

CMD019N04L/CMU019N04L

40V, 1.6mΩ typ., 150A N-Channel MOSFET

General Description

The 019N04L uses advanced SGT technology to provide excellent RDS(ON). These devices are suitable for DC Motor Drivers, Synchronous Rectification in DC/DC and AC/DC Converters.

Features

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

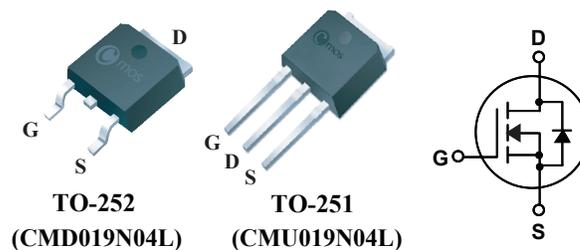
Product Summary

BVDSS	RDS(on) max.	ID
40V	1.9mΩ	150A

Applications

- Motor Drivers
- Switching applications

TO-252/251 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	40	V
V _{GS}	Gate-Source Voltage	±20	V
I _D @T _C =25°C	Continuous Drain Current	150	A
I _D @T _C =100°C	Continuous Drain Current	105	A
I _{DM}	Pulsed Drain Current	600	A
EAS	Single Pulse Avalanche Energy ¹	900	mJ
P _D @T _C =25°C	Total Power Dissipation	150	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(Steady-State)	---	50	°C/W
R _{θJC}	Thermal Resistance Junction-case	---	0.83	°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	40	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V, I _D =30A	---	1.6	1.9	mΩ
		V _{GS} =4.5V, I _D =20A	---	1.7	2	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1.0	---	2.0	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =40V, 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} =10V, I _D =20A	---	39	---	S
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	1.5	---	Ω
Q _g	Total Gate Charge	I _D =27A V _{DD} =20V V _{GS} =0 to 10V	---	60	---	nC
Q _{gs}	Gate-Source Charge		---	11	---	
Q _{gd}	Gate-Drain Charge		---	6	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =20V V _{GS} =10V R _{GEN} =6Ω, I _D =27A	---	15	---	ns
T _r	Rise Time		---	7	---	
T _{d(off)}	Turn-Off Delay Time		---	38	---	
T _f	Fall Time		---	6	---	
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	---	5700	---	pF
C _{oss}	Output Capacitance		---	1200	---	
C _{rss}	Reverse Transfer Capacitance		---	480	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V, Force Current	---	---	150	A
I _{SM}	Pulsed Source Current		---	---	600	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =30A, T _J =25°C	---	0.79	1.2	V

Note :

