

General Description

The 20P06 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	77mΩ	-20A

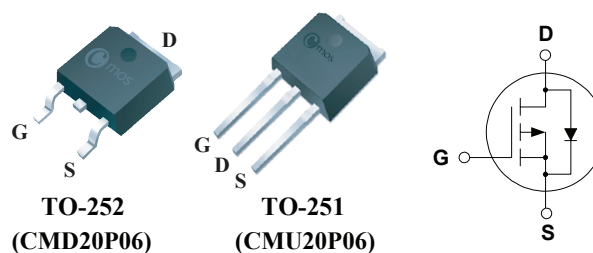
Applications

- DC/DC converter
- Power management
- Load switch

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	-20	A
I _D @T _C =100°C	Continuous Drain Current	-14	A
I _{DM}	Pulsed Drain Current	-80	A
EAS	Single Pulse Avalanche Energy ¹	42	mJ
P _D @T _C =25°C	Total Power Dissipation	40	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	---	3.13	°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	$V_{GS}=-10V$, $I_D=-10A$	---	68	77	mΩ
		$V_{GS}=-4.5V$, $I_D=-5A$	---	93	110	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D = -250\mu A$	-1.0	---	-3.0	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-60V$, $V_{GS}=0V$	---	---	-1	uA
I_{GSS}	Gate-Source Leakage Current	$V_{GS} = \pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=-10V$, $I_D=-13A$	---	9	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	12	---	Ω
Q_g	Total Gate Charge	$V_{DS}=-30V$, $V_{GS}=-10V$, $I_D=-3A$	---	19	---	nC
Q_{gs}	Gate-Source Charge		---	3.4	---	
Q_{gd}	Gate-Drain Charge		---	4.4	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=-30V$, $V_{GS} = -10V$, $R_G = 3\Omega$ $I_D = -3A$	---	5	---	ns
T_r	Rise Time		---	23	---	
$T_{d(off)}$	Turn-Off Delay Time		---	34	---	
T_f	Fall Time		---	42	---	
C_{iss}	Input Capacitance	$V_{DS}=-25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	860	---	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	---	---	-20	A
I_{SM}	Pulsed Source Current		---	---	-80	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=-18A$, $T_J=25^{\circ}\text{C}$	---	-0.99	-1.2	V

Note :

