

General Description

The 20P09L uses advanced process technology and design to provide excellent RDS(ON). It can be used in a wide variety of applications.

Features

- P-Channel MOSFET
- Low ON-resistance
- 100% avalanche tested
- RoHS Compliant

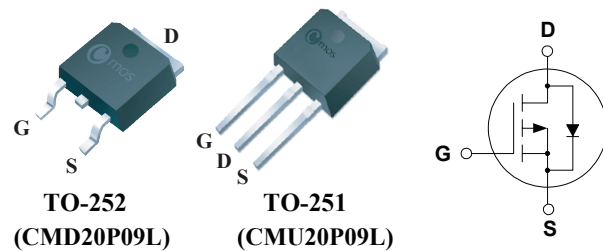
Product Summary

BVDSS	R _{DS(on)} max.	ID
-90V	145mΩ	-20A

Applications

- Motor Drivers
- Switching Voltage Regulators

TO-252/251 Pin Configuration



Absolute Maximum Ratings (T_A=25 °C Unless Otherwise Noted)

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	-90	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current	-20	A
I _D @T _C =100°C	Continuous Drain Current	-14	A
I _{DM}	Pulsed Drain Current	-80	A
EAS	Single Pulse Avalanche Energy ¹	312	mJ
P _D @T _C =25°C	Total Power Dissipation	75	W
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	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	---	1.67	°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 =-250μA	-90	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =-10V , I _D =-15A	---	120	145	mΩ
		V _{GS} =-4.5V , I _D =-10A	---	132	165	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D = -250μA	-1.0	---	-3.0	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-90V, 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} =-5V , I _D =-5A	---	21	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	13	---	Ω
Q _g	Total Gate Charge	V _{DS} =-80V , V _{GS} =-10V , I _D =-15A	---	70	---	nC
Q _{gs}	Gate-Source Charge		---	10	---	
Q _{gd}	Gate-Drain Charge		---	20	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} =-50V, V _{GS} = -10V , R _G =4.7Ω I _D =-10A	---	30	---	ns
T _r	Rise Time		---	12	---	
T _{d(off)}	Turn-Off Delay Time		---	290	---	
T _f	Fall Time		---	41	---	
C _{iss}	Input Capacitance	V _{DS} =-25V , V _{GS} =0V , f=1MHz	---	6100	---	pF
C _{oss}	Output Capacitance		---	150	---	
C _{rss}	Reverse Transfer Capacitance		---	90	---	

