CMB7N60

600V N-Channel MOSFET

General Description

These Power MOSFETs are produced using Cmos's proprietary, planar stripe, DMOS technology.These devices are suitable for switched mode power supplies, active power factor correction (PFC), and electronic lamp ballasts.

Product Summary

BVDSS	$R_{DS(on)}$ max.	ID
600V	1.3Ω	7.5A

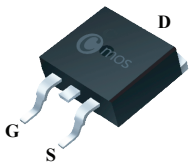
Applications

- Power Supply
- PFC
- Ballast

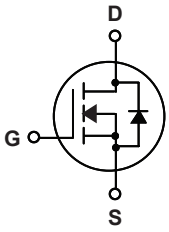
Features

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

TO-263 Pin Configuration



TO-263



Type	Package	Marking
CMB7N60	TO-263	CMB7N60

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	600	V
V_{GS}	Gate-Source Voltage	±30	V
I_D@T_C=25℃	Continuous Drain Current	7.5	A
I_D@T_C=100℃	Continuous Drain Current	4.5	A
I_{DM}	Pulsed Drain Current	30	A
EAS	Single Pulse Avalanche Energy[1]	302	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	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.83	℃/W

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	600	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V , I_D=3.5A	---	---	1.3	Ω
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =250uA	2	---	4	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=600V, V_{GS}=0V	---	---	1	uA
		V_{DS}=480V, V_{GS}=0V@125℃	---	---	10	
I_{GSS}	Gate-Source Leakage Current	V_{GS} = ±30V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=15V , I_D=3A	---	7	---	S
Q_g	Total Gate Charge	I_D=7.5A V_{DS}=480V V_{GS}=10V	---	30	---	nC
Q_{gs}	Gate-Source Charge		---	5	---	
Q_{gd}	Gate-Drain Charge		---	13	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DS}=300V I_D=7.5A R_G=25Ω	---	22	---	ns
T_r	Rise Time		---	52	---	
$T_{d(off)}$	Turn-Off Delay Time		---	78	---	
T_f	Fall Time		---	72	---	
C_{iss}	Input Capacitance	V_{DS}=25V , V_{GS}=0V , f=1MHz	---	1500	---	pF
C_{oss}	Output Capacitance		---	120	---	
C_{rss}	Reverse Transfer Capacitance		---	15	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	V_G=V_D=0V , Force Current	---	---	7.5	A
I_{SM}	Pulsed Source Current		---	---	30	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V , I_S=1 A, T_J=25℃	---	---	1	V

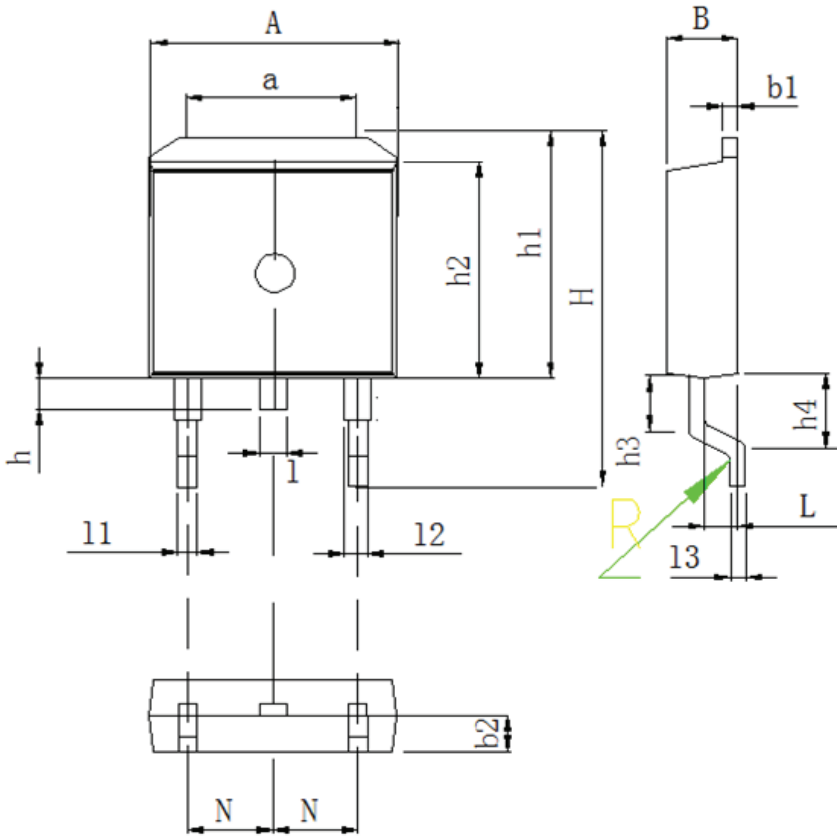
Note :

1. The EAS data shows Max. rating .The test condition is V_{DS} =100V , V_{GS}=10V , L=5mH , I_{AS}=11A.

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.

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
l	1.3±0.1
l1	0.8±0.1
l2	1.3±0.1
l3	0.5±0.1
N	2.54±0.1
R	0.5R±0.05