

P-Channel Enhancement Mode Field Effect Transistor

General Description

The CMSA5950A uses advanced technology to provide excellent RDS (ON) . This device is suitable to be used as the low side FET in SMPS, load switching and general purpose.

Features

- Low On-Resistance
- 100% avalanche tested
- Small Footprint (5x6 mm) for Compact Design
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-100	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current	-50	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	-35	A
I_{DM}	Pulsed Drain Current	-150	A
EAS	Single Pulse Avalanche Energy ¹	220	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	140	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
$R_{\theta JA}$	Junction-to-Ambient	---	25	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case	---	0.89	$^\circ\text{C}/\text{W}$

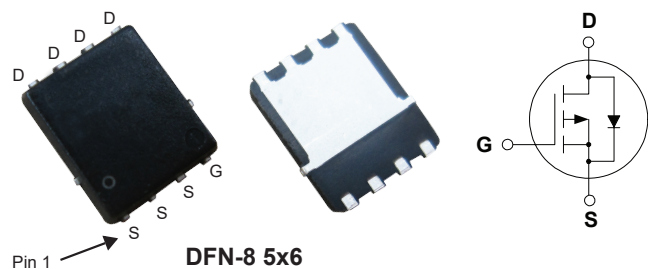
Product Summary

BVDSS	RDSON	ID
-100V	52m Ω	-50A

Applications

- Load Switch
- Power Management in Notebook Computer, Portable Equipment and Battery Powered Systems.

DFN-8 5x6 Pin Configuration



Type	Package	Marking
CMSA5950A	DFN-8 5*6	CMSA5950A

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=-250\mu A$	-100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V$, $I_D=-10A$	---	---	52	m Ω
		$V_{GS}=-6V$, $I_D=-8A$	---	---	62	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=-250\mu A$	-2	---	-4	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-100V$, $V_{GS}=0V$, $T_J=25^\circ\text{C}$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=-10V$, $I_D=-10A$	---	21	---	S
R_g	Gate Resistance	$V_{DS}=0V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	46	---	Ω
Q_g	Total Gate Charge	$V_{DS}=-50V$, $I_D=-5A$ $V_{GS}=-10V$	---	41	---	nC
Q_{gs}	Gate-Source Charge		---	8	---	
Q_{gd}	Gate-Drain Charge		---	9	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DD}=-50V$, $V_{GS}=-10V$, $R_G=6\Omega$ $I_D=-5A$	---	14	---	ns
T_r	Rise Time		---	40	---	
$T_{d(off)}$	Turn-Off Delay Time		---	100	---	
T_f	Fall Time		---	105	---	
C_{iss}	Input Capacitance	$V_{DS}=-25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	6100	---	pF
C_{oss}	Output Capacitance		---	194	---	
C_{rss}	Reverse Transfer Capacitance		---	100	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	$V_G=V_D=0V$, Force Current	---	---	-50	A
I_{SM}	Pulsed Source Current		---	---	-150	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_F=-10A$	---	---	-1.2	V

Note :

1.The EAS data shows Max. rating . The test condition is $V_{DD}=-80V$, $V_{GS}=-10V$, $L=1\text{mH}$, $I_{AS}=-21A$.

This product has been designed and qualified for the consumer market.

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Cmos reserves the right to improve product design ,functions and reliability without notice.

Typical Characteristics

