

General Description

These P-Channel enhancement mode power field effect transistors use advanced trench technology and design to provide excellent RDS(ON) . This device is suitable for use as a load switch or in PWM applications.

Features

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

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	-80	A
$I_D@T_C=100^\circ C$	Continuous Drain Current	-56	A
I_{DM}	Pulsed Drain Current	-320	A
EAS	Single Pulse Avalanche Energy ¹	264	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	135	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	50	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.93	°C/W

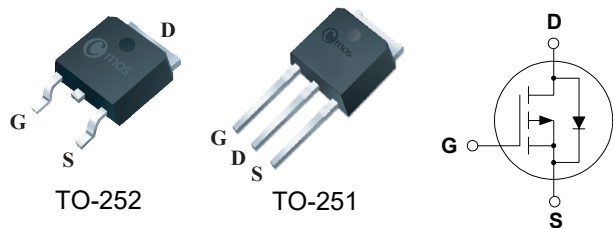
Product Summary

BVDSS	R _{DS(on)} max.	ID
-60V	15mΩ	-80A

Applications

- DC-DC Converters
- Load Switches
- BLDC Motor driver

TO-252 / 251 Pin Configuration



Type	Package	Marking
CMD80P06A	TO-252	CMD80P06A
CMU80P06A	TO-251	CMU80P06A

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 =-250uA	-60	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =-10V , I _D =-28A	---	13	15	mΩ
		V _{GS} =-4.5V , I _D =-20A	---	16	20	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =-250uA	-1.0	---	-3.0	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-60V, V _{GS} =0V , T _J =25°C	---	---	-1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =-10V , I _D =-20A	---	24	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	46	---	Ω
Q _g	Total Gate Charge	V _{DD} =-30V , I _D =-50A V _{GS} =-10V	---	110	---	nC
Q _{gs}	Gate-Source Charge		---	20	---	
Q _{gd}	Gate-Drain Charge		---	28	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =-30V, V _{GS} =-10V , R _L =0.6Ω R _G =6Ω , I _D =-50A	---	15	---	ns
T _r	Rise Time		---	70	---	
T _{d(off)}	Turn-Off Delay Time		---	175	---	
T _f	Fall Time		---	175	---	
C _{iss}	Input Capacitance	V _{DS} =-25V, V _{GS} =0V , f=1MHz	---	5800	---	pF
C _{oss}	Output Capacitance		---	290	---	
C _{rss}	Reverse Transfer Capacitance		---	240	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	-80	A
I _{SM}	Pulsed Source Current		---	---	-320	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _F =-28A	---	-0.89	-1.5	V

Note :

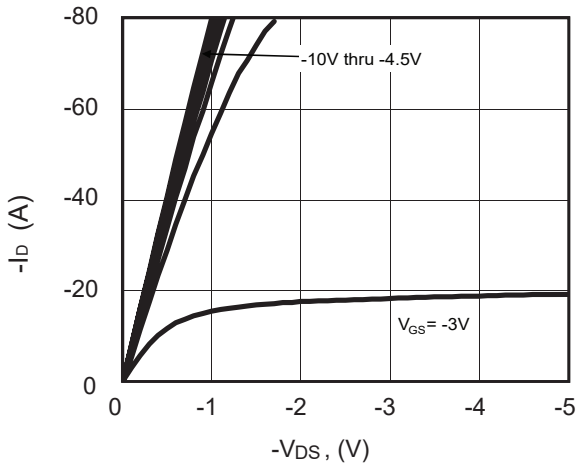
1.The EAS data shows Max. rating . The test condition is V_{DD}=-30V , V_{GS}=-10V , L=0.5mH , I_{AS}=-32.5A.

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

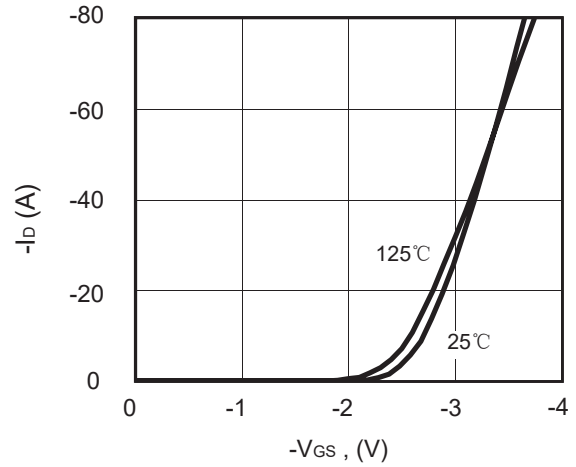
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Cmos reserves the right to improve product design ,functions and reliability without notice.Please refer to the latest version of specification.

