

General Description

The 75N06 uses advanced trench technology and design to provide excellent RDS(ON) with low gate charge. It can be used in a wide variety of applications

Features

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

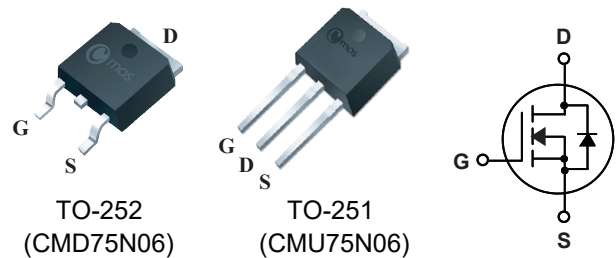
Product Summary

BVDSS	R _{DS(on)} max.	ID
60V	14mΩ	75A

Applications

- Power switching application
- Uninterruptible Power Supply
- Hard Switched and High Frequency Circuits

TO-252/251 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Value	Units
V _{DS}	Drain-Source Voltage	60	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current	75	A
I _D @T _C =100°C	Continuous Drain Current	50	A
I _{DM}	Pulsed Drain Current ¹	230	A
EAS	Single Pulse Avalanche Energy ²	338	mJ
P _D @T _C =25°C	Total Power Dissipation	110	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 _{θJA}	Thermal Resistance Junction-ambient	---	52	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	1.14	°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	60	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =28A	---	11	14	mΩ
		V _{GS} =4.5V , I _D =25A	---	12	16	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1	---	2.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =48V , V _{GS} =0V	---	---	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	---	21	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	6	---	Ω
Q _g	Total Gate Charge	I _D =60A V _{DS} =40V V _{GS} = 10V	---	110	---	nC
Q _{gs}	Gate-Source Charge		---	15	---	
Q _{gd}	Gate-Drain Charge		---	30	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =30V	---	50	---	ns
T _r	Rise Time	R _G =4.7Ω	---	155	---	
T _{d(off)}	Turn-Off Delay Time	V _{GS} =4.5V	---	45	---	
T _f	Fall Time	I _D =30A	---	220	---	
C _{iss}	Input Capacitance	V _{DS} =25V , V _{GS} =0V , f=1MHz	---	3600	---	pF
C _{oss}	Output Capacitance		---	260	---	
C _{rss}	Reverse Transfer Capacitance		---	180	---	

