CMB7N60

600V N-Channel MOSFET

General Description

The CMB7N60 uses advanced power innovated design and silicon process technology to provide excellent RDS(ON). It can be used in a wide variety of applications.

Product Summary

BVDSS	RDSON	ID
600V	1.3Ω	7.5A

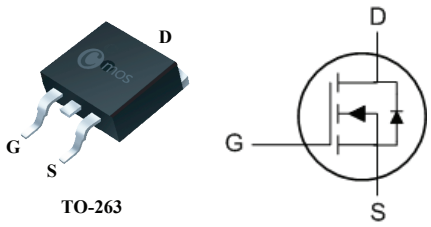
Applications

- DC-DC converters
- LED power controller
- High current, high speed switching
- Motor control, Audio amplifiers

Features

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

TO-/263 Pin Configuration



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	500	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	---	0.8	℃/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	3	---	5	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	---	12	---	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