

### General Description

The 3050 uses advanced trench technology to provide excellent RDS(ON). This device is ideally suited for use as a high side switch in CPU core power conversion.

### Features

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

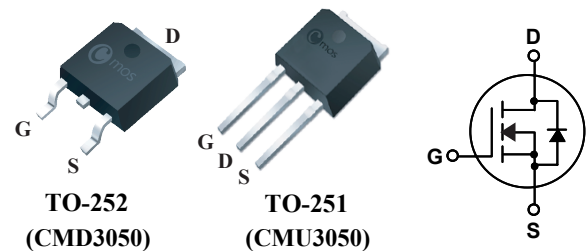
### Product Summary

BVDSS	R <sub>DS(on)</sub> max.	ID
30V	5mΩ	90A

### Applications

- DC/DC Converter
- Load Switch
- CPU Power Delivery

### TO-252/251 Pin Configuration



### Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V <sub>DS</sub>	Drain-Source Voltage	30	V
V <sub>GS</sub>	Gate-Source Voltage	±20	V
I <sub>D</sub> @T <sub>C</sub> =25°C	Continuous Drain Current	90	A
I <sub>D</sub> @T <sub>C</sub> =100°C	Continuous Drain Current	63	A
I <sub>DM</sub>	Pulsed Drain Current	360	A
EAS	Single Pulse Avalanche Energy <sup>1</sup>	113	mJ
P <sub>D</sub> @T <sub>C</sub> =25°C	Total Power Dissipation	85	W
T <sub>STG</sub>	Storage Temperature Range	-55 to 150	°C
T <sub>J</sub>	Operating Junction Temperature Range	-55 to 150	°C

### Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R <sub>θJA</sub>	Thermal Resistance Junction-ambient	---	62.5	°C/W
R <sub>θJC</sub>	Thermal Resistance Junction-case	---	1.47	°C/W

**Electrical Characteristics(T<sub>J</sub>=25°C, unless otherwise noted)**

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V , I <sub>D</sub> =250uA	30	---	---	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	V <sub>GS</sub> =10V , I <sub>D</sub> =20A	---	4.4	5	mΩ
		V <sub>GS</sub> =4.5V , I <sub>D</sub> =10A	---	7.2	9	
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250uA	1	---	3	V
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =30V , V <sub>GS</sub> =0V	---	---	1	μA
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> =±20V , V <sub>DS</sub> =0V	---	---	±100	nA
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =5V , I <sub>D</sub> =10A	---	15	---	S
R <sub>g</sub>	Gate Resistance	V <sub>DS</sub> =0V , V <sub>GS</sub> =0V , f=1MHz	---	6.0	---	Ω
Q <sub>g</sub>	Total Gate Charge	I <sub>D</sub> =20A V <sub>DS</sub> = 15V V <sub>GS</sub> = 4.5V	---	20	---	nC
Q <sub>gs</sub>	Gate-Source Charge		---	4	---	
Q <sub>gd</sub>	Gate-Drain Charge		---	8	---	
T <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DS</sub> = 15V V <sub>GS</sub> = 10V R <sub>GEN</sub> = 3Ω R <sub>L</sub> = 0.75Ω	---	6	---	ns
T <sub>r</sub>	Rise Time		---	11	---	
T <sub>d(off)</sub>	Turn-Off Delay Time		---	36	---	
T <sub>f</sub>	Fall Time		---	12	---	
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =25V , V <sub>GS</sub> =0V , f=1MHz	---	1700	---	pF
C <sub>oss</sub>	Output Capacitance		---	150	---	
C <sub>rss</sub>	Reverse Transfer Capacitance		---	135	---	

**Diode Characteristics**

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I <sub>S</sub>	Continuous Source Current	V <sub>G</sub> =V <sub>D</sub> =0V , Force Current	---	---	90	A
I <sub>SM</sub>	Pulsed Source Current		---	---	360	A
V <sub>SD</sub>	Diode Forward Voltage	V <sub>GS</sub> =0V , I <sub>S</sub> =20A , T <sub>J</sub> =25°C	---	0.86	1.2	V

Note :