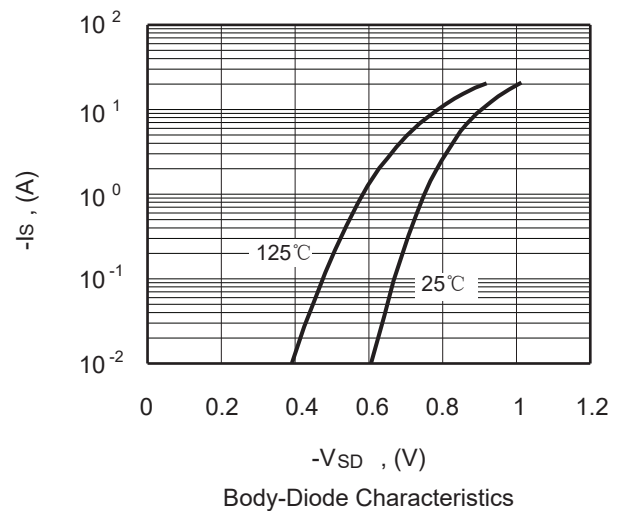
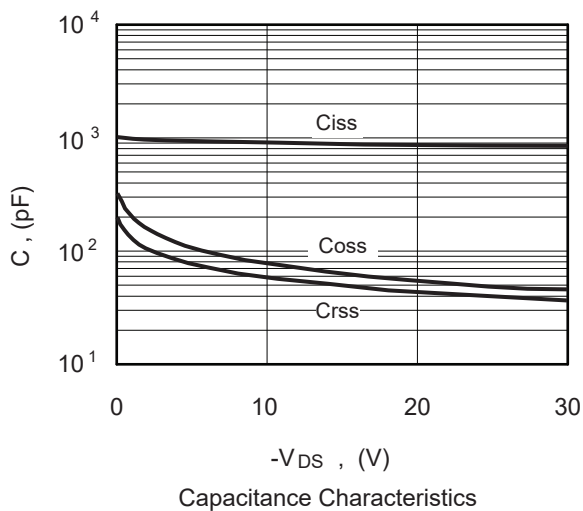
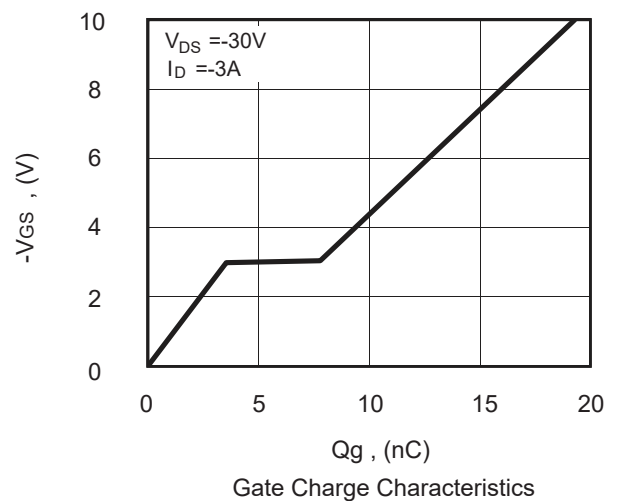
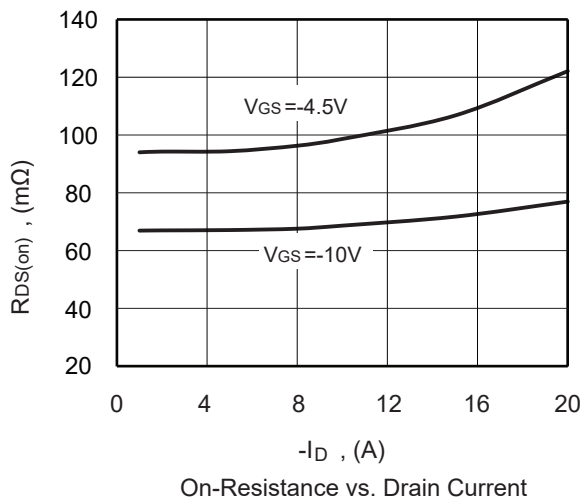
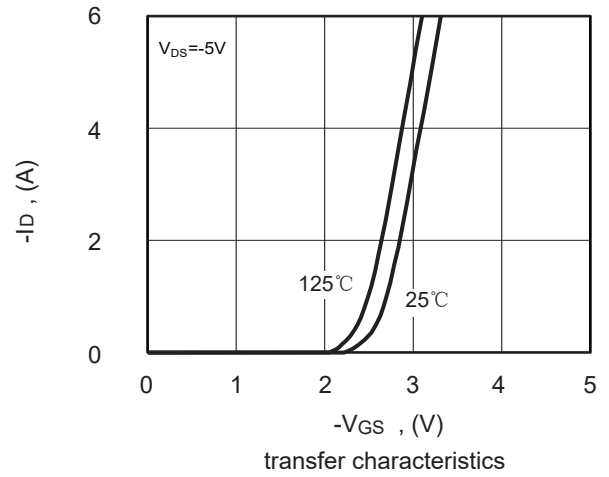
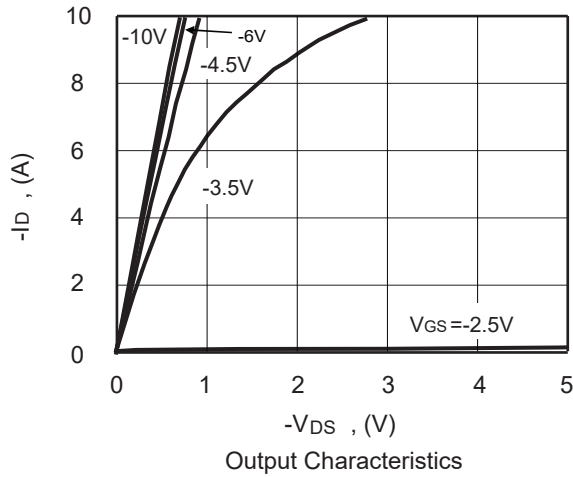
1.The EAS data shows Max. rating . The test condition is $V_{DD}=-50V$, $V_{GS}=-10V$, $L=0.5\text{mH}$, $I_{AS}=-13A$.

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

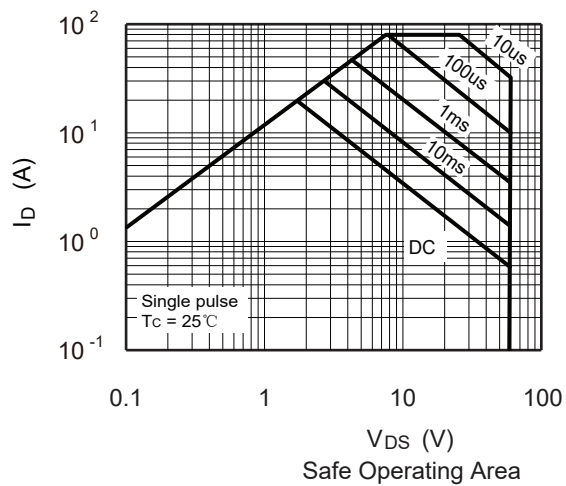
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Cmos reserves the right to improve product design , functions and reliability without notice. Please refer to the latest version of specification.