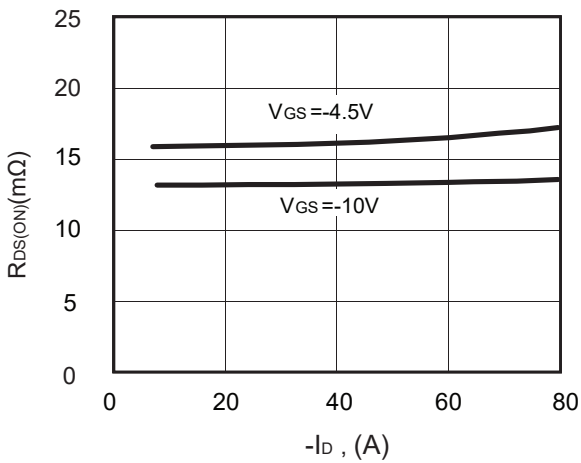
Typical Characteristics



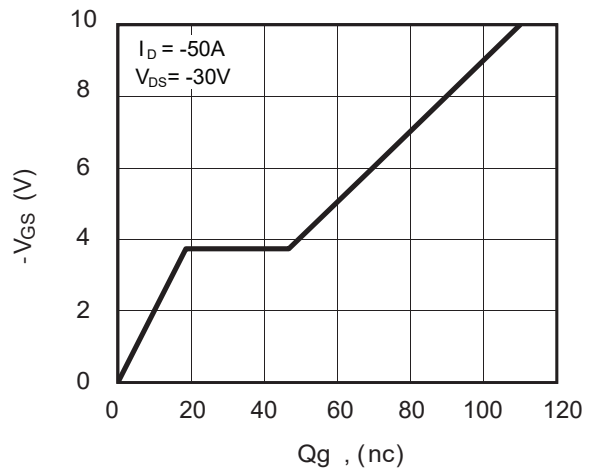
On-Region Characteristics



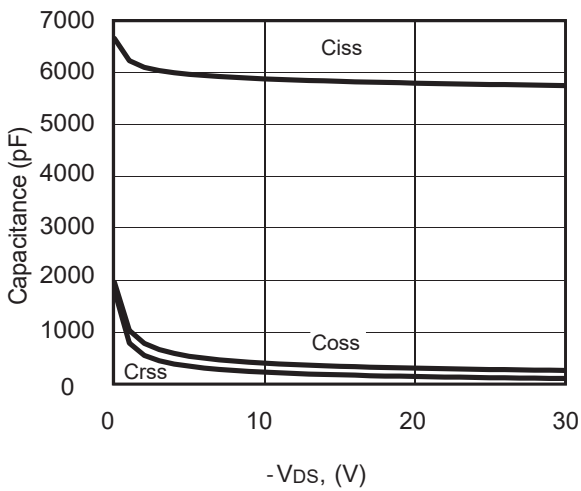
transfer characteristics



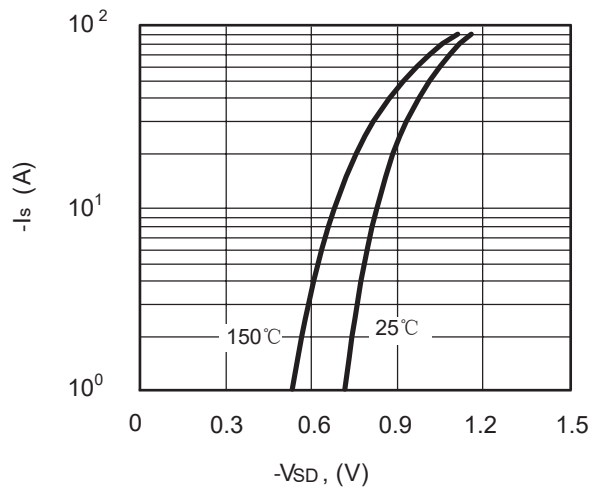
