CMD830A/CMU830A

500V, 1.4Ω typ., 4.5A N-Channel MOSFET

General Description

The 830A have been fabricated using an advanced high voltage MOSFET process that is designed to deliver high levels of performance and robustness in popular AC-DC applications.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
500V	1.6Ω	4.5A

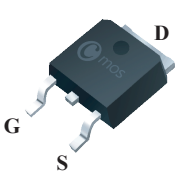
Applications

- Power Supply
- PFC
- Ballast

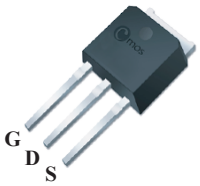
Features

- 100% avalanche tested
- Improved dv/dt capability
- RoHS Compliant

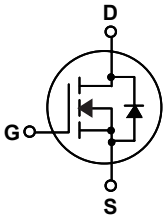
TO-252/251 Pin Configuration



TO-252
(CMD830A)



TO-251
(CMU830A)



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	500	V
V_{GS}	Gate-Source Voltage	±30	V
I_D@T_C=25℃	Continuous Drain Current	4.5	A
I_D@T_C=100℃	Continuous Drain Current	2.9	A
I_{DM}	Pulsed Drain Current	18	A
EAS	Single Pulse Avalanche Energy[1]	500	mJ
P_D@T_C=25℃	Total Power Dissipation	50	W
T_J,T_{STG}	Operating and Storage Temperature Range	-55 to 150	℃
T_L	Maximum lead temperature for soldering purposes, 1/8" from case for 5 seconds	300	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62.5	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	2.5	℃/W

Electrical Characteristics(T_J=25℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	500	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=2A	---	1.4	1.6	Ω
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=500V , V_{GS} =0V	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS} =±30V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=20V , I_D=2A	---	4	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	12	---	Ω
Q_g	Total Gate Charge	I_D=4.5A V_{DS}=400V V_{GS}=10V	---	16	---	nC
Q_{gs}	Gate-Source Charge		---	5.5	---	
Q_{gd}	Gate-Drain Charge		---	4	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=250V R_{GEN}=25Ω I_D =4.5A	---	12	---	ns
T_r	Rise Time		---	46	---	
$T_{d(off)}$	Turn-Off Delay Time		---	50	---	
T_f	Fall Time		---	48	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	750	---	pF
C_{oss}	Output Capacitance		---	65	---	
C_{rss}	Reverse Transfer Capacitance		---	14	---	

Diode Characteristics

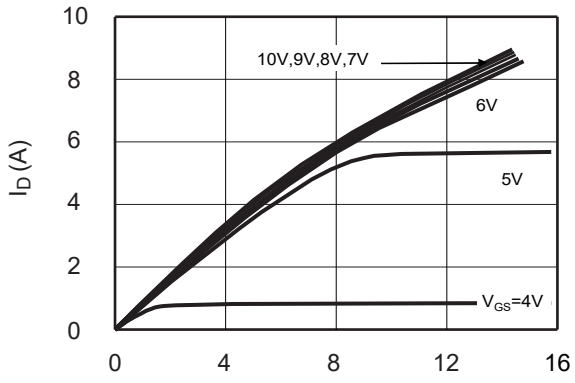
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	4.5	A
I_{SM}	Pulsed Source Current		---	---	18	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=5A ,T_J=25℃	---	0.87	1.2	V

Note :

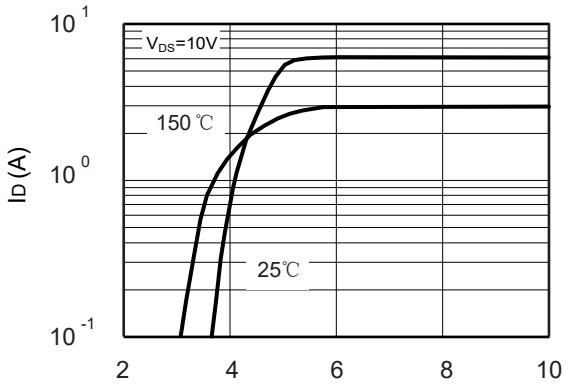
1.The EAS data shows Max. rating . The test condition is V_{DD}=100V , V_{GS}=10V , L=10mH , I_{AS}=10A.