Typical Characteristics



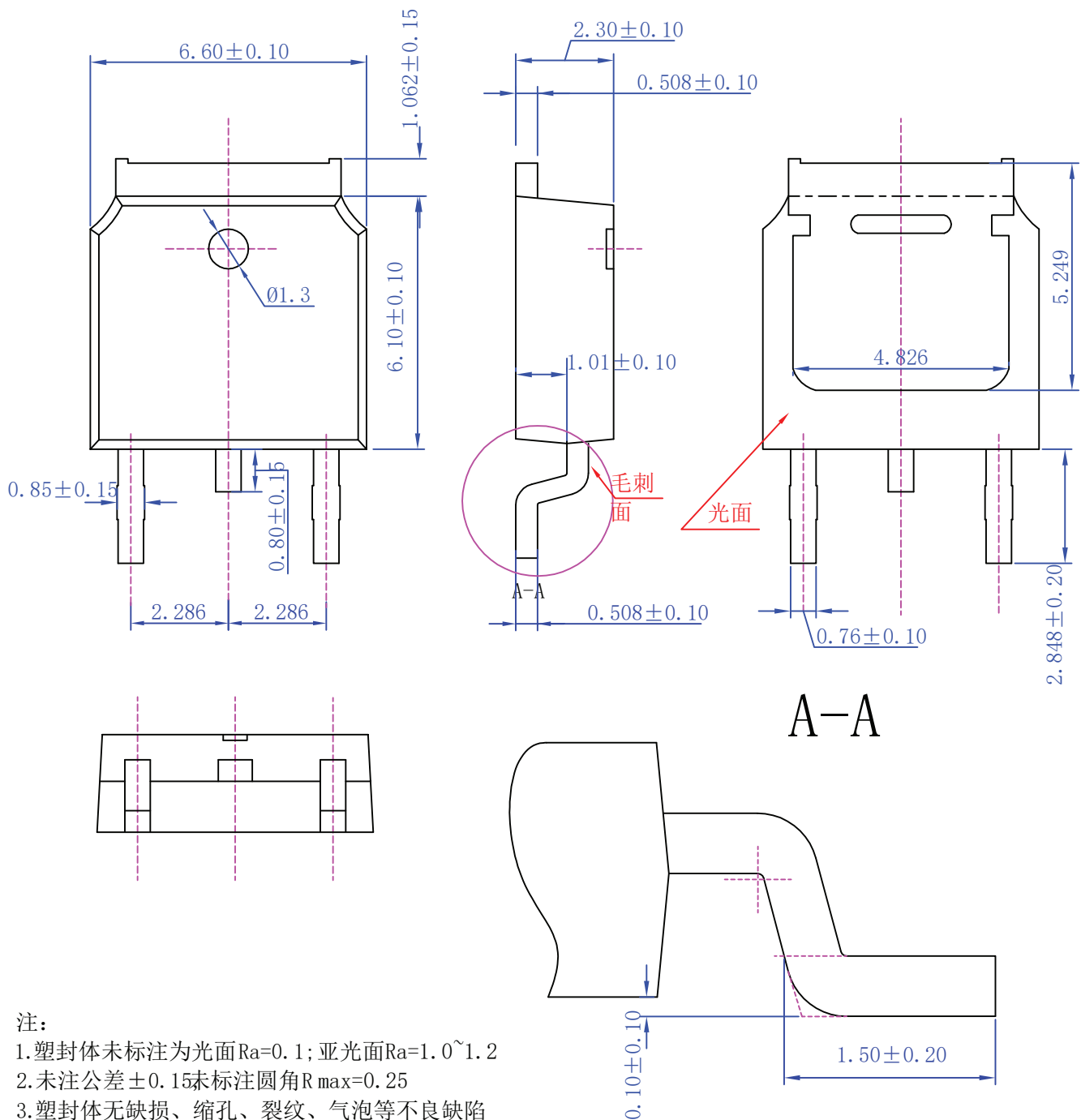
Characteristics



Package Dimension

TO-252

Unit :mm



注:

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

