

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

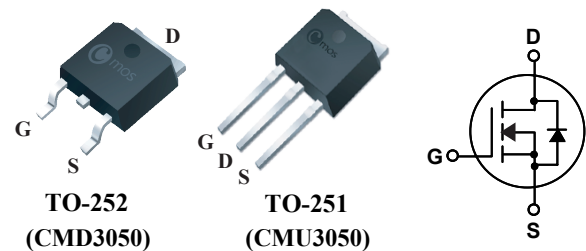
Product Summary

BVDSS	RDS(on) 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 _{DS}	Drain-Source Voltage	30	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current	90	A
I _D @T _C =100°C	Continuous Drain Current	63	A
I _{DM}	Pulsed Drain Current	360	A
EAS	Single Pulse Avalanche Energy ¹	113	mJ
P _D @T _C =25°C	Total Power Dissipation	85	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	---	62.5	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	1.47	°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	30	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V, I _D =20A	---	4.4	5	mΩ
		V _{GS} =4.5V, I _D =10A	---	7.2	9	
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	---	---	1	μA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =5V, I _D =10A	---	15	---	S
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	6.0	---	Ω
Q _g	Total Gate Charge	I _D =20A	---	20	---	nC
Q _{gs}	Gate-Source Charge	V _{DS} =15V	---	4	---	
Q _{gd}	Gate-Drain Charge	V _{GS} =4.5V	---	8	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =15V	---	6	---	ns
T _r	Rise Time	V _{GS} =10V	---	11	---	
T _{d(off)}	Turn-Off Delay Time	R _{GEN} =3Ω	---	36	---	
T _f	Fall Time	R _L =0.75Ω	---	12	---	
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	---	1700	---	pF
C _{oss}	Output Capacitance		---	150	---	
C _{rss}	Reverse Transfer Capacitance		---	135	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V, Force Current	---	---	90	A
I _{SM}	Pulsed Source Current		---	---	360	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =20A, T _J =25°C	---	0.86	1.2	V

Note :