Diode Characteristics

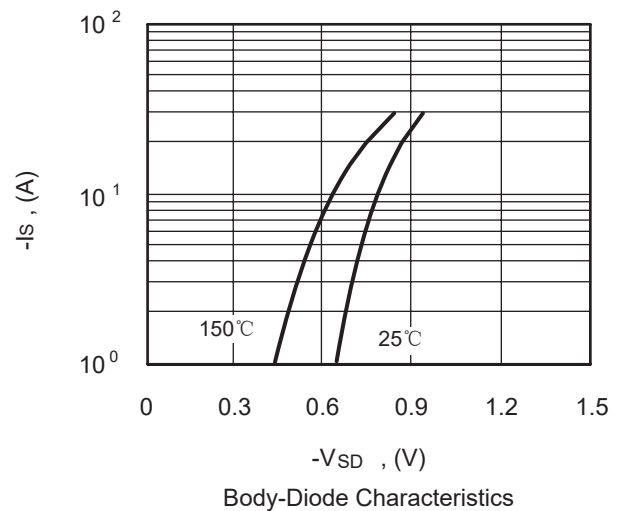
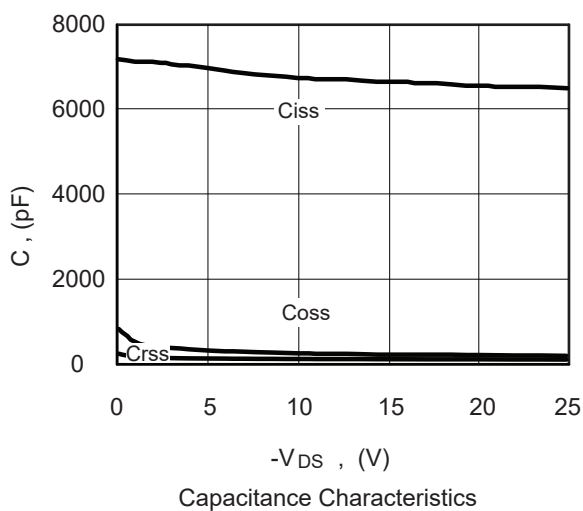
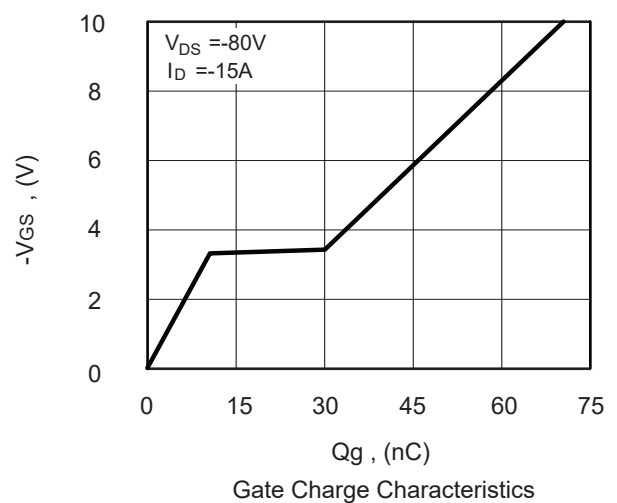
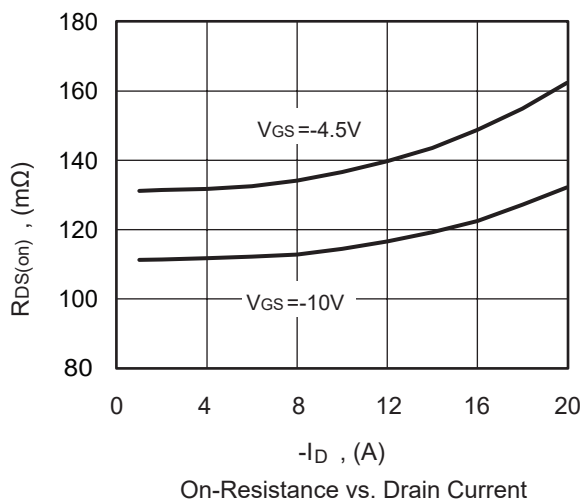
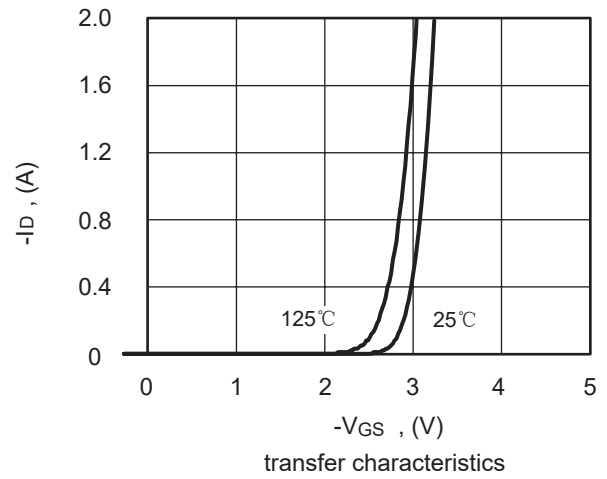
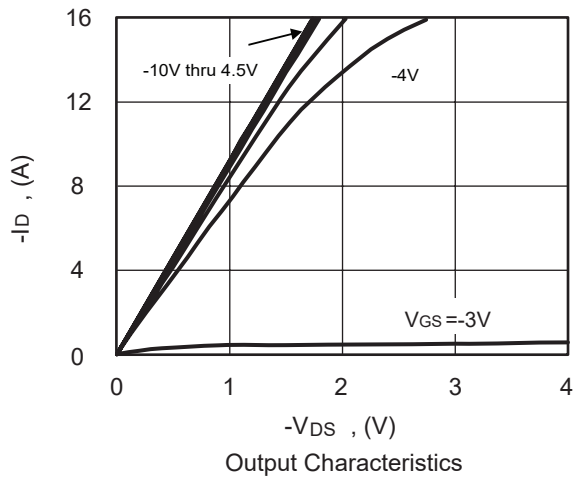
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	-20	A
I _{SM}	Pulsed Source Current		---	---	-80	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =-20A , T _J =25°C	---	-0.86	-1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is V_{DD}=-50V , V_{GS}=-10V , L=1mH , I_{AS}=-25A.

