

CMP10N80A/CMB10N80A/CMI10N80A/CMF10N80A

800V, 885mΩ typ., 10A N-Channel MOSFET

General Description

The 10N80A uses advanced planar stripe DMOS technology and design to provide excellent RDS(ON).

These devices are well suited for high efficiency switch mode power supplies.

Product Summary

BVDSS	RDS(on) max.	ID
800V	1Ω	10A

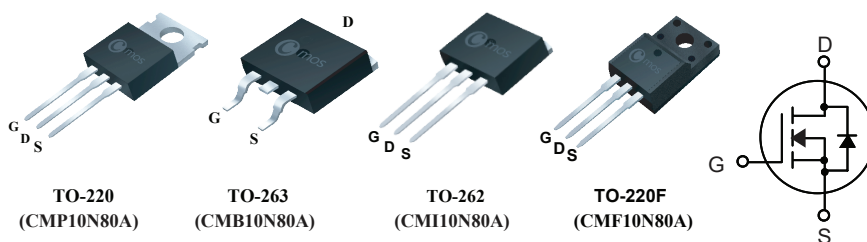
Applications

- Switch Mode Power Supply
- Uninterruptable Power Supply

Features

- Improved dv/dt capability
- 100% avalanche tested
- RoHS Compliant

TO-220/263/262/220F Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	220/263/262	220F	Units
V _{DS}	Drain-Source Voltage	800		V
V _{GS}	Gate-Source Voltage	±30		V
I _D @T _C =25°C	Continuous Drain Current	10	10*	A
I _D @T _C =100°C	Continuous Drain Current	6.3	6.3*	A
I _{DM}	Pulsed Drain Current	40	40*	A
EAS	Single Pulse Avalanche Energy	1280		mJ
P _D @T _C =25°C	Total Power Dissipation	200	60	W
T _{STG}	Storage Temperature Range	-55 to 150		°C
T _J	Operating Junction Temperature Range	150		°C

* Drain current limited by maximum junction temperature.

Thermal Data

Symbol	Parameter	220/263/262	220F	Unit
R _{θJA}	Thermal Resistance Junction-ambient Max.	62.5	62.5	°C/W
R _{θJC}	Thermal Resistance Junction-case Max.	0.63	2.08	°C/W

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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	800	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V , I _D =5A	---	0.885	1	Ω
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250μA	2.5	---	4.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =800V , V _{GS} =0V	---	---	10	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} = ±30V , V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =15V , I _D =5A	---	13	---	S
R _g	Gate Resistance	V _{DS} =0V , V _{GS} =0V , f=1MHz	---	3.1	---	Ω
Q _g	Total Gate Charge	V _{DS} =640V , I _D =10A V _{GS} =10V	---	48	---	nC
Q _{gs}	Gate-Source Charge		---	12	---	
Q _{gd}	Gate-Drain Charge		---	18	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =400V , I _D =10A R _G =25Ω	---	50	---	ns
T _r	Rise Time		---	130	---	
T _{d(off)}	Turn-Off Delay Time		---	90	---	
T _f	Fall Time		---	80	---	
C _{iss}	Input Capacitance	V _{DS} =100V , V _{GS} =0V , f=1MHz	---	2150	---	pF
C _{oss}	Output Capacitance		---	80	---	
C _{rss}	Reverse Transfer Capacitance		---	10	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V , Force Current	---	---	10	A
I _{SM}	Pulsed Source Current		---	---	40	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =10A	---	0.83	1.4	V

Note :

