

General Description

The CMB110P06 uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. These features combine to make this design an extremely efficient and reliable device for use in a wide variety of other applications.

Features

- P-Channel
- Fast Switching
- RoHS Compliant
- Advanced Process Technology

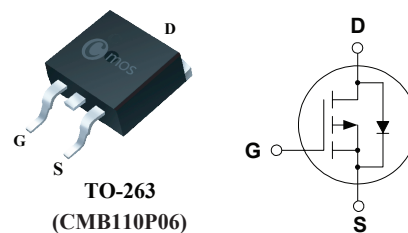
Product Summary

BVDSS	$R_{DS(ON)}$	ID
-60V	7.5m Ω	-90A

Applications

- Inverters
- Motor drive
- DC / DC converter

TO-263 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	-90	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	-63	A
I_{DM}	Pulsed Drain Current	-360	A
EAS	Single Pulse Avalanche Energy ¹	648	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	170	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	40	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	0.75	$^\circ\text{C/W}$

Electrical Characteristics ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=-250\mu A$	-60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V$, $I_D=-20A$	---	6.8	7.5	m Ω
		$V_{GS}=-4.5V$, $I_D=-10A$	---	8	10	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=-250\mu A$	-1	---	-2.5	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-55V$, $V_{GS}=0V$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=-10V$, $I_D=-10A$	---	36	---	S
Q_g	Total Gate Charge	$I_D=-42A$	---	120	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=-44V$	---	30	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=-10V$	---	55	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=-28V$	---	20	---	ns
T_r	Rise Time	$I_D=-42A$	---	100	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_G=2.6\Omega$	---	50	---	
T_f	Fall Time	$V_{GS}=-10V$	---	65	---	
C_{iss}	Input Capacitance	$V_{DS}=-25V$, $V_{GS}=0V$, $f=1MHz$	---	12000	---	pF
C_{oss}	Output Capacitance		---	600	---	
C_{rss}	Reverse Transfer Capacitance		---	450	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	-90	A
I_{SM}	Pulsed Source Current		---	---	-360	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=-10A$, $T_J=25^{\circ}\text{C}$	---	-0.76	-1.2	V
t_{rr}	Reverse Recovery Time	$I_F=-42A$, $T_J=25^{\circ}\text{C}$, $V_{DD}=-28V$	---	60	---	ns
Q_{rr}	Reverse Recovery Charge	$di/dt=100 A/\mu s$	---	150	---	nC

Notes:

1. The EAS data shows Max. rating . The test condition is $V_{DS}=-30V$, $V_{GS}=-10V$, $L=1mH$, $I_D=-36A$.

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.

Typical Characteristics

