

General Description

The CMD240 and CMU240 uses Trench MOSFET technology that is uniquely optimized to provide the most efficient high frequency switching performance. Power losses are minimized due to an extremely low combination of RDS(ON) and Crss.

Features

- RDS(ON)<4.2mΩ @ VGS=10V
- RDS(ON)<6.5mΩ @ VGS=4.5V
- Reliable and Rugged
- Lead Free

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	40	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^{\circ}C^1$	Continuous Drain Current	80	A
$I_D@T_C=100^{\circ}C^1$	Continuous Drain Current	55	A
I_{DM}^2	Pulsed Drain Current	320	A
E_{AS}^3	Single Pulse Avalanche Energy	361	mJ
$P_D@T_C=25^{\circ}C$	Total Power Dissipation	150	W
T_{STG}	Storage Temperature Range	-55 to 175	°C
T_J	Operating Junction Temperature Range	-55 to 175	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient (Steady-State)	---	50	°C/W
$R_{\theta JC}$	Thermal Resistance Junction -Case(Steady-State)	---	1	°C/W

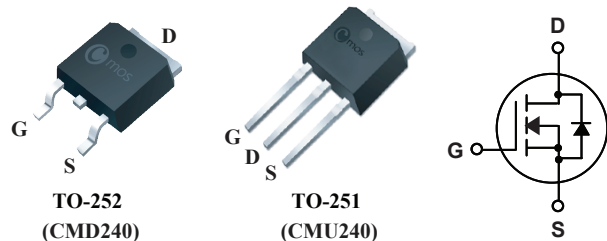
Product Summary

BVDSS	RDS(on) max.	ID
40V	4mΩ	80A

Applications

- Power Management in Note book
- LCD Display inverter
- DC/DC converter
- Load Switch

TO-252/251 Pin Configuration



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	---	3.7	4	mΩ
		V _{GS} =4.5V , I _D =20A	---	4.7	6.5	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1	---	3	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =32V , V _{GS} =0V , T _J =25°C	---	---	1	uA
		V _{DS} =32V , V _{GS} =0V , T _J =55°C	---	---	5	
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±20V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =0V , I _D =20A	---	20	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	7.2	---	Ω
Q _g	Total Gate Charge	V _{DS} =20V , V _{GS} =10V , I _D =20A	---	45	---	nC
Q _{gs}	Gate-Source Charge		---	9	---	
Q _{gd}	Gate-Drain Charge		---	7	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =20V , V _{GS} =10V , R _G =3Ω R _L =1Ω	---	15	---	ns
T _r	Rise Time		---	12	---	
T _{d(off)}	Turn-Off Delay Time		---	40	---	
T _f	Fall Time		---	11	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	5300	---	pF
C _{oss}	Output Capacitance		---	550	---	
C _{rss}	Reverse Transfer Capacitance		---	380	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _{SD} =30A	---	---	1	V

Note :

1. The maximum current rating is package limited.
2. Repetitive rating, pulse width limited by junction temperature T_J(MAX)=175°C. Ratings are based on low frequency and duty cycles to keep initial T_J =25°C.
3. The EAS data shows Max. rating . The test condition is V_{DD}=30V , V_{GS}=10V , L=0.5mH , I_{AS}=38A.

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

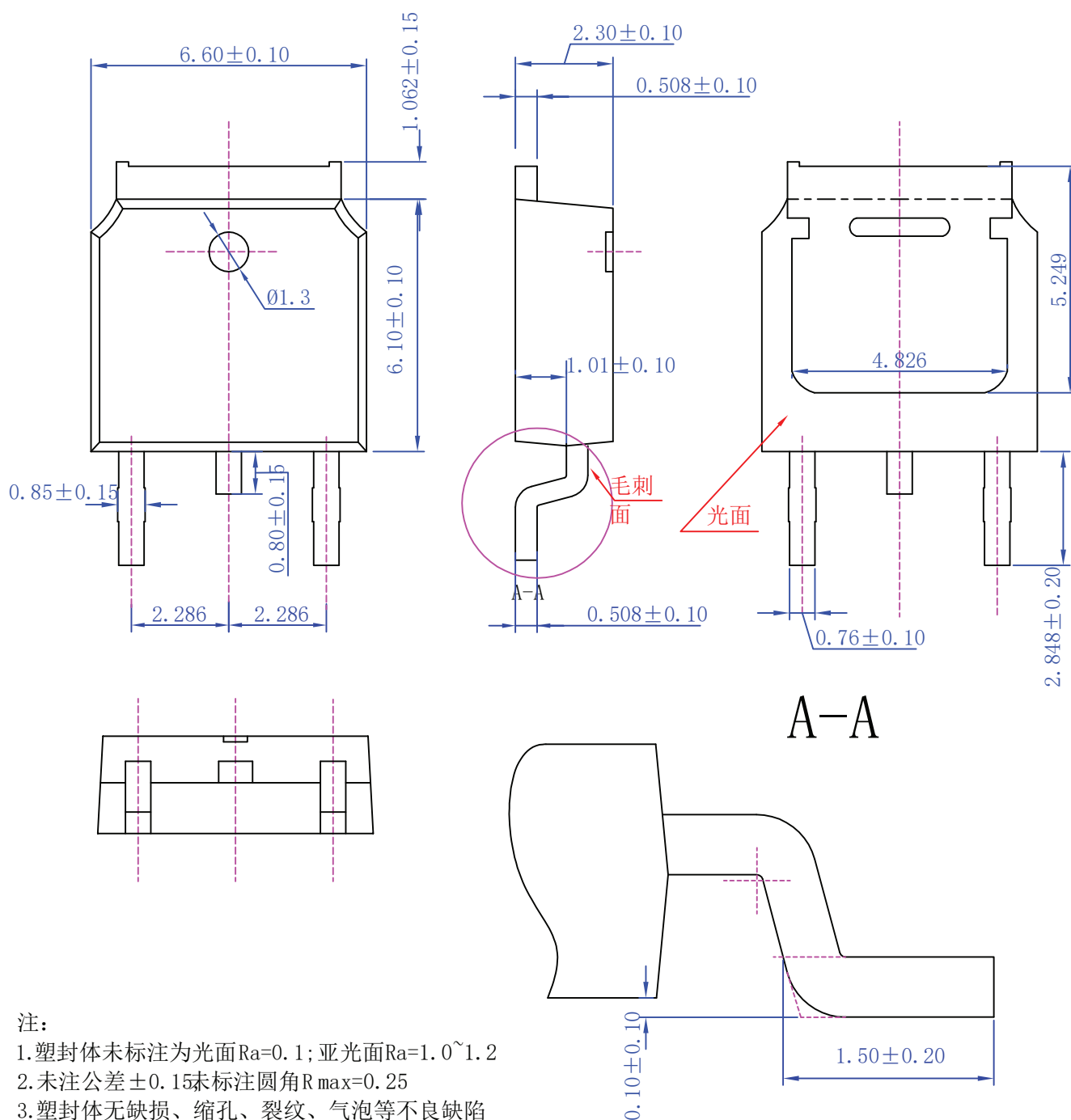
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Cmos reserves the right to improve product design ,functions and reliability without notice.Please refer to the latest version of specification.

Package Dimension

TO-252

Unit :mm



Package Dimension

TO-251A

Unit :mm