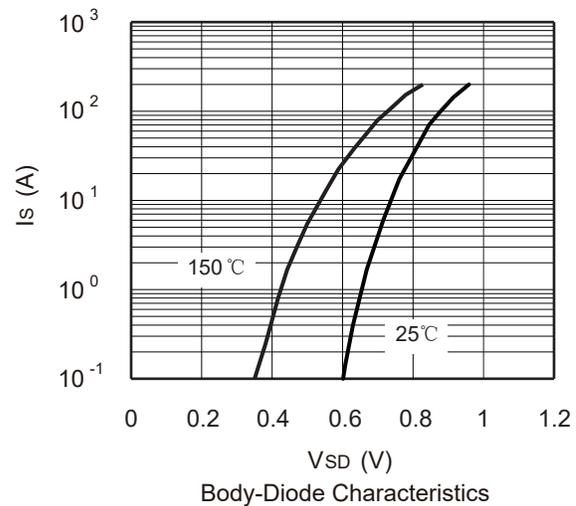
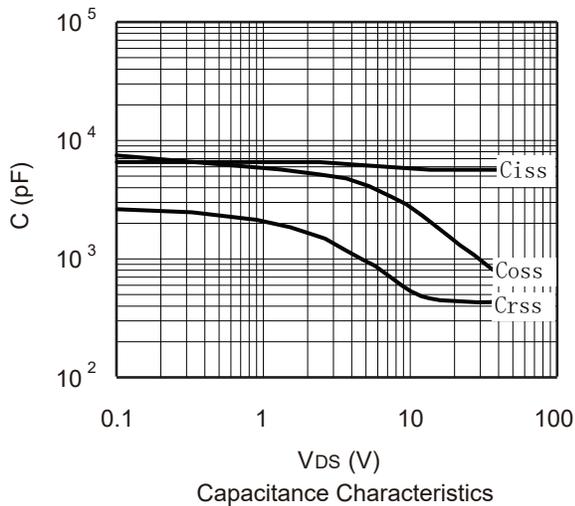
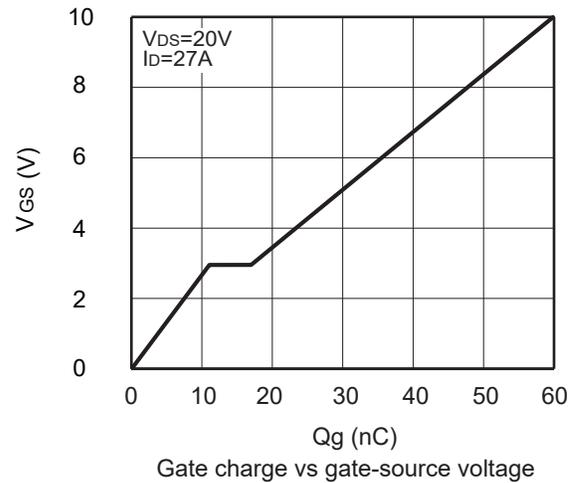
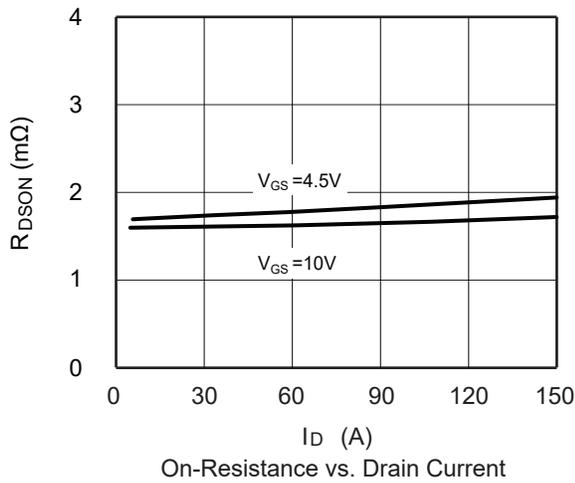
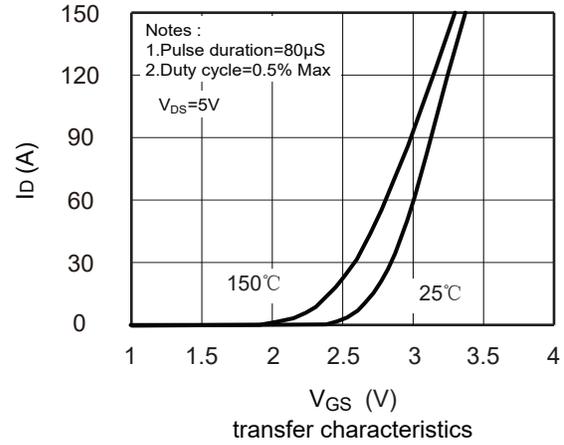
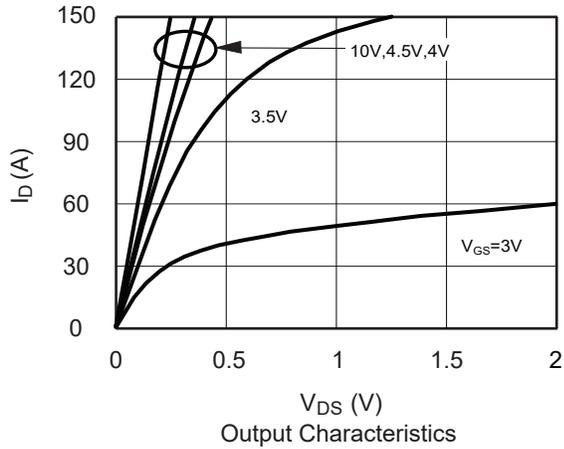
1.The EAS data shows Max. rating . The test condition is V_{DD}=40V, V_{GS}=10V, L=0.5mH, I_{AS}=60A.