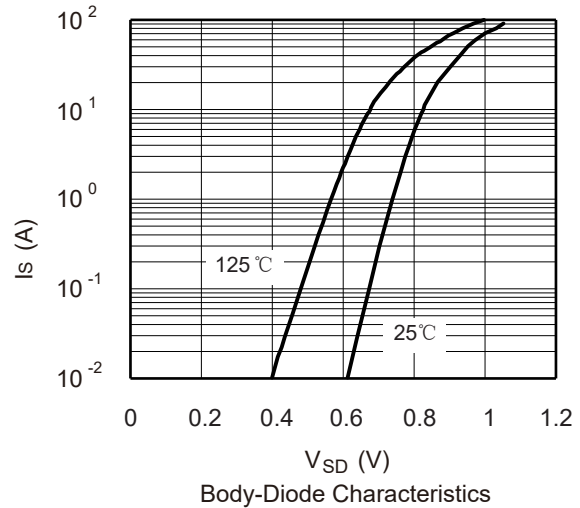
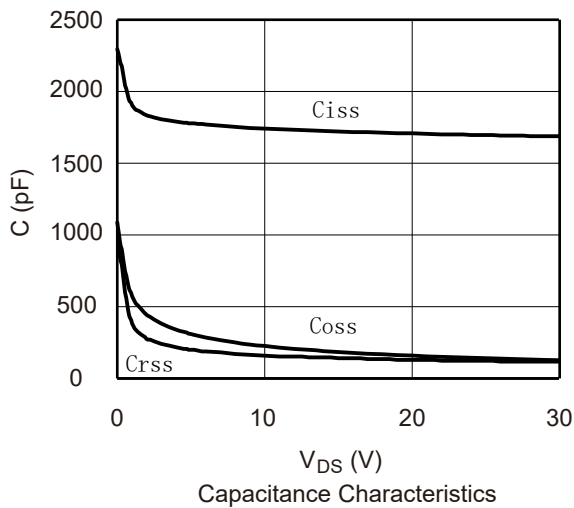
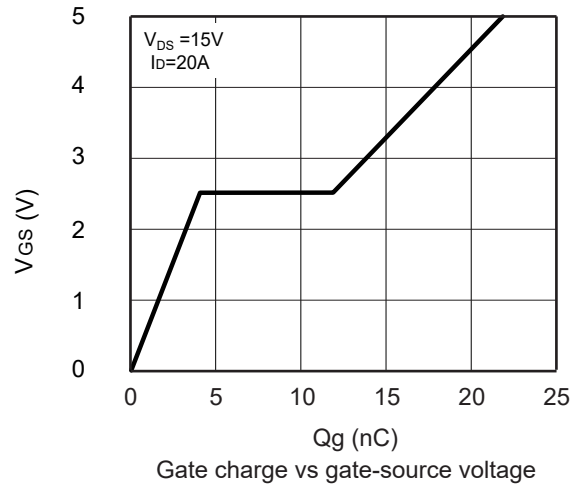
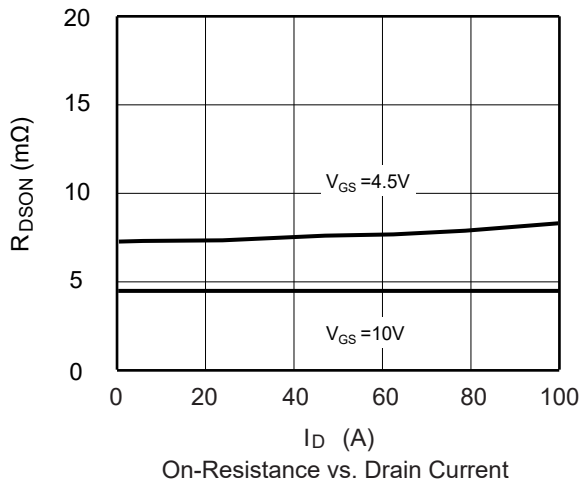
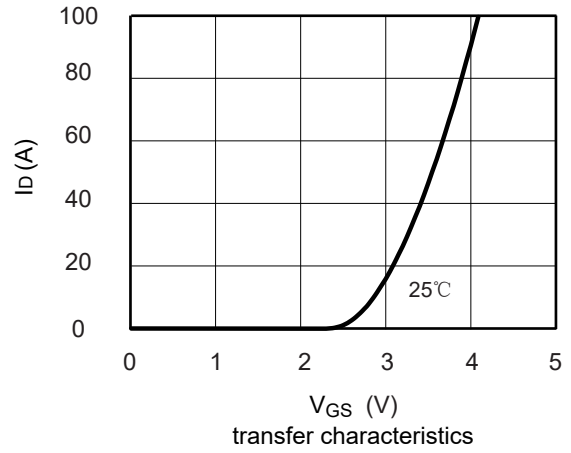
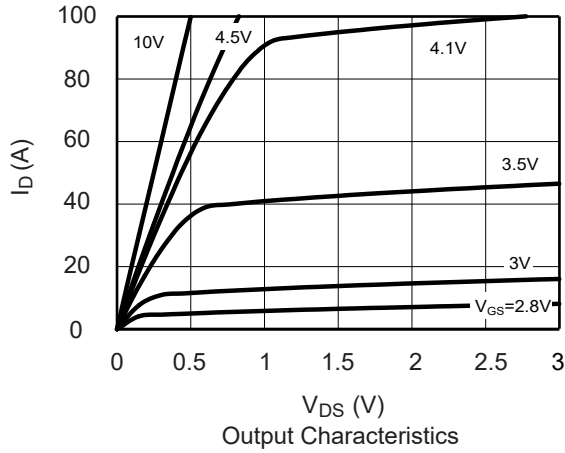
1.The EAS data shows Max. rating . The test condition is V<sub>DD</sub>=25V , V<sub>GS</sub>=10V , L=0.5mH , I<sub>AS</sub>=27.5A.