Diode Characteristics

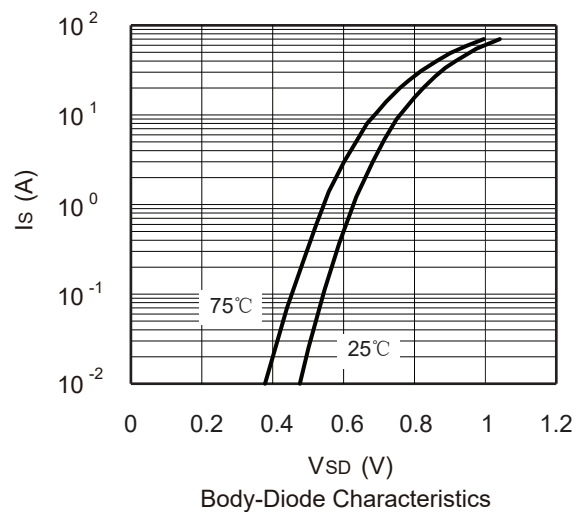
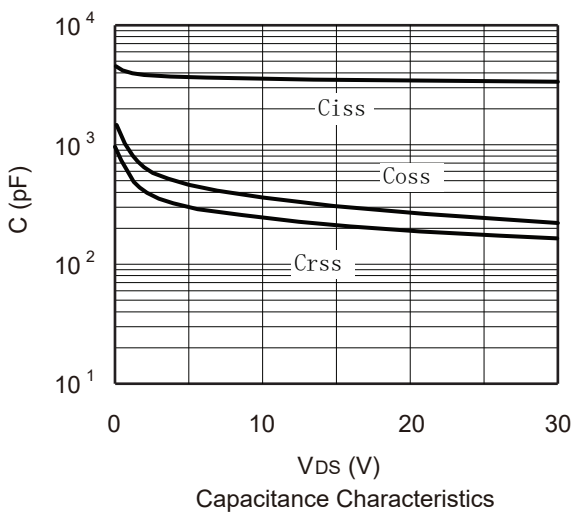
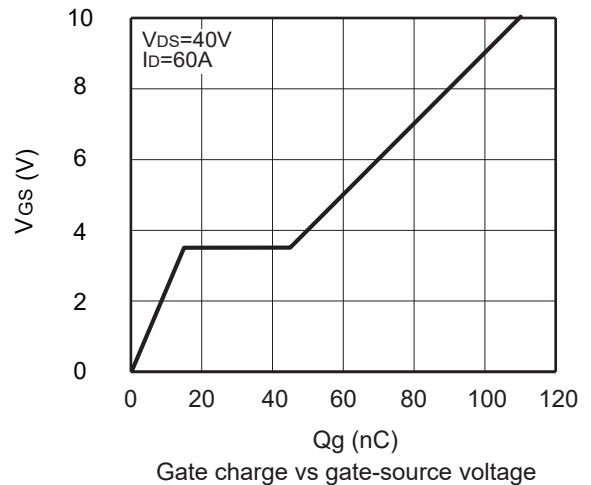
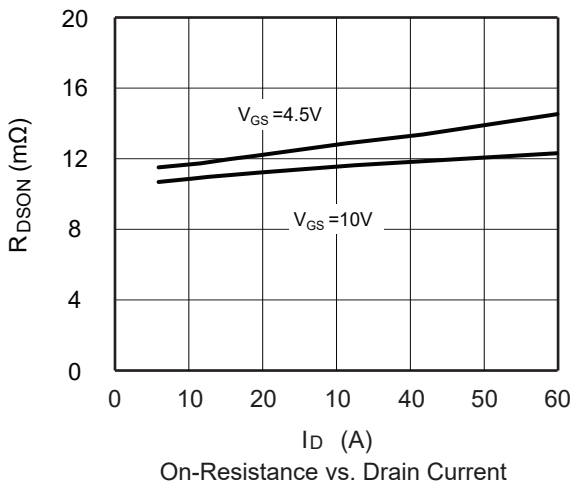
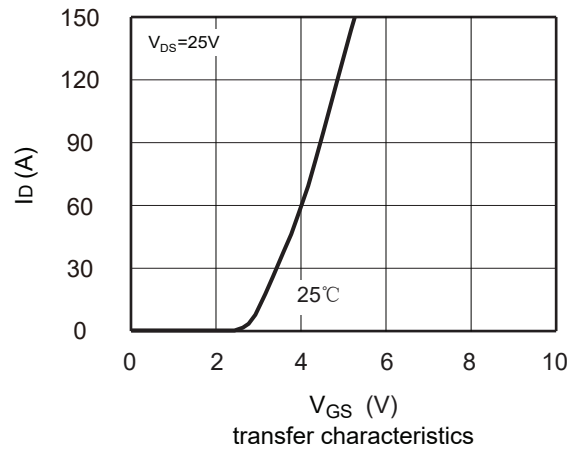
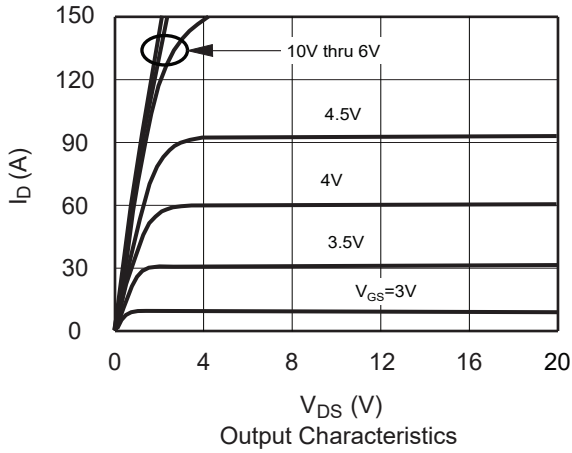
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	75	A
I _{SM}	Pulsed Source Current		---	---	230	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =28 A , T _J =25°C	---	0.86	1.2	V

Note :

- 1.Pulse width limited by safe operating area.
- 2.Starting T_J=25 °C , I_D=26A, V_{DD}= 40V, L=1mH.