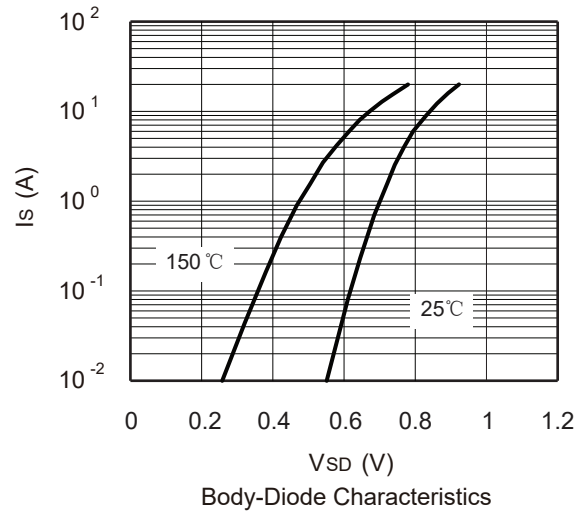
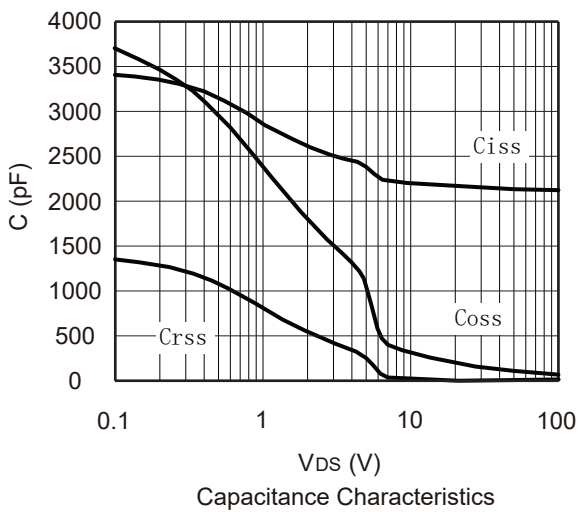
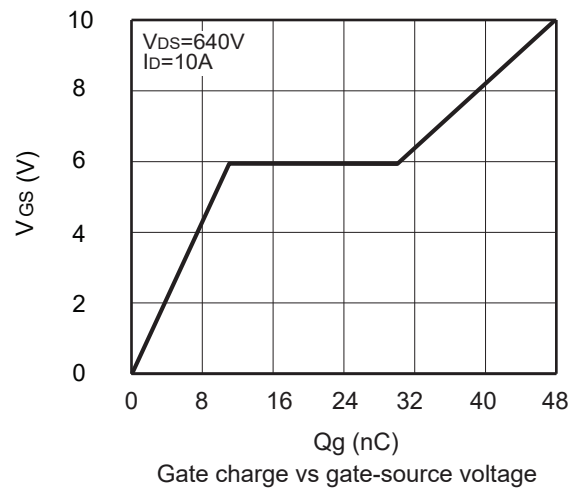
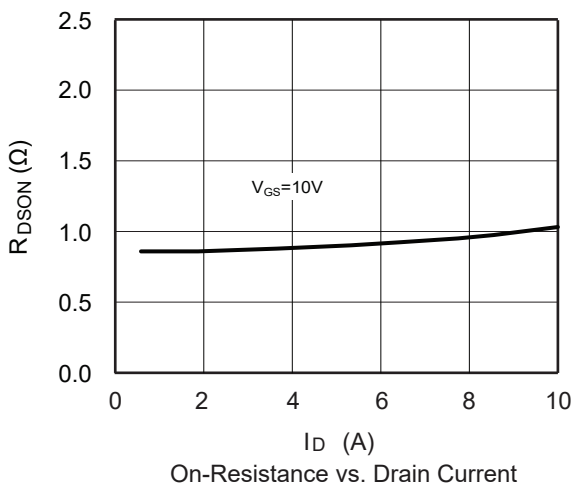
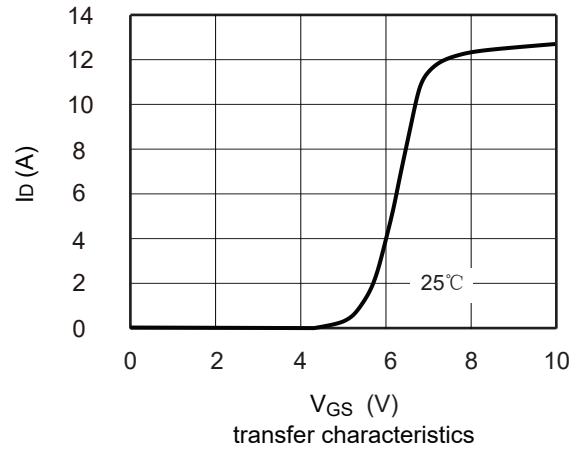
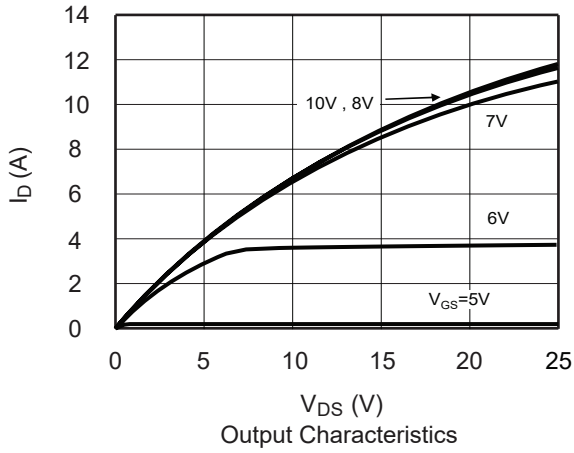
1.The EAS data shows Max. rating .The test condition is V_{DS}=100V , V_{GS}=10V , L=10mH , I_{AS}=16A.