On-Resistance vs. Drain Current



Gate Charge Characteristics



Capacitance Characteristics

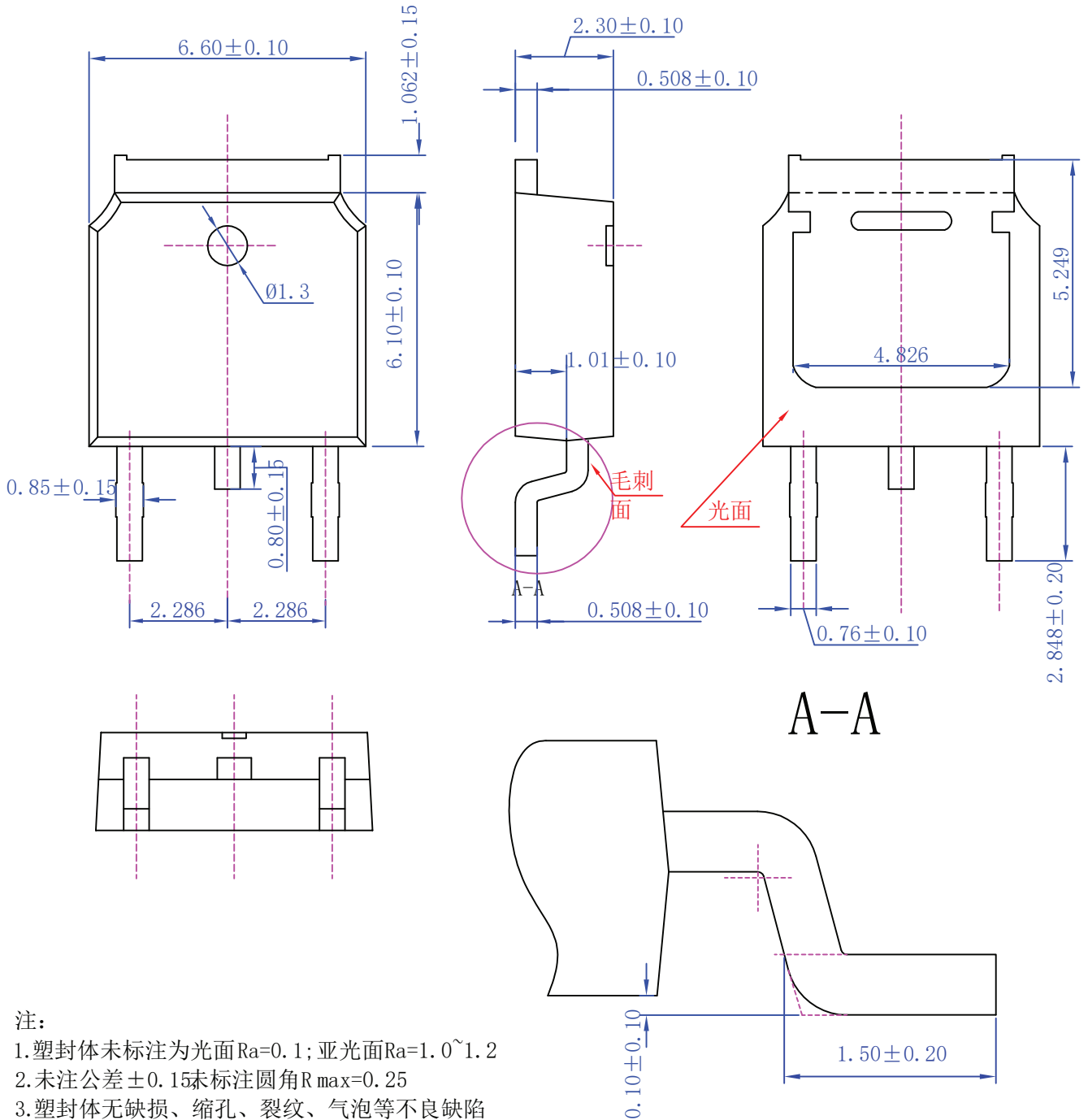


Body Diode Forward Voltage Variation with Source Current and Temperature

Package Dimension

TO-252

Unit :mm

