CMD80N06/CMU80N06

60V, 7.4mΩ typ., 80A N-Channel MOSFET

General Description

The 80N06 uses advanced trench technology and design to provide excellent RDS(ON). This device is ideal for boost converters and synchronous rectifiers for consumer, telecom, industrial power supplies and LED backlighting.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
60V	8.3mΩ	80A

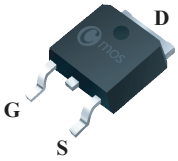
Applications

- DC-DC converters
- UPS
- SMPS

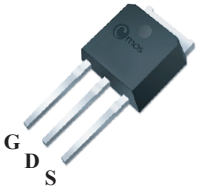
Features

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

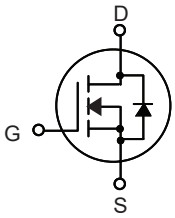
TO-252/251 Pin Configuration



TO-252
(CMD80N06)



TO-251
(CMU80N06)



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℃	Continuous Drain Current	80	A
I_D@T_C=100℃	Continuous Drain Current	50	A
I_{DM}	Pulsed Drain Current[1]	320	A
EAS	Single Pulse Avalanche Energy[2]	480	mJ
P_D@T_C=25℃	Total Power Dissipation	150	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	62	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	0.83	℃/W

60V, 7.4mΩ typ., 80A N-Channel MOSFET

Electrical Characteristics (T_J=25℃ , 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	---	7.4	8.3	mΩ
		V_{GS}=6V , I_D=20A	---	9	12	
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=60V , V_{GS}=0V	---	---	1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS}= ±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=10V , I_D=20A	---	18	---	S
R_g	Gate Resistance	f=1MHz	---	5	---	Ω
Q_g	Total Gate Charge	I_D=80A V_{DD}=30V V_{GS}=10V	---	70	---	nC
Q_{gs}	Gate-Source Charge		---	18	---	
Q_{gd}	Gate-Drain Charge		---	30	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=30V R_G=3.3Ω V_{GS}=10V I_D =80A	---	40	---	ns
T_r	Rise Time		---	120	---	
$T_{d(off)}$	Turn-Off Delay Time		---	100	---	
T_f	Fall Time		---	60	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	3600	---	pF
C_{oss}	Output Capacitance		---	350	---	
C_{rss}	Reverse Transfer Capacitance		---	300	---	

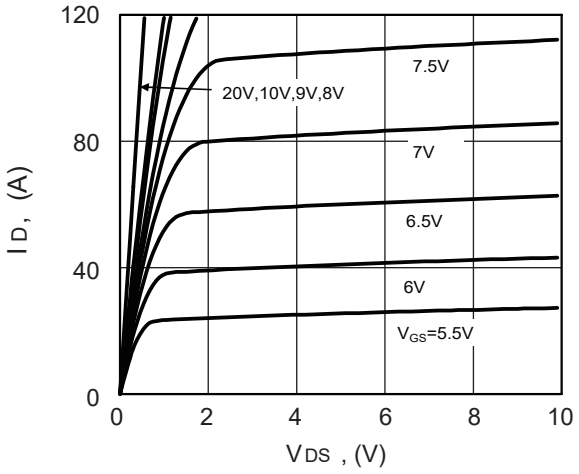
Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	80	A
I_{SM}	Pulsed Source Current		---	---	320	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=28A ,T_J=25℃	---	0.85	1.3	V
t_{rr}	Reverse Recovery Time	di/dt = 100A/μs T_J =25℃ , I_F =40A	---	36	---	ns
Q_{rr}	Reverse Recovery Charge		---	43	---	nC

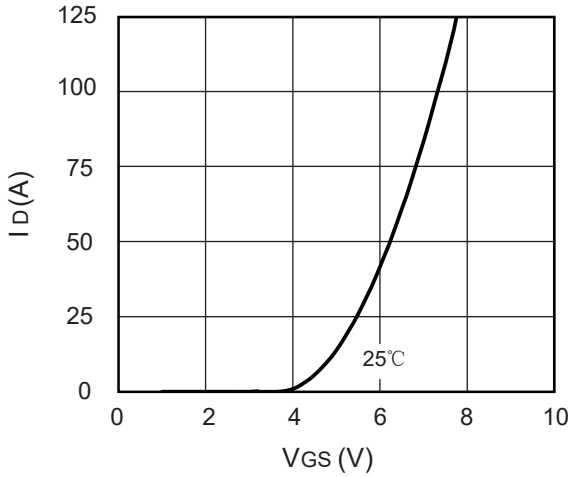
Note :
1.Pulse width limited by safe operating area.
2.The EAS data shows Max. rating . The test condition is V_{DD}=30V , V_{GS}=10V , L=1mH , I_{AS}=31A.
3.Surface mounted on 1 in^2 copper pad of FR4 board.