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

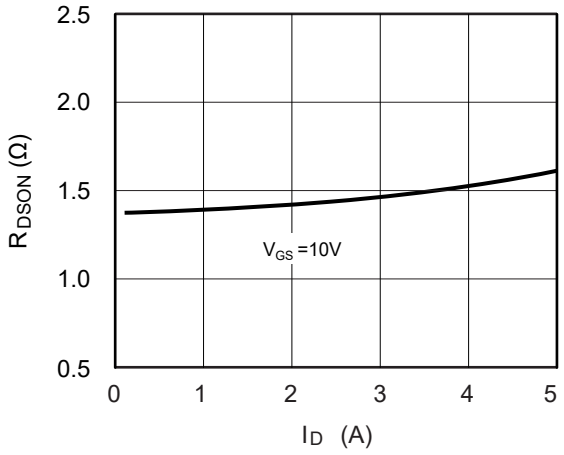
Typical Characteristics



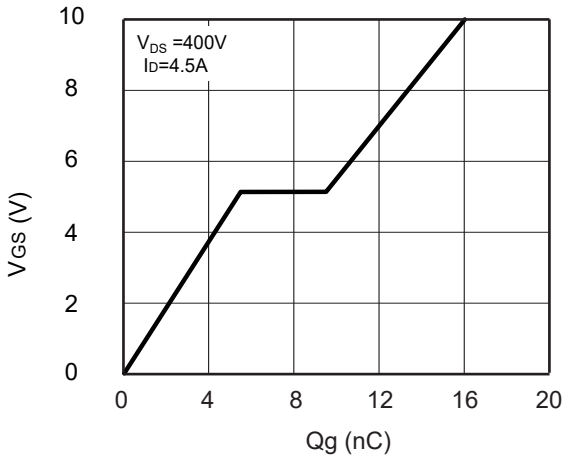
Output Characteristics



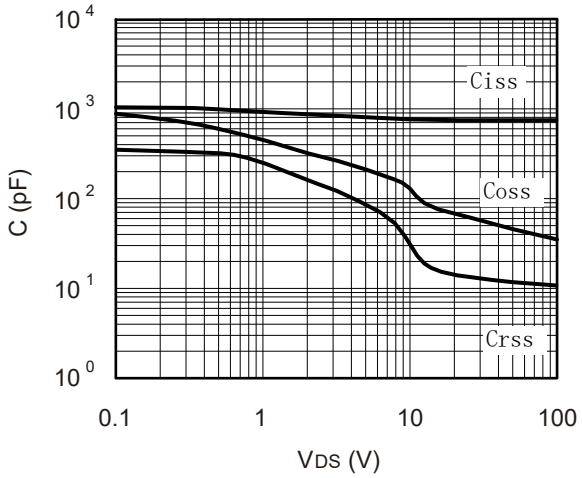
transfer characteristics



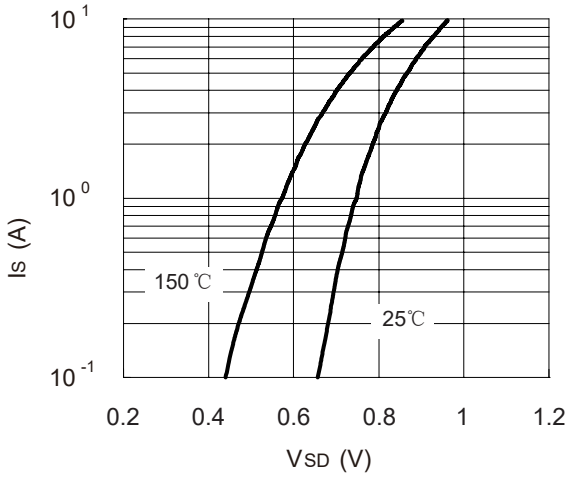