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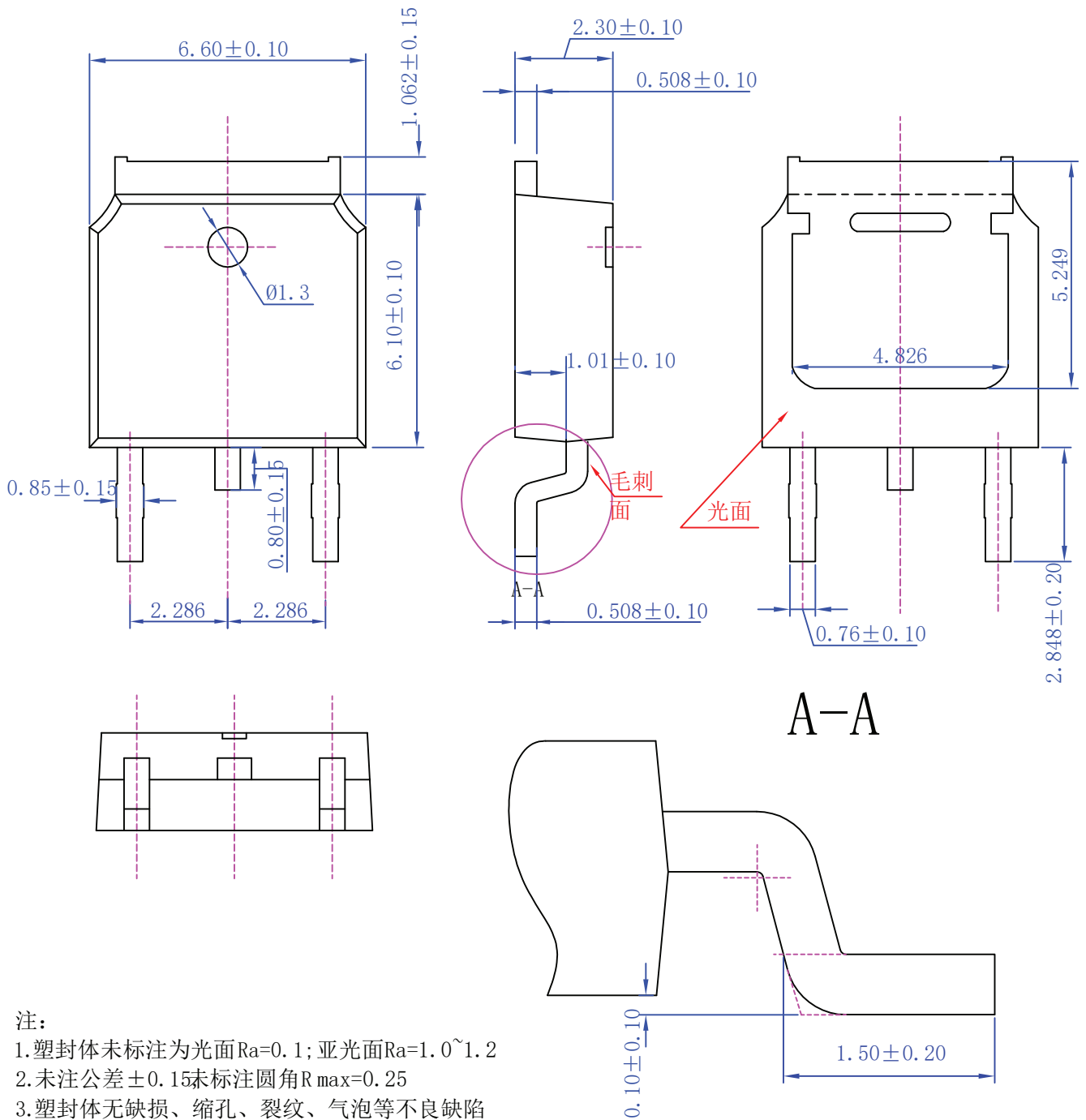
Typical Characteristics