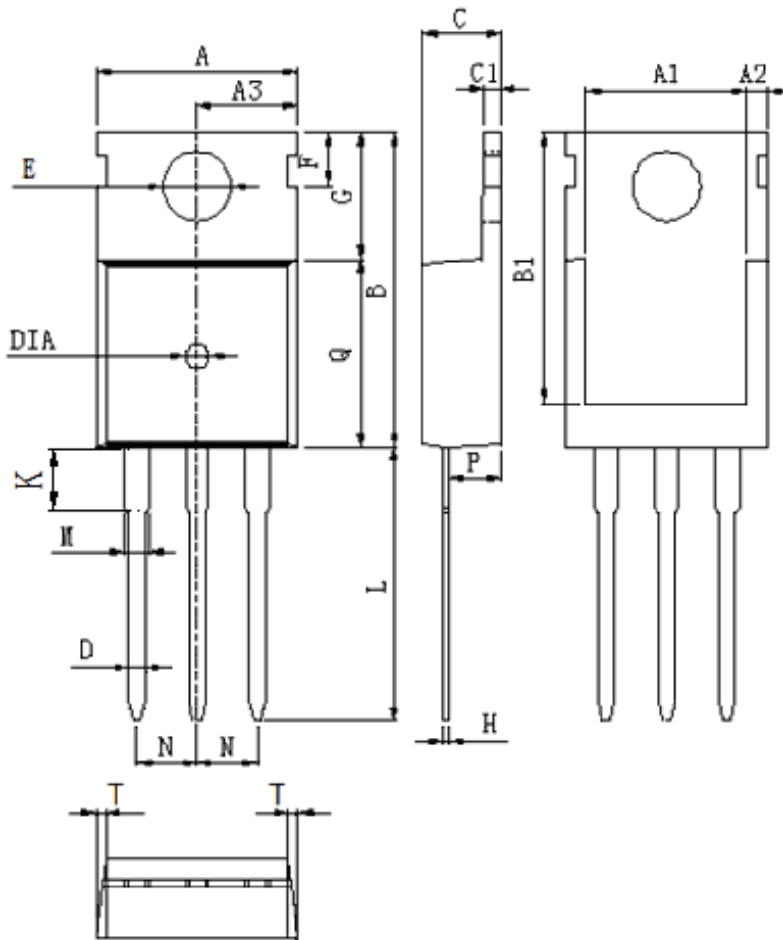
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Cmos assumes no liability for customers' product design or applications.

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-220
Unit :mm


DIM	MILLIMETERS
A	10.0 ± 0.3
A1	8.64 ± 0.2
A2	1.15 ± 0.1
A3	5.0 ± 0.2
B	15.8 ± 0.4
B1	13.2 ± 0.3
C	4.56 ± 0.1
C1	1.3 ± 0.2
D	0.8 ± 0.2
E	3.6 ± 0.2
F	2.95 ± 0.3
G	6.5 ± 0.3
H	0.5 ± 0.1
K	3.1 ± 0.2
L	13.2 ± 0.4
M	1.25 ± 0.1
N	2.54 ± 0.1
P	2.4 ± 0.3
Q	9.0 ± 0.3
T	W:0.35
DIA	⊙1.5 (deep 0.2)

