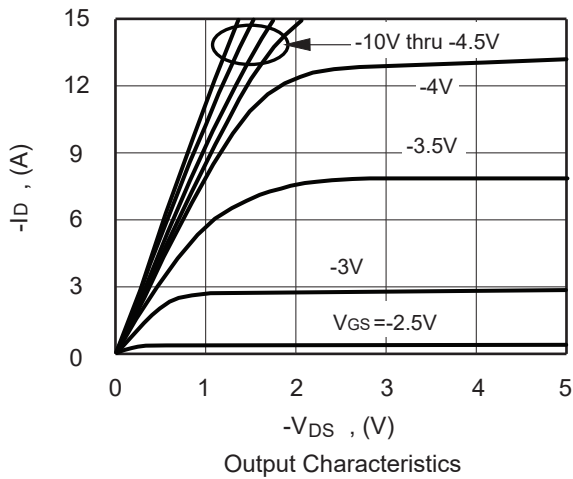
- 1.The EAS data shows Max. rating . The test condition is $V_{DD}=-30V$, $V_{GS}=-10V$, $L=0.5\text{mH}$, $I_{AS}=-13A$.
2. Defined by design, not subject to production.

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 withtout notice.Please refer to the latest version of specification.

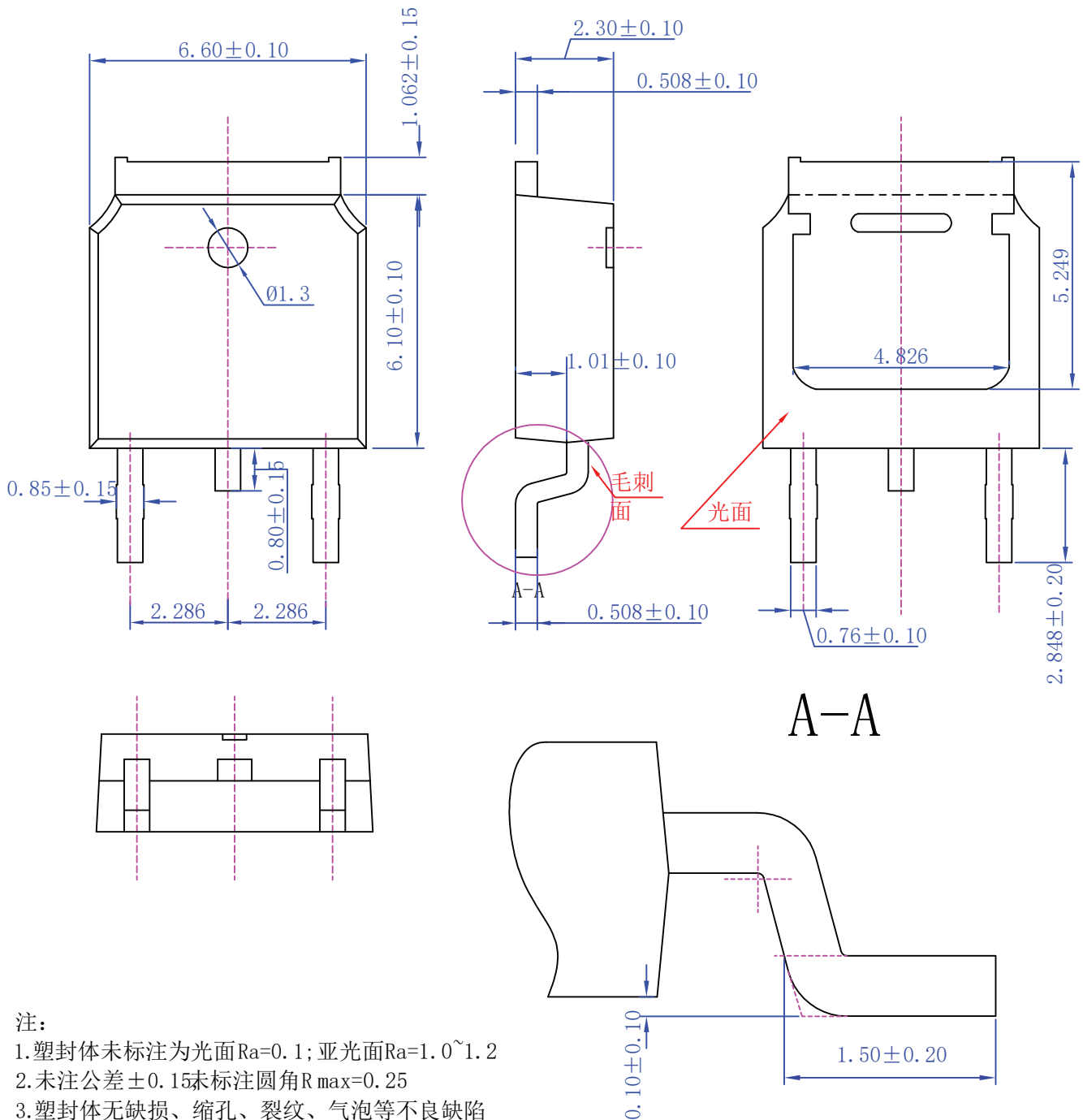
Typical Characteristics



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

Unit :mm