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

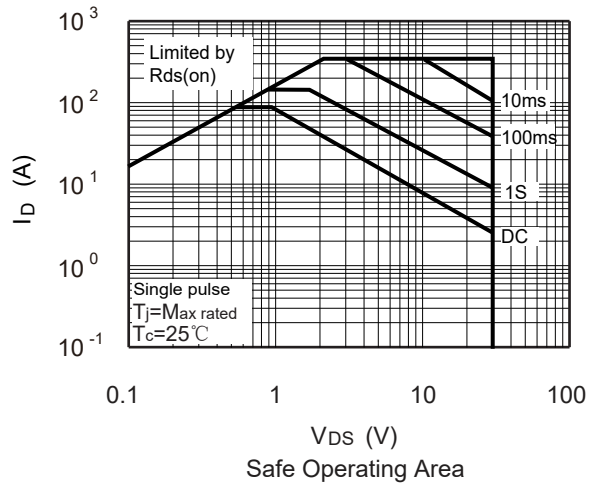
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Typical Characteristics



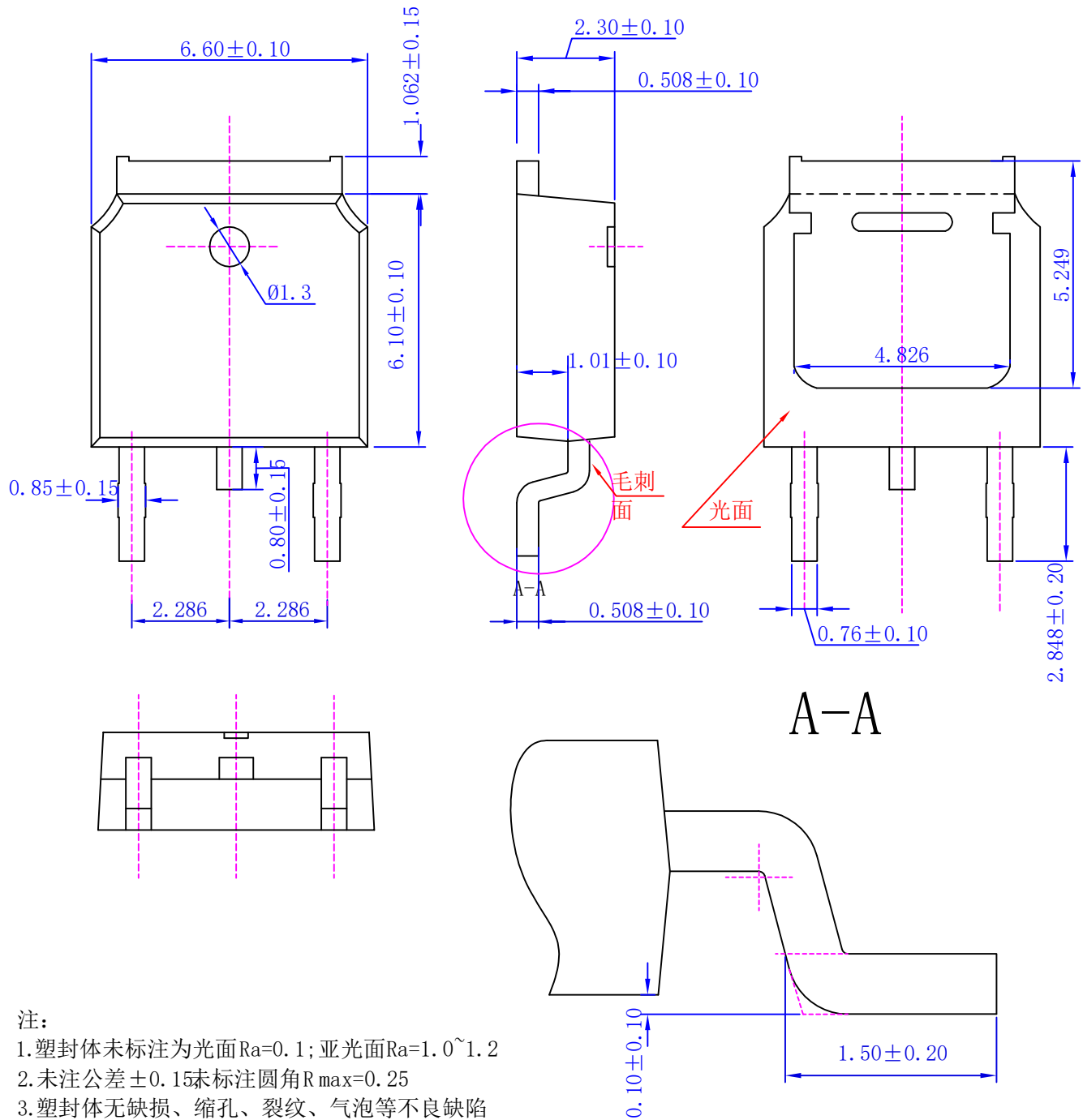
Typical Characteristics



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