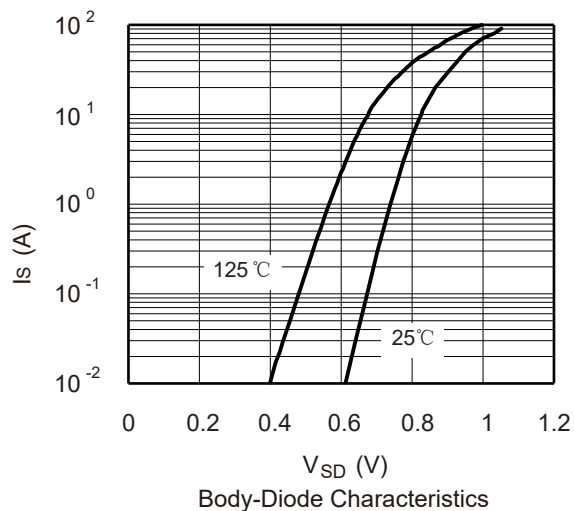
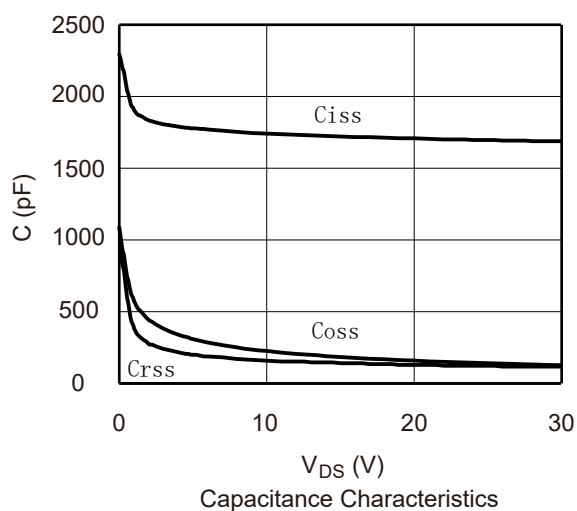
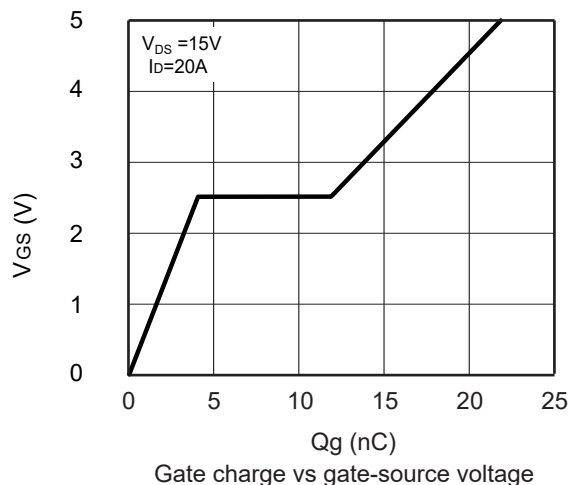
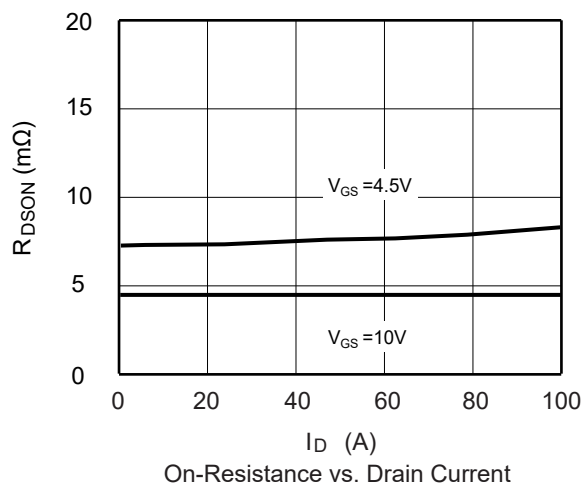
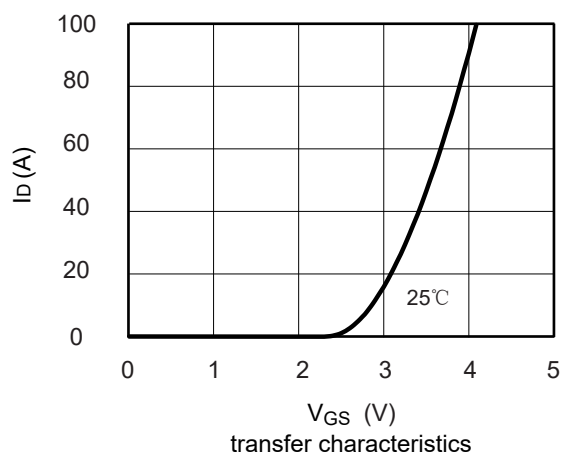
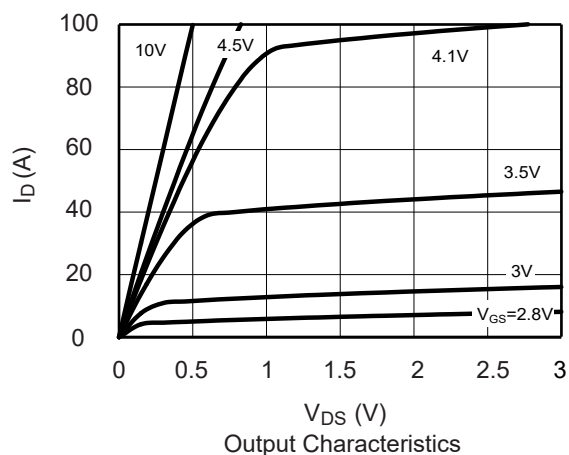
1.The EAS data shows Max. rating . The test condition is V_{DD}=25V, V_{GS}=10V, L=0.5mH, I_{AS}=27.5A.

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

Cmos assumes no liability for customers' product design or applications.