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.

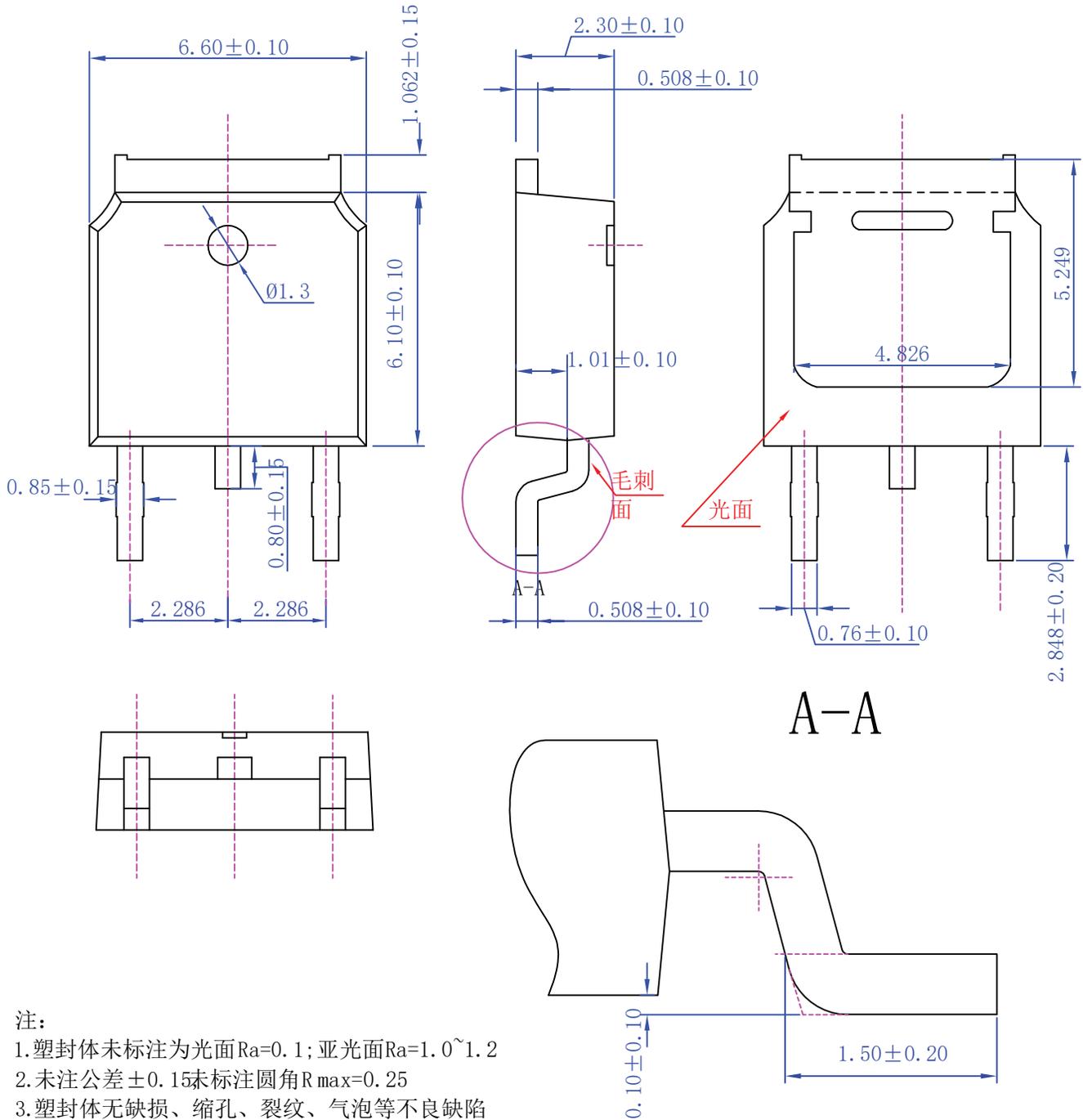
Typical Characteristics



Package Dimension

TO-252

Unit :mm



