

General Description

The 240A power MOSFET utilizes advanced trench technology to achieve excellent $R_{DS(on)}$, making it suitable for high-current switching applications.

Features

- Low On-Resistance
- 100% avalanche tested
- Simple Drive Requirements
- RoHS Compliant

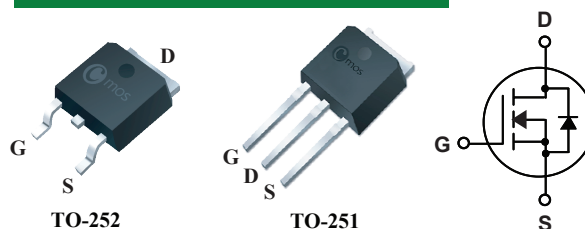
Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
40V	4mΩ	80A

Applications

- DC-DC Converters
- Motor Driver
- Powertrain Management

TO-252/251 Pin Configuration



Type	Package	Marking
CMD240A	TO-252	CMD240A
CMU240A	TO-251	CMU240A

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	40	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	80	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	55	A
I_{DM}	Pulsed Drain Current	320	A
EAS	Single Pulse Avalanche Energy ¹	780	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	160	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	---	54	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.78	°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 =250uA	40	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V, I _D =30A	---	3.3	4	mΩ
		V _{GS} =4.5V, I _D =20A	---	4.5	5.5	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1	---	3	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =30V, 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} =15V, I _D =11A	---	20	---	S
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	2.3	---	Ω
Q _g	Total Gate Charge	V _{DS} =32V, V _{GS} =5V, I _D =30A	---	75	---	nC
Q _{gs}	Gate-Source Charge		---	23	---	
Q _{gd}	Gate-Drain Charge		---	35	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =20V, V _{GS} =10V, R _G =4.7Ω I _D =30A	---	20	---	ns
T _r	Rise Time		---	50	---	
T _{d(off)}	Turn-Off Delay Time		---	140	---	
T _f	Fall Time		---	65	---	
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	---	6300	---	pF
C _{oss}	Output Capacitance		---	470	---	
C _{rss}	Reverse Transfer Capacitance		---	420	---	

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 _S =28 A, T _J =25°C	---	0.84	1.3	V

Note :