This product has been designed and qualified for the counsumer market.
Cmos assumes no liability for customers' product design or applications.
Cmos reserver the right to improve product design ,functions and reliability wihtout notice.Please refer to the latest version of specification.

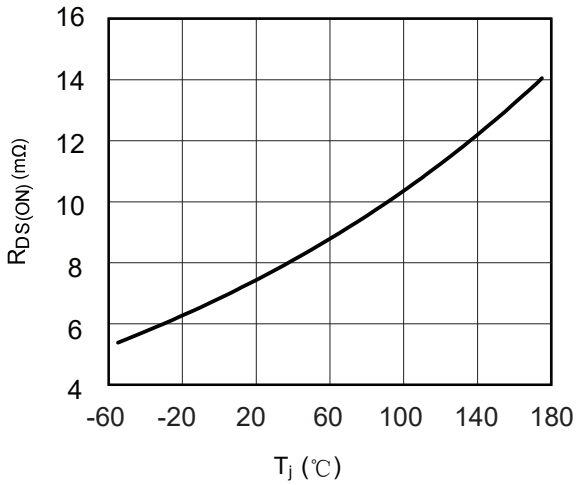
Typical Characteristics



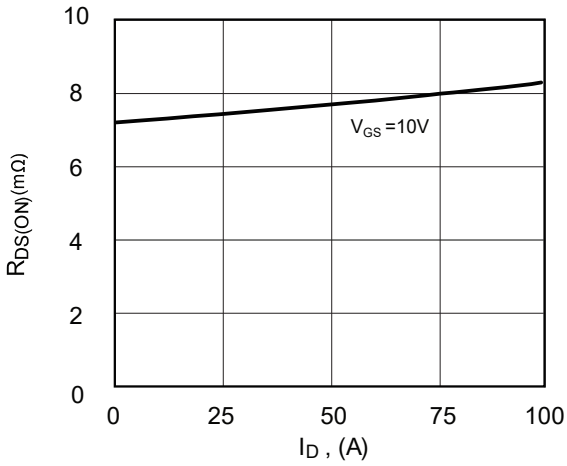