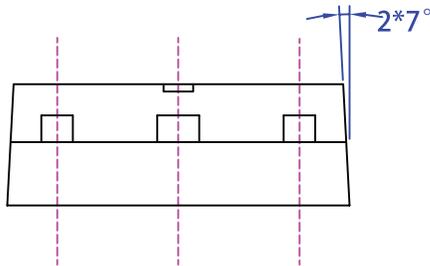
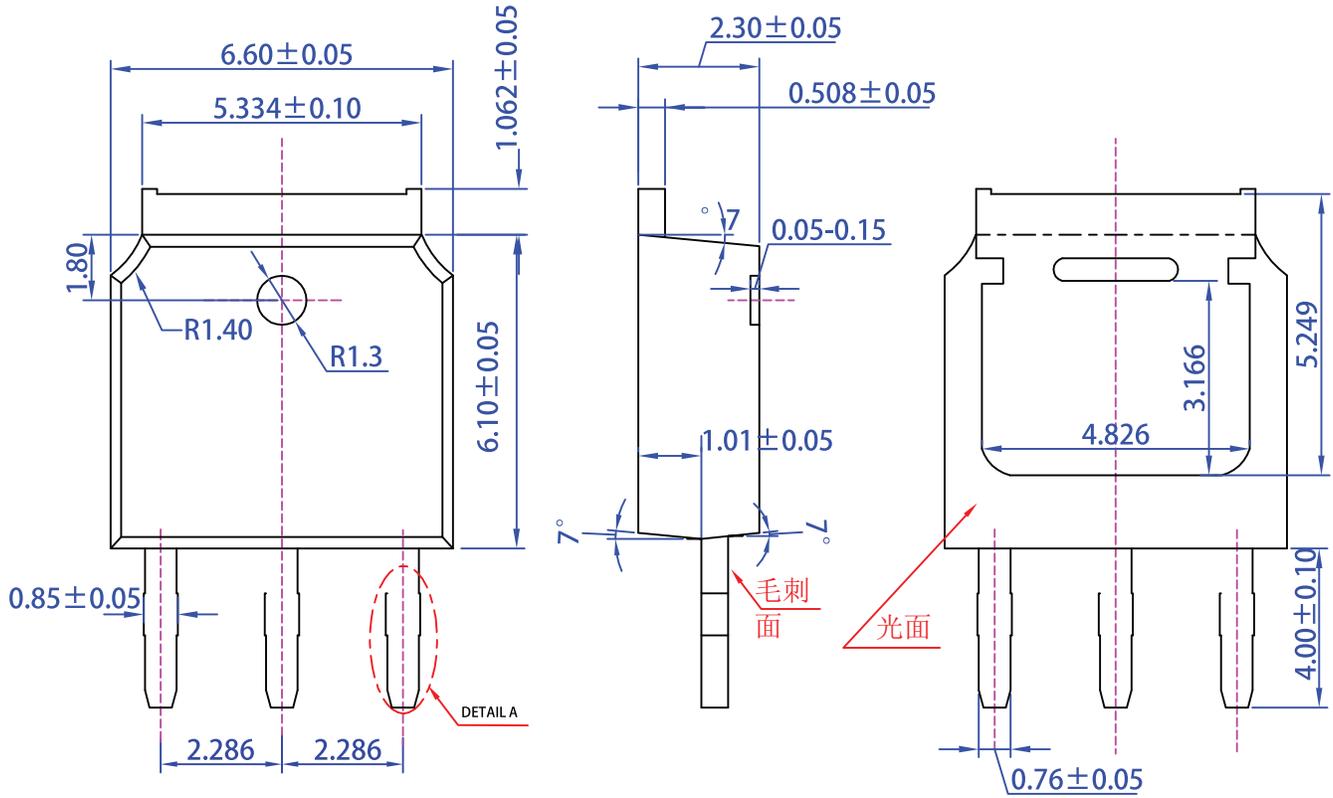
注:

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 or A2<0.05