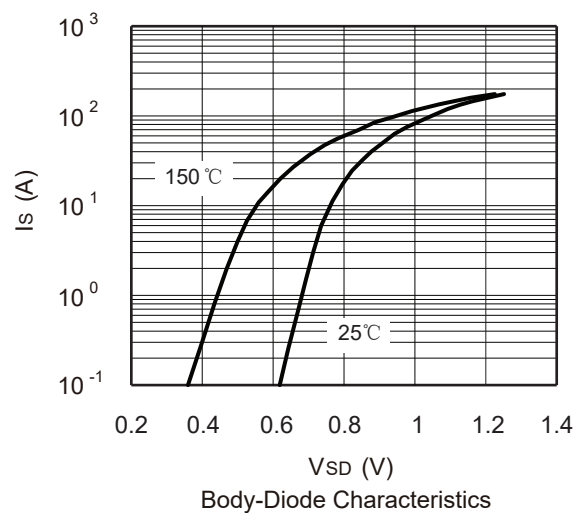
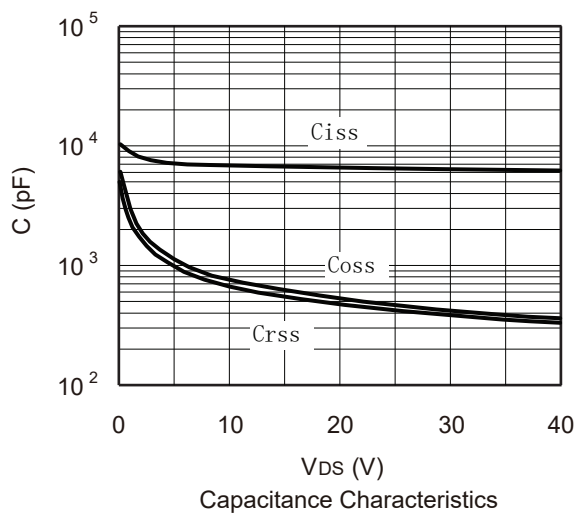
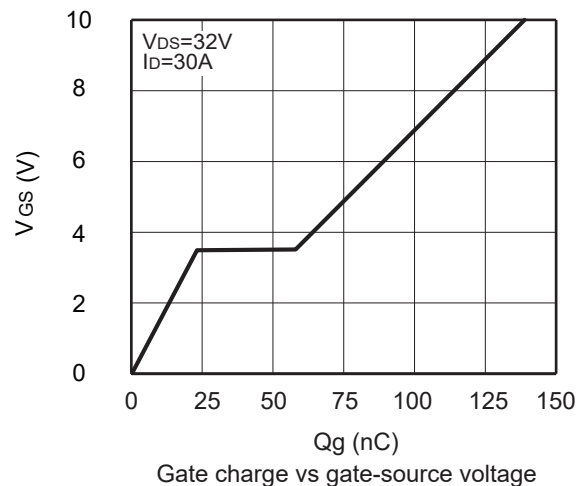
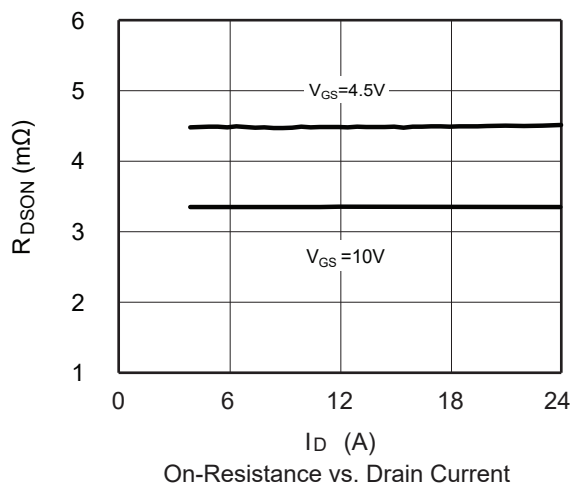
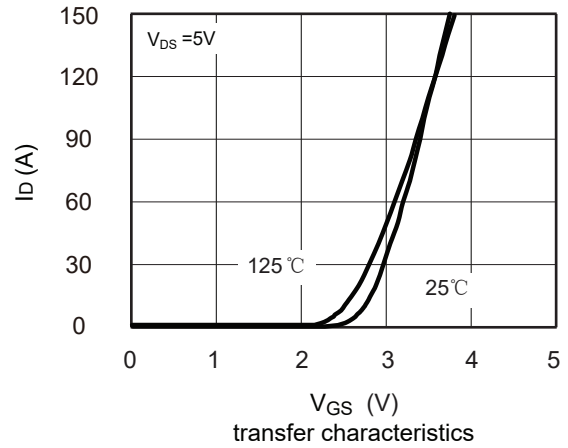
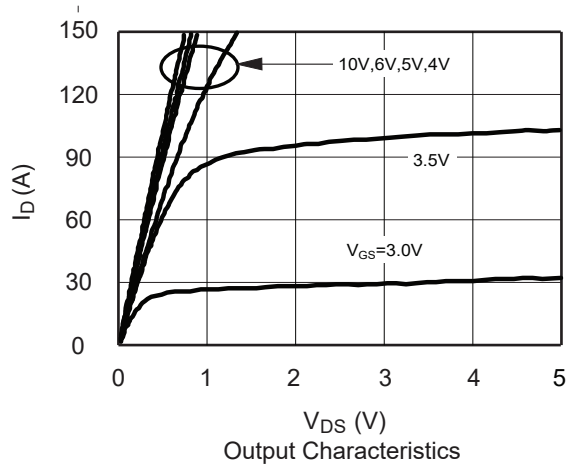
1.The EAS data shows Max. rating . The test condition is V_{DD}=35V, V_{GS}=10V, L=1mH, I_{AS}=39.5A.

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.