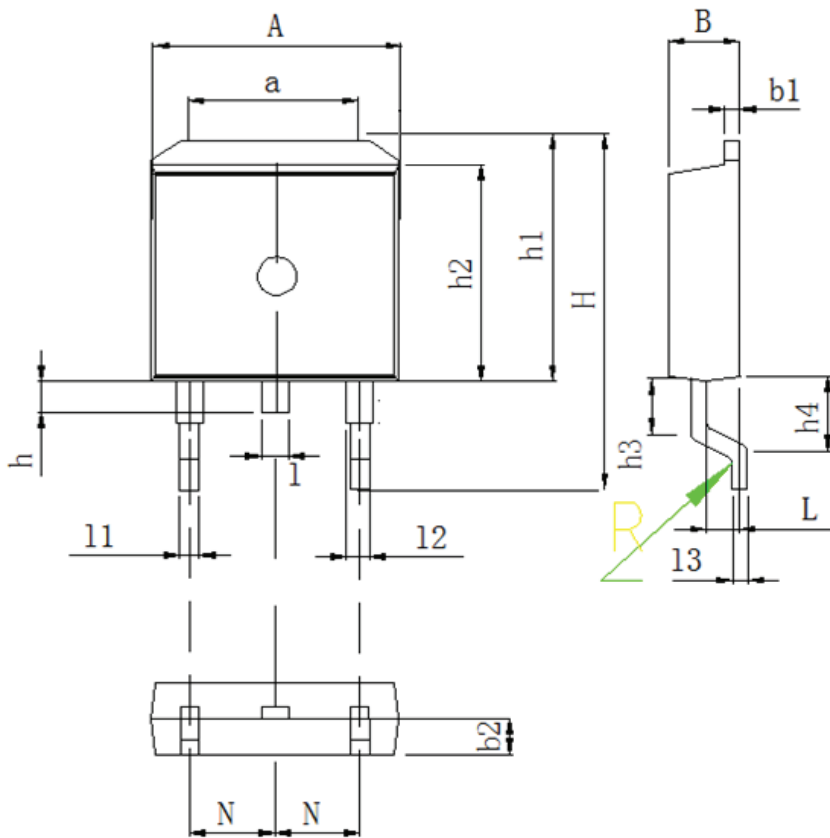
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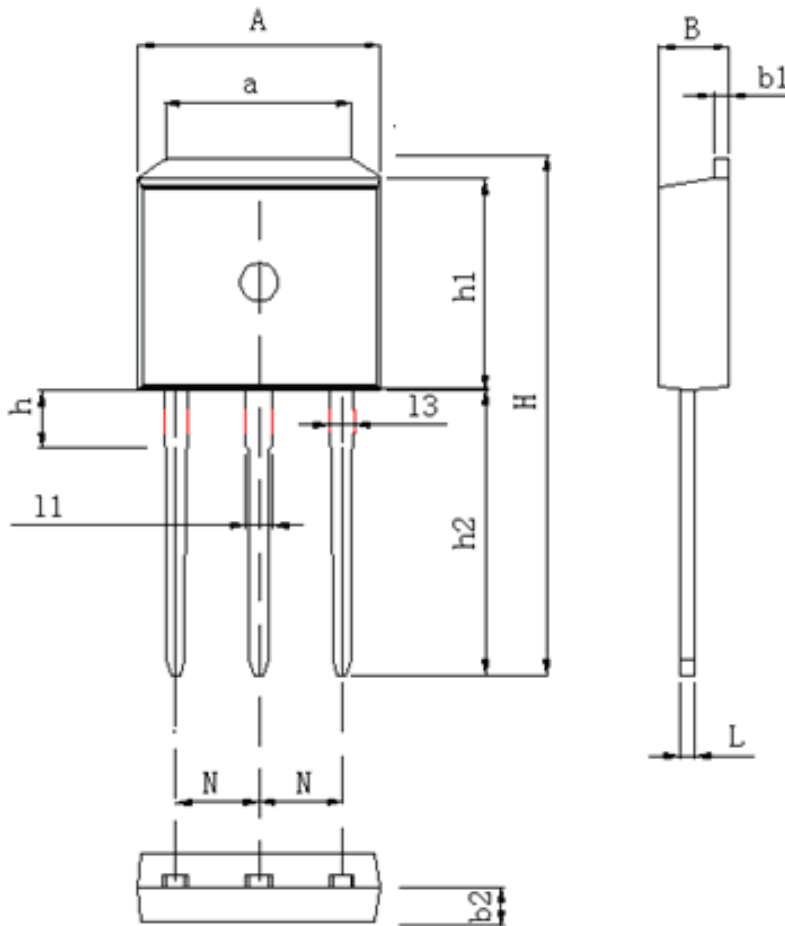
Package Dimension

