CMD25P15/CMU25P15

-150V, 150mΩ typ., -25A P-Channel MOSFET

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.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
-150V	170mΩ	-25A

Applications

- Active Clamp Switch
- Load Switch
- Portable equipment and battery powered systems

Features

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

TO-252/251 Pin Configuration



TO-252 TO-251

Type	Package	Marking
CMD25P15	TO-252	CMD25P15
CMU25P15	TO-251	CMU25P15

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-150	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25℃	Continuous Drain Current	-25	A
I_D@T_C=100℃	Continuous Drain Current	-17.5	A
I_{DM}	Pulsed Drain Current	-100	A
EAS	Single Pulse Avalanche Energy[1]	231	mJ
P_D@T_C=25℃	Total Power Dissipation	90	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Junction-to-Ambient	---	62.5	℃/W
$R_{\theta JC}$	Junction-to-Case (Drain)	---	1.39	℃/W

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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	-150	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V, I_D=-12.5A	---	150	170	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250uA	-2	---	-4	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-150V, V_{GS}=0V , T_J=25℃	---	---	-1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS} = ±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=-10V , I_D=-12.5A	---	23	---	S
Q_g	Total Gate Charge	V_{DS}=-80V , I_D=-12.5A V_{GS}=-10V	---	60	---	nC
Q_{gs}	Gate-Source Charge		---	9	---	
Q_{gd}	Gate-Drain Charge		---	17	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=-50V, V_{GS}=-10V, R_G=3.3Ω I_D=-12.5A , R_D=4.2Ω	---	11	---	ns
T_r	Rise Time		---	26	---	
$T_{d(off)}$	Turn-Off Delay Time		---	67	---	
T_f	Fall Time		---	60	---	
C_{iss}	Input Capacitance	V_{DS}=-25V, V_{GS}=0V , f=1MHz	---	4200	---	pF
C_{oss}	Output Capacitance		---	120	---	
C_{rss}	Reverse Transfer Capacitance		---	110	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	-25	A
I_{SM}	Pulsed Source Current		---	---	-100	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=-25A	---	-0.9	-1.2	V

Notes:

1.The EAS data shows Max. rating .The test condition is V_{DS}=-80V , V_{GS}=-10V , L=1mH , I_{AS}=-21.5A.

This product has been designed and qualified for the counsumer market.
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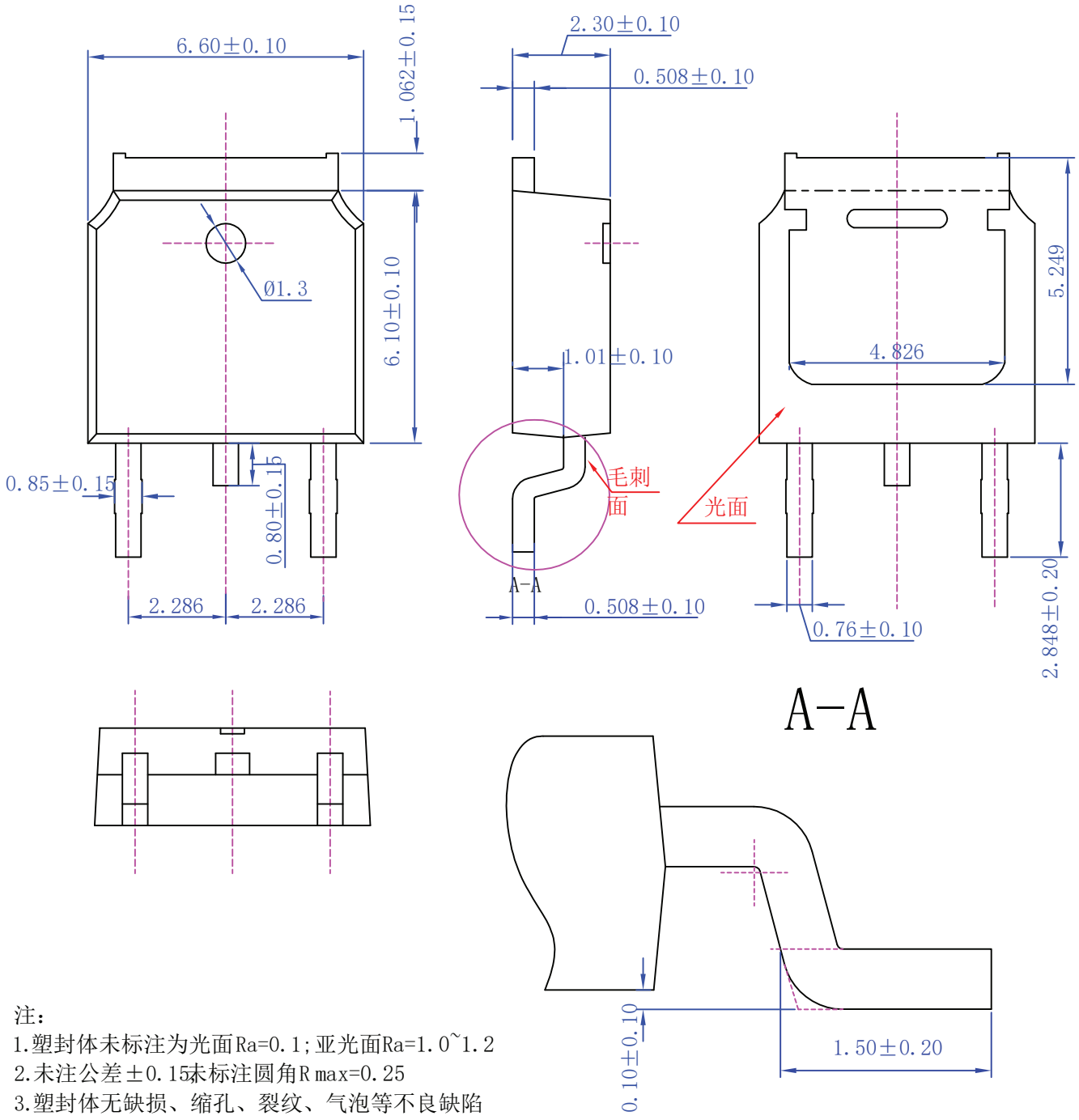
Package Dimension

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

