

General Description

The CMF5950A uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications.

Features

- P-Channel
- Low ON-resistance.
- Fast Switching
- 100% avalanche tested

Product Summary

BVDSS	$R_{DS(ON)}$	ID
-100V	52m Ω	-35A

Applications

- Inverters
- Motor drive
- DC / DC converter

TO-220F Pin Configuration



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	-35	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current	-24	A
I_{DM}	Pulsed Drain Current	-140	A
EAS	Single Pulse Avalanche Energy ¹	220	mJ
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	35	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62.5	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	3.57	$^\circ\text{C/W}$

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=-250\mu A$	-100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=-10V$, $I_D=-20A$	---	44	52	m Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=-250\mu A$	-2	---	-4	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-100V$, $V_{GS}=0V$	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
g_{fs}	Forward Transconductance	$V_{DS}=-10V$, $I_D=-10A$	---	20	---	S
Q_g	Total Gate Charge	$I_D=-20A$	---	75	---	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=-50V$	---	13	---	
Q_{gd}	Gate-Drain Charge	$V_{GS}=-10V$	---	16	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=-50V$	---	25	---	ns
T_r	Rise Time	$I_D=-10A$	---	90	---	
$T_{d(off)}$	Turn-Off Delay Time	$R_L=5.6\Omega$	---	310	---	
T_f	Fall Time	$V_{GS}=-10V$	---	100	---	
C_{iss}	Input Capacitance	$V_{DS}=-25V$, $V_{GS}=0V$, $f=1\text{MHz}$	---	5300	---	pF
C_{oss}	Output Capacitance		---	200	---	
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	---	---	-35	A
I_{SM}	Pulsed Source Current		---	---	-140	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_S=-10A$, $T_J=25^\circ\text{C}$	---	-0.83	-1.2	V

Note :

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

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Typical Characteristics