This product has been designed and qualified for the consumer market.
Cmos assumes no liability for customers' product design or applications.
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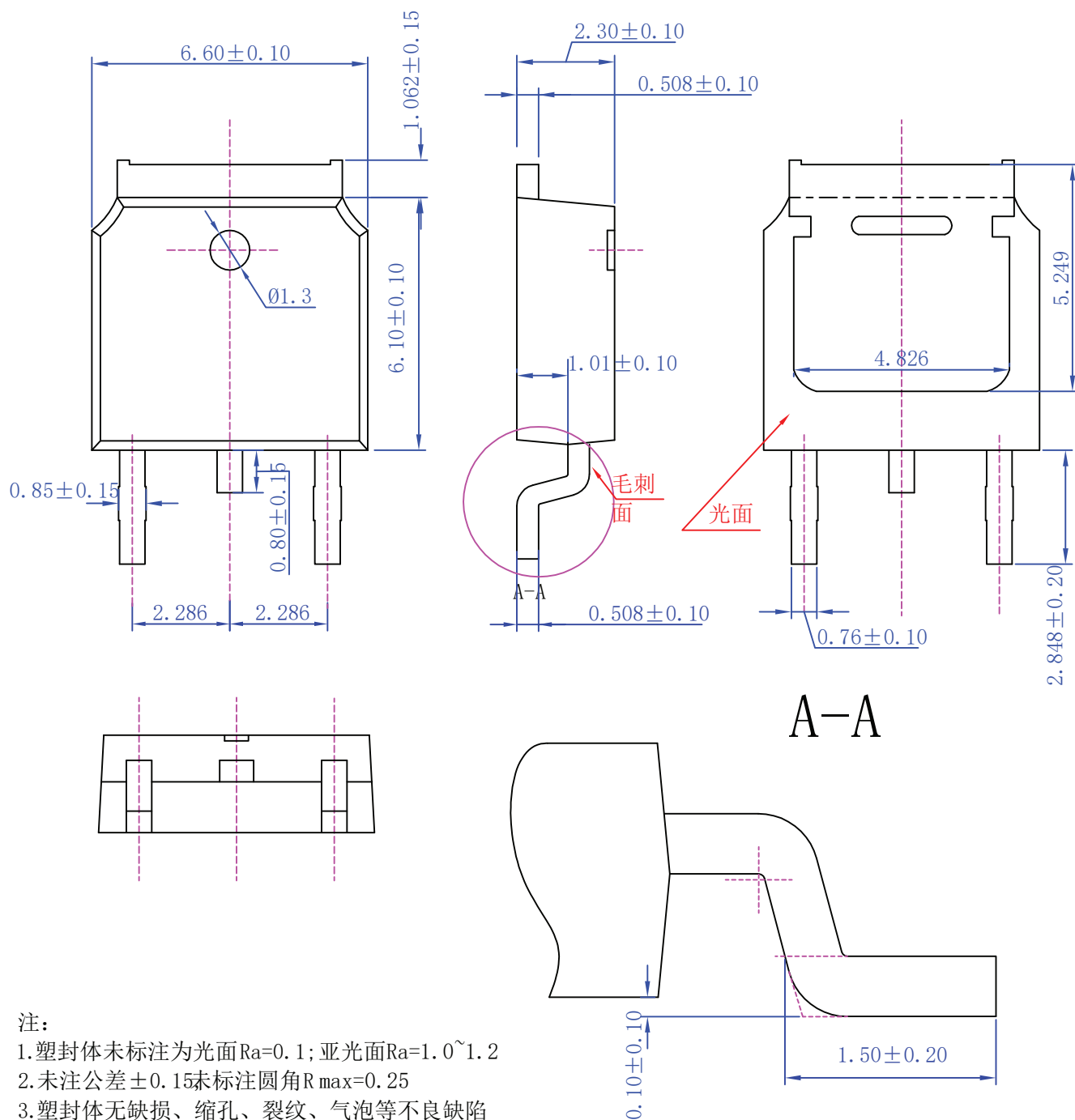
Typical Characteristics



Package Dimension

TO-252

Unit :mm



Package Dimension

TO-251A

Unit :mm

