

General Description

The CMS8125 uses advanced trench technology to provide excellent RDS(ON) and ultra-low low gate charge. This device is suitable for use as a load switch or in PWM applications.

Features

- RDS(ON)=5.3mΩ @ VGS=-10V
- RDS(ON)=7.5mΩ @ VGS=-4.5V
- Ultra low On-Resistance.
- Surface mount package.

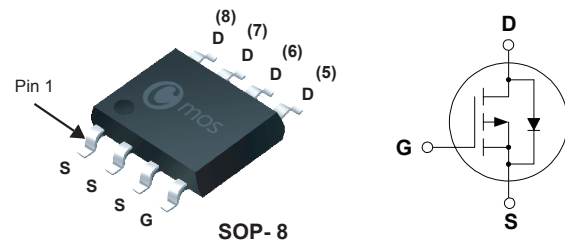
Product Summary

BVDSS	RDSON	ID
-25V	5.3mΩ	-18A

Applications

- Inverter Switch
- Synchronous Rectifier
- Load Switch
- DC/DC Converter

SOP-8 Pin Configuration



Type	Package	Marking
CMS8125	SOP- 8	CMS8125

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

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	-25	V
V _{GS}	Gate-Source Voltage	±20	V
I _D	Continuous Drain Current	-18	A
I _{DM}	Pulsed Drain Current	-60	A
P _{D@T_A=25°C}	Total Power Dissipation	2	W
T _{STG}	Storage Temperature Range	-55 to 150	°C
T _J	Operating Junction Temperature Range	150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R _{θJA}	Thermal Resistance, Junction-to-Ambient	---	65.8	°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	$V_{GS}=0V, I_D=-250\mu A$	-25	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V, I_D=-20A$	---	---	5.3	m Ω
		$V_{GS}=-4.5V, I_D=-15A$	---	---	7.5	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}, I_D = -250\mu A$	-1	---	-2.5	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-24V, V_{GS}=0V$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS} = \pm 20V, V_{DS}=0V$	---	---	± 100	nA
gfs	Forward Transconductance	$V_{DS}=-5V, I_D=-5A$	---	25	---	S
Q_g	Total Gate Charge	$V_{DD}=-24V, V_{GS}=-10V, I_D=-18A$	---	160	---	nC
Q_{gs}	Gate-Source Charge		---	20	---	
Q_{gd}	Gate-Drain Charge		---	40	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=-15V, V_{GS}=-10V, R_L=1.7\Omega, I_D=-9A$	---	10	---	ns
T_r	Rise Time		---	20	---	
$T_{d(off)}$	Turn-Off Delay Time		---	275	---	
T_f	Fall Time		---	780	---	
C_{iss}	Input Capacitance	$V_{DS}=-10V, V_{GS}=0V, f=1MHz$	---	2000	---	pF
C_{oss}	Output Capacitance		---	1200	---	
C_{rss}	Reverse Transfer Capacitance		---	1440	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_{SD}=-15A$	---	---	-1.2	V

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