TO-263

Unit :mm



DIM	MILLIMETERS
A	9.8 ± 0.2
a	7.4 ± 0.4
B	4.5 ± 0.2
b1	1.3 ± 0.05
b2	2.4 ± 0.2
H	15.5 ± 0.3
h	1.54 ± 0.2
h1	10.5 ± 0.2
h2	9.2 ± 0.1
h3	1.54 ± 0.2
h4	2.7 ± 0.2
L	2.4 ± 0.2
1	1.3 ± 0.1
11	0.8 ± 0.1
12	1.3 ± 0.1
13	0.5 ± 0.1
N	2.54 ± 0.1
R	$0.5R \pm 0.05$

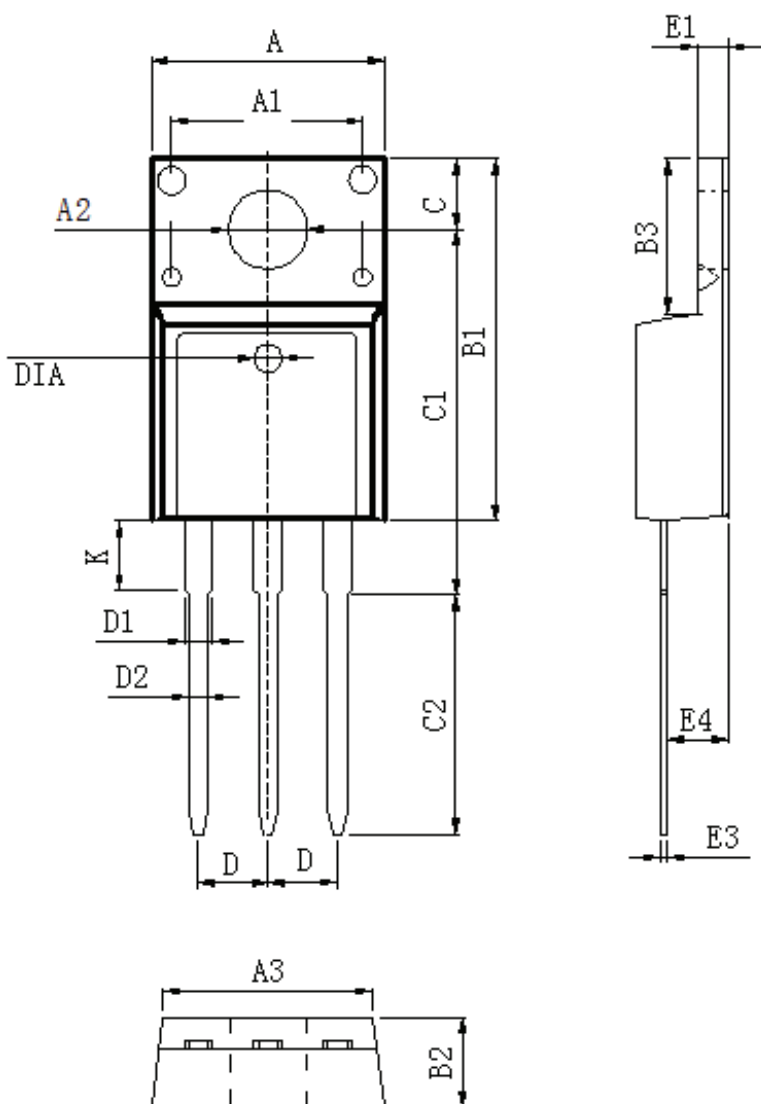
Package Dimension
TO-262
Unit :mm


DIM	MILLIMETERS
A	9.98 ± 0.2
a	7.4 ± 0.4
B	4.5 ± 0.2
b1	1.3 ± 0.05
b2	2.4 ± 0.2
H	23.9 ± 0.3
h	3.1 ± 0.2
h1	9.16 ± 0.2
h2	13.2 ± 0.2
L	0.5 ± 0.1
l1	1.3 ± 0.1
l2	0.8 ± 0.1
N	2.45 ± 0.1

Package Dimension

TO-220F

Unit :mm



DIM	MILLIMETERS
A	10.16 ± 0.3
A1	7.00 ± 0.1
A2	3.3 ± 0.2
A3	9.5 ± 0.2
B1	15.87 ± 0.3
B2	4.7 ± 0.2
B3	6.68 ± 0.4
C	3.3 ± 0.2
C1	12.57 ± 0.3
C2	10.02 ± 0.5
D	2.54 ± 0.05
D1	1.28 ± 0.2
D2	0.8 ± 0.1
K	3.1 ± 0.3
E1	2.54 ± 0.1
E3	0.5 ± 0.1
E4	2.76 ± 0.2
DIA	$\varnothing 1.5$ (deep 0.2)