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

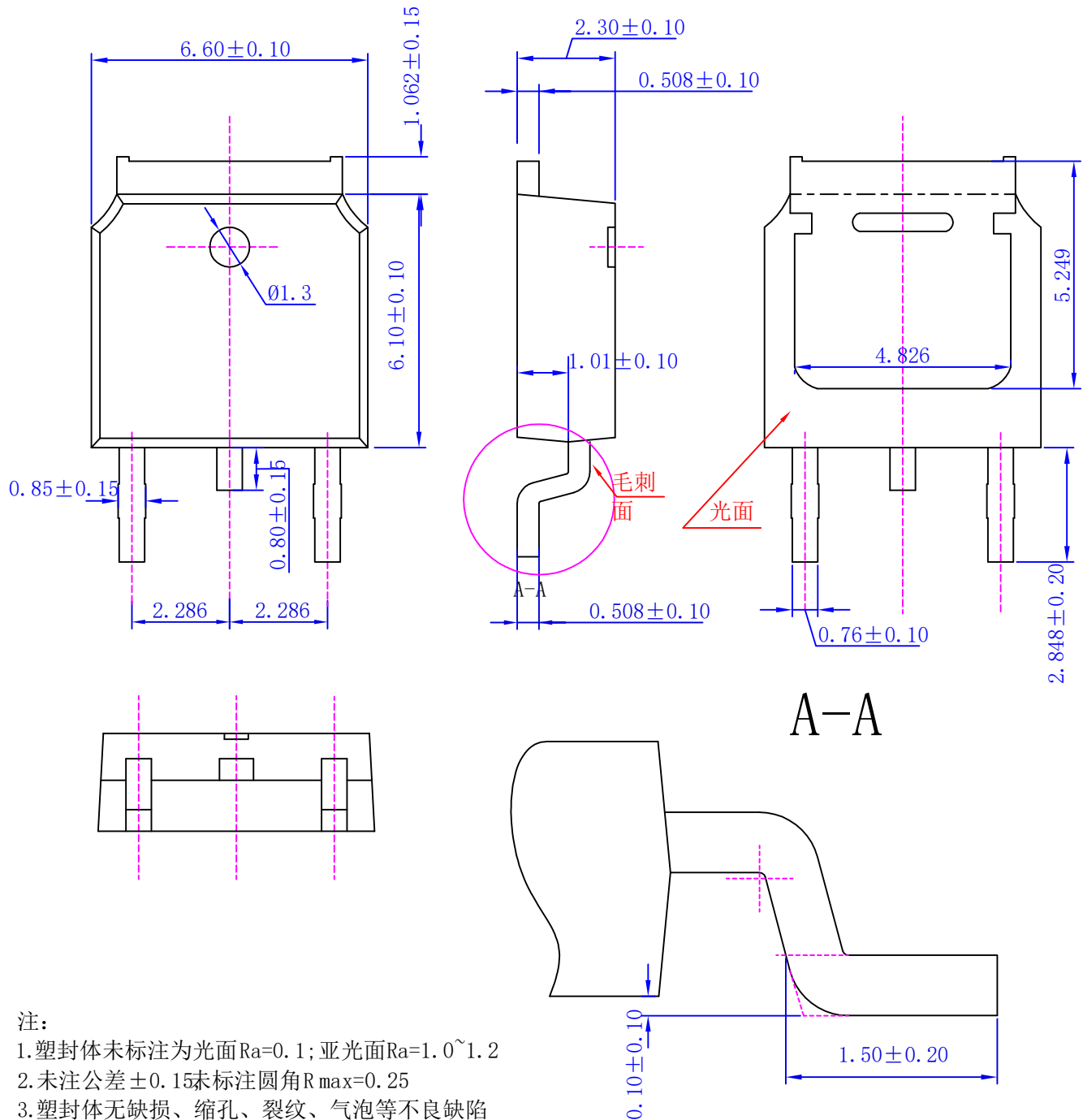
Typical Characteristics



Package Dimension

TO-252

Unit :mm



Package Dimension

TO-251A

Unit :mm