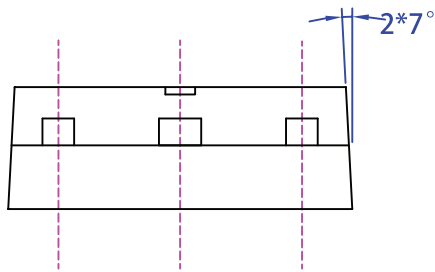
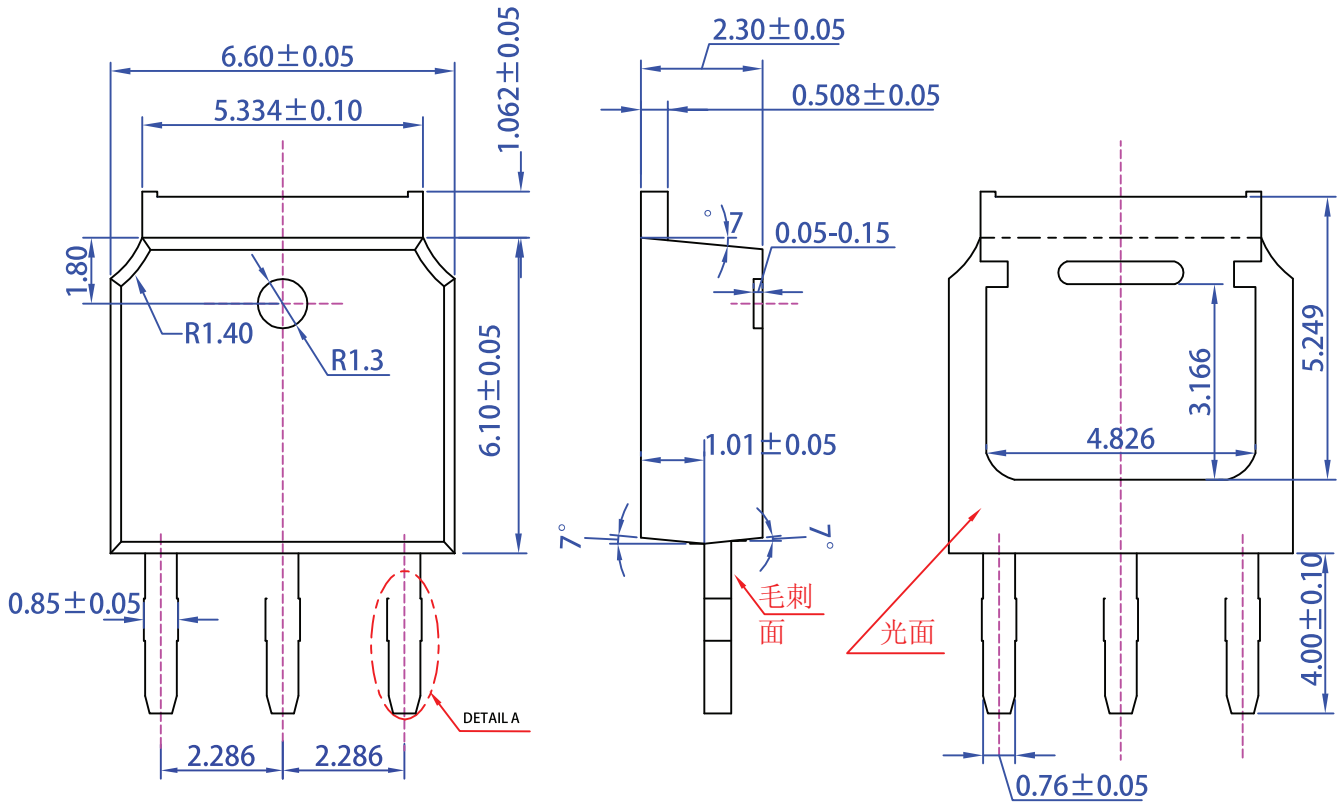


- 注:
1. 塑封体未标注为光面Ra=0.1; 亚光面Ra=1.0~1.2
 2. 未注公差 ± 0.15 未标注圆角R max=0.25
 3. 塑封体无缺损、缩孔、裂纹、气泡等不良缺陷
 4. 标注单位mm
 5. 顶针孔不允许凸出塑封体表面

Package Dimension

TO-251A

Unit :mm



DETAIL A
0<A1 or A2<0.05