Output Characteristics



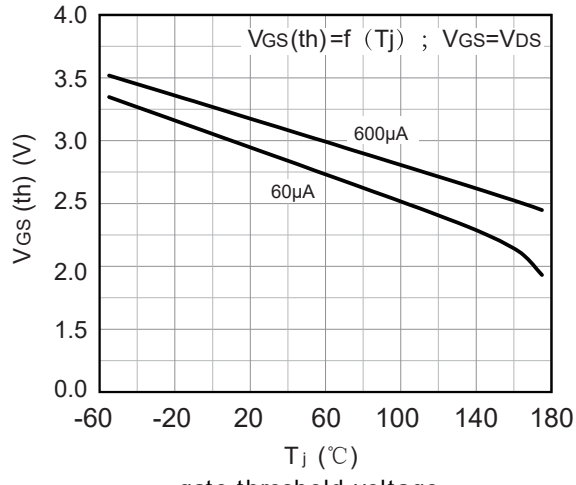
Transfer characteristicS



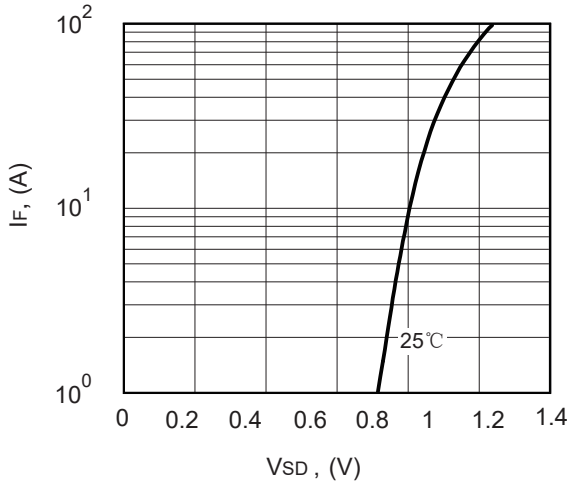
Drain-Source on-state resistancev



Drain-source on-state resistance

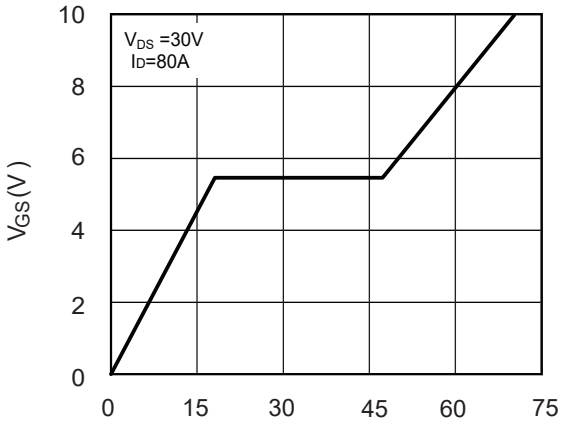


gate threshold voltage

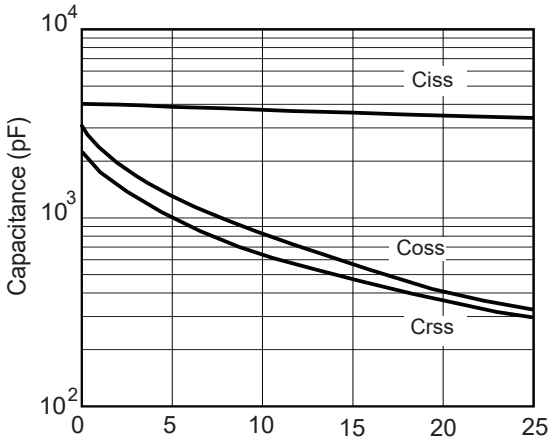


Forward characteristics of reverse diode

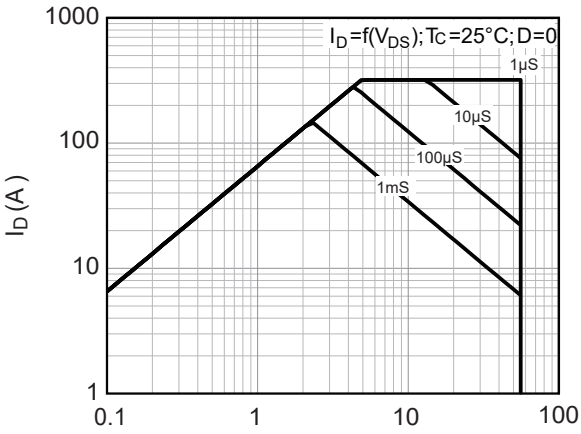
