

General Description

The CMB18N20A uses advanced trench technology and design to provide excellent RDS(ON) with low gate charge. It can be used in a wide variety of applications.

Features

- Simple Drive Requirement
- Fast Switching
- Improve dv/dt capability

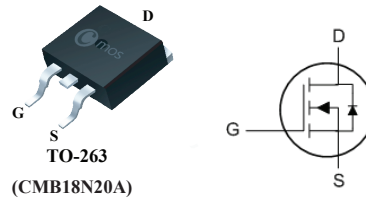
Product Summary

BVDSS	RDSON	ID
200V	150mΩ	18A

Applications

- UPS
- Inverter
- Lighting

TO-263 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source Voltage	200	V
V_{GS}	Gate-Source Voltage	±30	V
$I_D@T_c=25^\circ\text{C}$	Continuous Drain Current	18	A
$I_D@T_c=100^\circ\text{C}$	Continuous Drain Current	11	A
I_{DM}	Pulsed Drain Current ¹	54	A
EAS	Single Pulse Avalanche Energy ²	180	mJ
$P_D@T_c=25^\circ\text{C}$	Total Power Dissipation	100	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	62.5	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	1.2	°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	200	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V, I _D =10A	---	---	150	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1	1.95	3	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =200V, V _{GS} =0V	---	---	10	uA
		V _{DS} =160V, V _{GS} =0V, T _C =125°C	---	---	100	
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±30V, V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =20V, I _D =10A	---	14	---	S
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	2.4	---	Ω
Q _g	Total Gate Charge	I _D =18A	---	20	---	nC
Q _{gs}	Gate-Source Charge	V _{DD} =160V	---	5	---	
Q _{gd}	Gate-Drain Charge	V _{GS} =10V	---	9	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =100V I _D =18A R _G =25Ω	---	20	---	ns
T _r	Rise Time		---	55	---	
T _{d(off)}	Turn-Off Delay Time		---	50	---	
T _f	Fall Time		---	45	---	
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	---	1380	---	pF
C _{oss}	Output Capacitance		---	200	---	
C _{riss}	Reverse Transfer Capacitance		---	30	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current	V _G =V _D =0V, Force Current	---	---	18	A
I _{SM}	Pulsed Source Current		---	---	54	A
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =1A, T _J =25°C	---	---	1.2	V

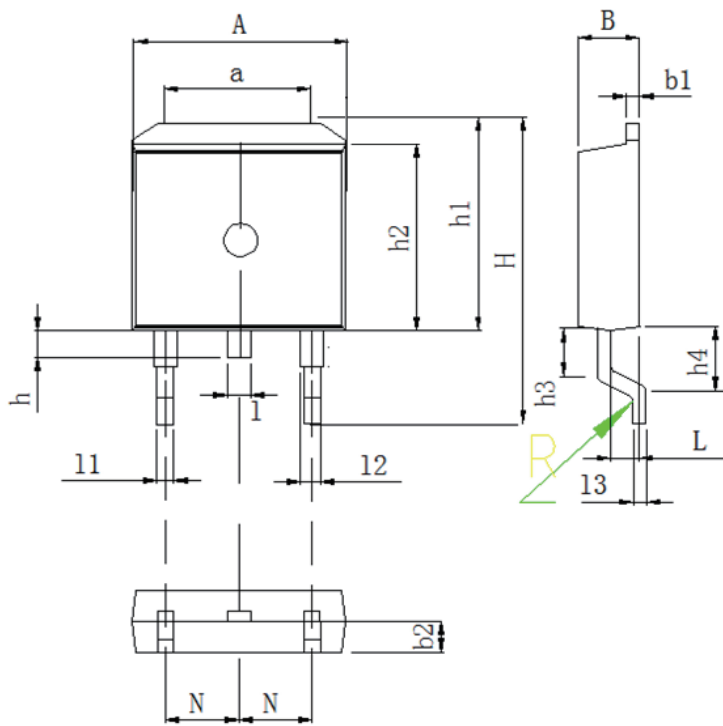
Note :

- 1.Repetitive rating; pulse width limited by maximum junction temperature
- 2.The EAS data shows Max. rating . The test condition is V_{DD}=50V,V_{GS}=10V,L=10mH,I_{AS}=6A

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.

Package Dimensions

TO-263 Package Outline Drawing



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±0.05

Unit :mm