On-Resistance vs. Drain Current



Gate charge vs gate-source voltage



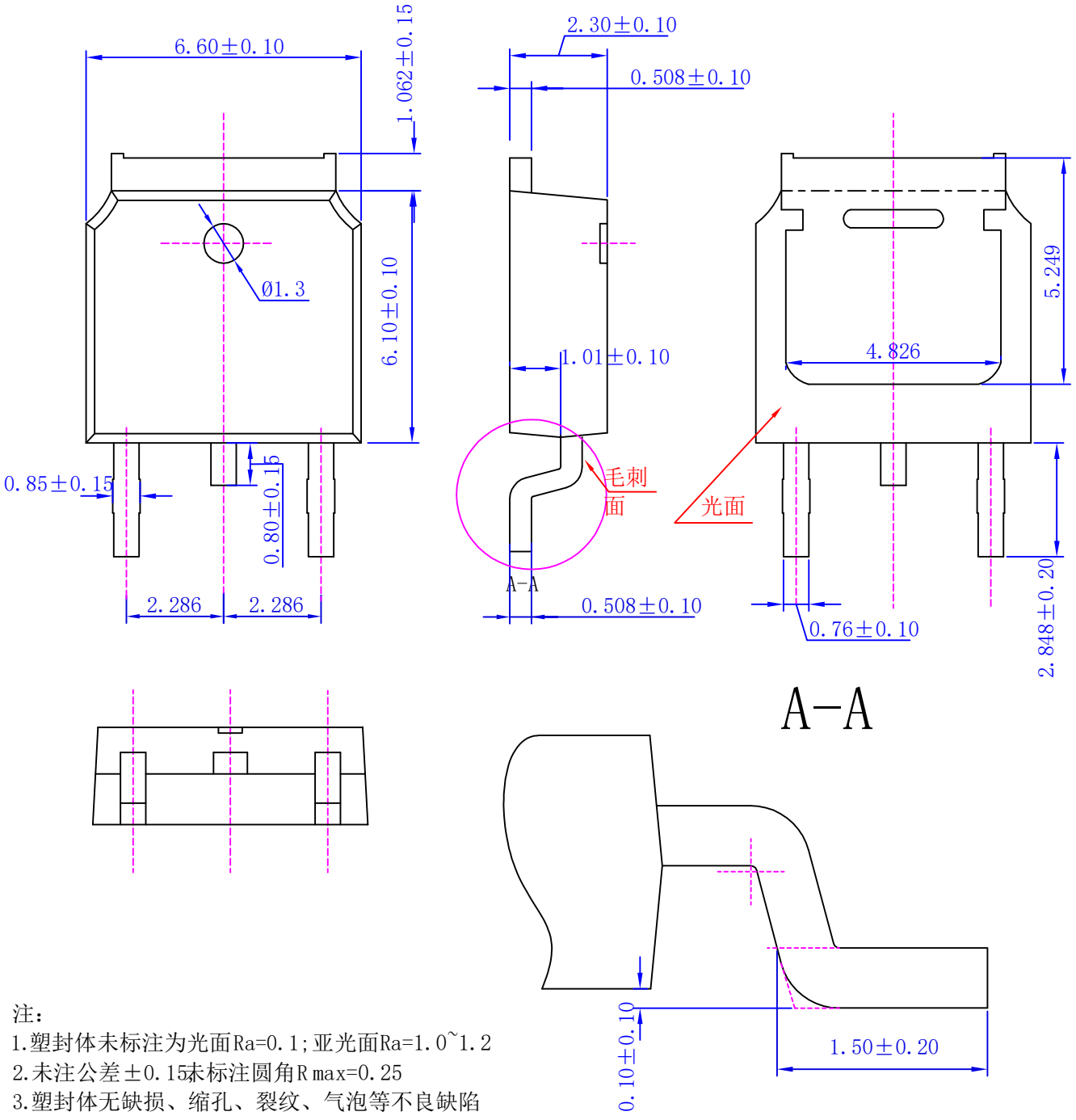
Capacitance Characteristics



Body-Diode 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=1.0~1.2
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