Typical Characteristics



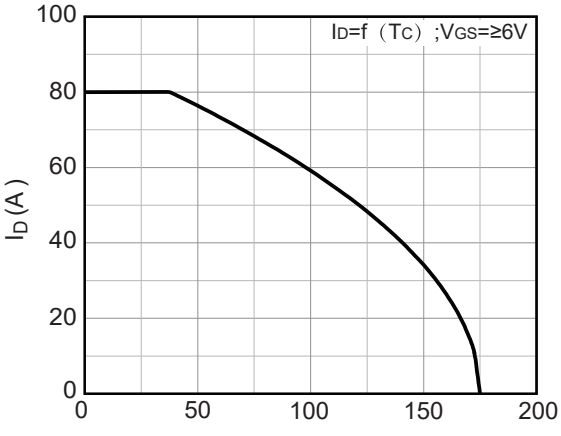
Typ.gate charge



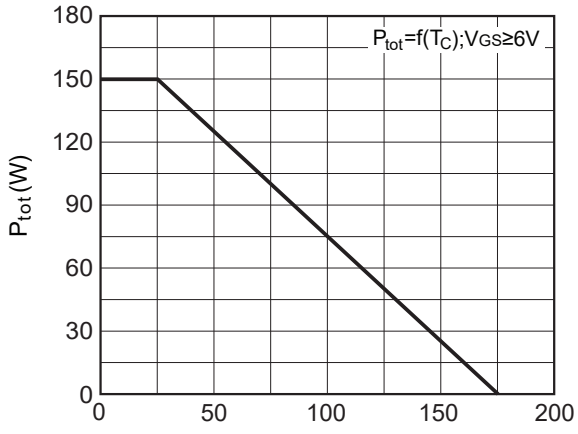
Capacitance Characteristics



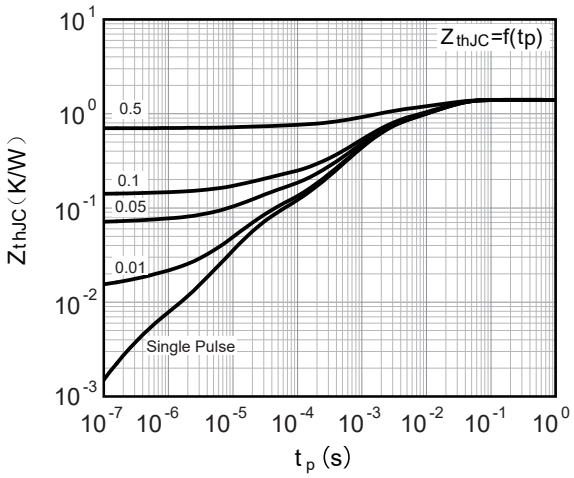
Safe operating area



Drain current



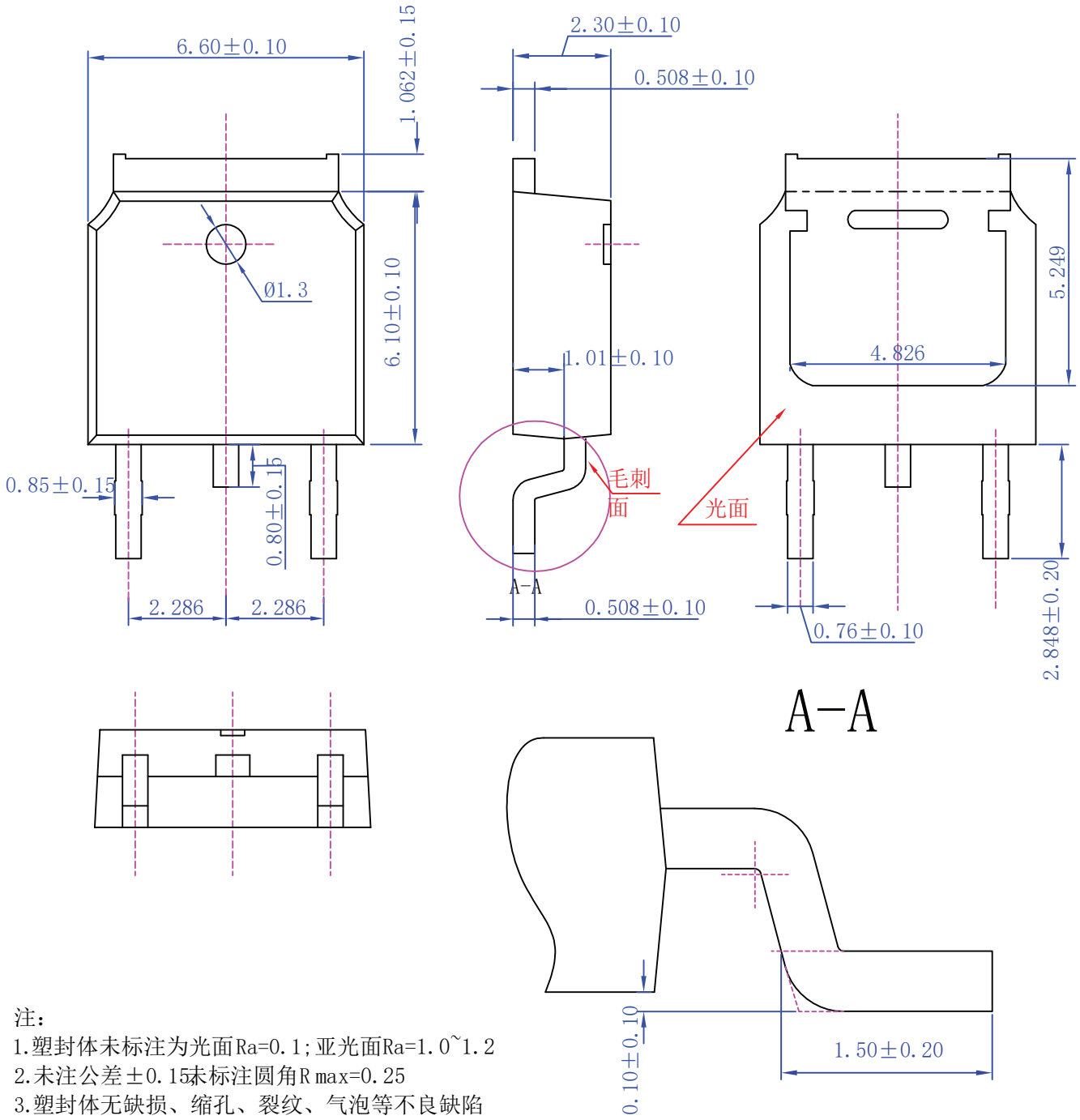
Power dissipation



Max. transient thermal impedance

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