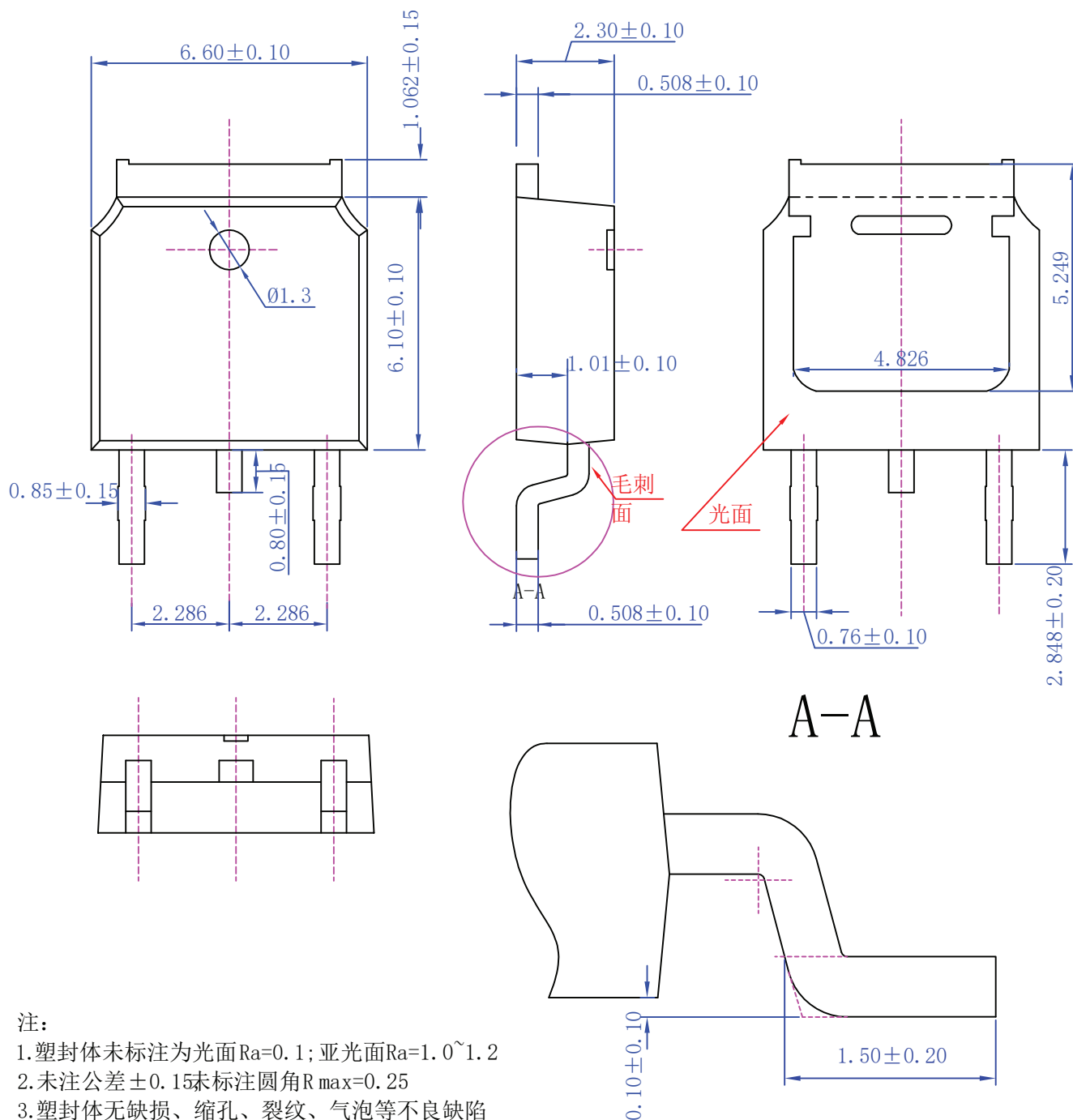
Typical Characteristics



Package Dimension

TO-252

Unit :mm



Package Dimension

TO-251A

Unit :mm