Package Dimension

TO-252

Unit :mm

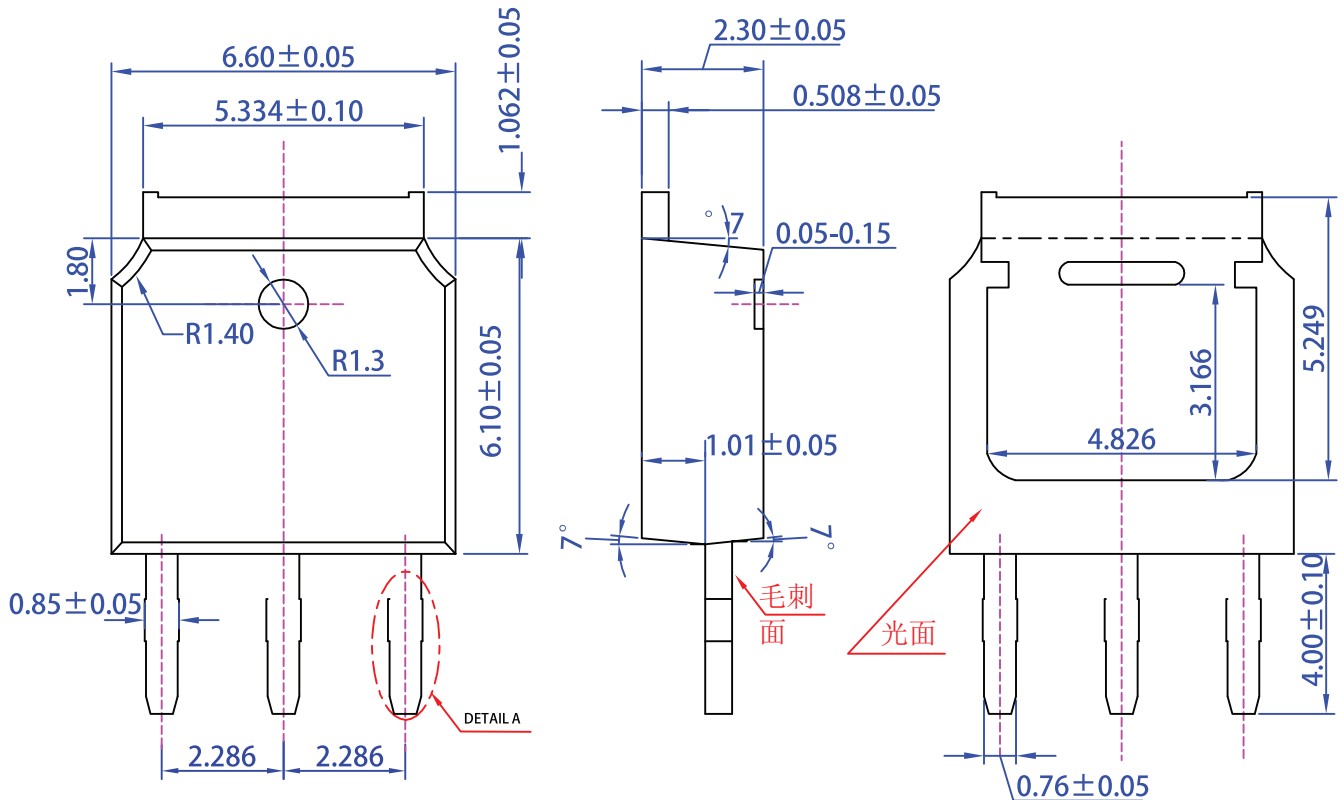


- 注:
1. 塑封体未标注为光面Ra=0.1; 亚光面Ra=1.0~1.2
 2. 未注公差±0.15未标注圆角R max=0.25
 3. 塑封体无缺损、缩孔、裂纹、气泡等不良缺陷
 4. 标注单位mm
 5. 顶针孔不允许凸出塑封体表面

Package Dimension

TO-251A

Unit :mm



DETAIL A
 $0 < A1 \text{ or } A2 < 0.05$

