

General Description

The CML7N06 uses advanced technology to provide excellent $R_{DS(ON)}$. This device is suitable for use as a synchronous switch in PWM applications.

Features

- Low On-Resistance
- Simple Drive Requirements
- Surface mount package.
- RoHS Compliant

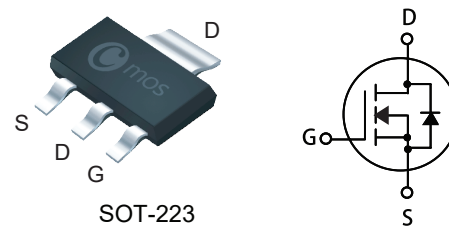
Product Summary

BVDSS	RDSON	ID
60V	23mΩ	7A

Applications

- DC/DC Converter
- Synchronous Rectifier
- Load Switch
- Battery protection

SOT-223 Pin Configuration



Type	Package	Marking
CML7N06	SOT- 223	CML7N06

Absolute Maximum Ratings (TA=25°C Unless Otherwise Noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current	7	A
I_{DM}	Pulsed Drain Current	28	A
P_D	Total Power Dissipation	3	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	---	41.5	°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	$V_{GS}=10V$, $I_D=7A$	---	20	23	m Ω
		$V_{GS}=4.5V$, $I_D=5A$	---	22	28	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=60V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=5V$, $I_D=7A$	---	18	---	S
Q_g	Total Gate Charge	$V_{DD}=48V$, $I_D=6A$ $V_{GS}=4.5V$	---	18.9	---	nC
Q_{gs}	Gate-Source Charge		---	7.8	---	
Q_{gd}	Gate-Drain Charge		---	6.3	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=30V$, $V_{GS}=10V$, $I_D=6A$ $R_G=3.3\Omega$	---	7.7	---	ns
T_r	Rise Time		---	8.7	---	
$T_{d(off)}$	Turn-Off Delay Time		---	48	---	
T_f	Fall Time		---	5	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1MHz$	---	2900	---	pF
C_{oss}	Output Capacitance		---	120	---	
C_{rss}	Reverse Transfer Capacitance		---	110	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	7	A
I_{SM}	Pulsed Source Current		---	---	28	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=7A$, $T_J=25^{\circ}\text{C}$	---	0.83	1.2	V

Note :

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.