CMP5950A/CMB5950A

P-Channel Silicon MOSFET

General Description

The 5950A uses advanced trench technology and design to provide excellent RDS(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

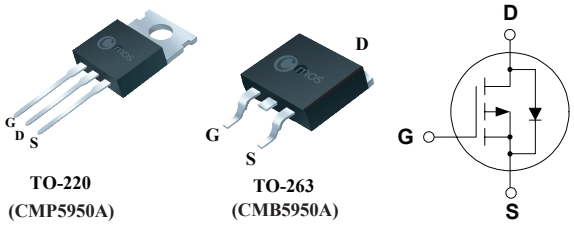
Product Summary

BVDSS	RDSON	ID
-100V	52mΩ	-35A

Applications

- Inverters
- Motor drive
- DC / DC converter

TO-220/263 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℃	Continuous Drain Current	-35	A
I_D@T_C=100℃	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℃	Total Power Dissipation	120	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	150	℃

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.04	℃/W

Electrical Characteristics (T_J=25℃ , unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=-250uA	-100	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-10V, I_D=-20A	---	45	52	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250uA	-2	---	-4	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-100V, V_{GS}=0V	---	---	-1	uA
I_{GSS}	Gate-Source Leakage Current	V_{GS} =±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=-10V , I_D =-10A	---	20	---	S
R_g	Gate Resistance	V_{DS}=0V , V_{GS}=0V , f=1MHz	---	50	---	Ω
Q_g	Total Gate Charge	V_{DS}=-50V, I_D=-10A V_{GS}=-4.5V	---	55	---	nC
Q_{gs}	Gate-Source Charge		---	15	---	
Q_{gd}	Gate-Drain Charge		---	26	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=-50V, V_{GEN} =-10V, R_L=6.3Ω R_g =1Ω , I_D≅-8A	---	14	---	ns
T_r	Rise Time		---	20	---	
$T_{d(off)}$	Turn-Off Delay Time		---	111	---	
T_f	Fall Time		---	100	---	
C_{iss}	Input Capacitance	V_{DS}=-25V, V_{GS}=0V , f=1MHz	---	7000	---	pF
C_{oss}	Output Capacitance		---	230	---	
C_{rss}	Reverse Transfer Capacitance		---	170	---	

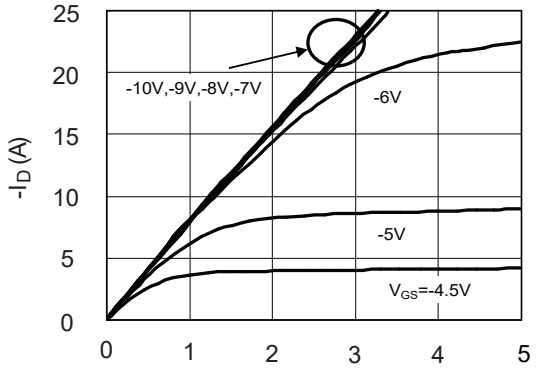
Diode Characteristics

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=-10 A, T_J=25℃	---	-0.83	-1.2	V

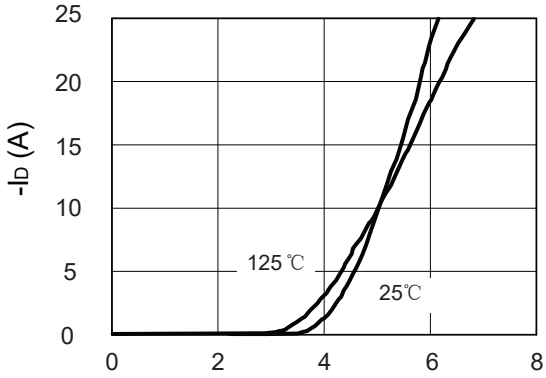
Note :

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

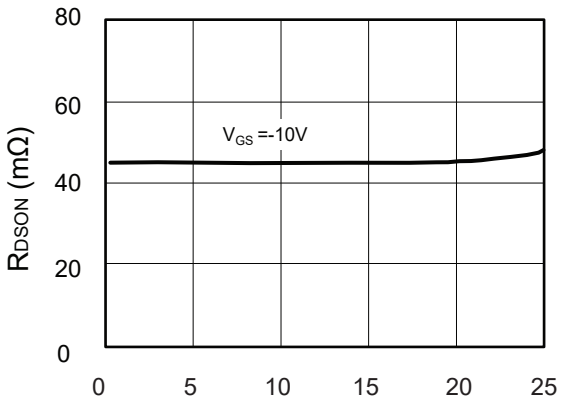
Typical Characteristics



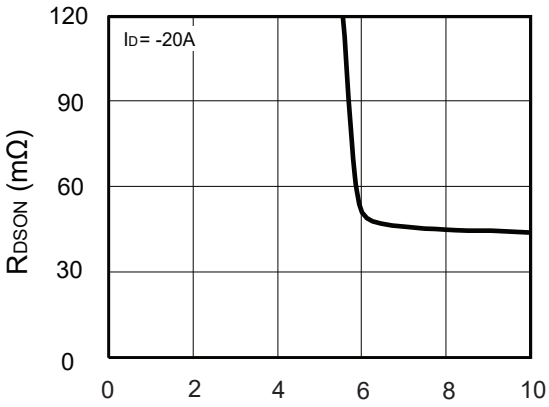
Output Characteristics



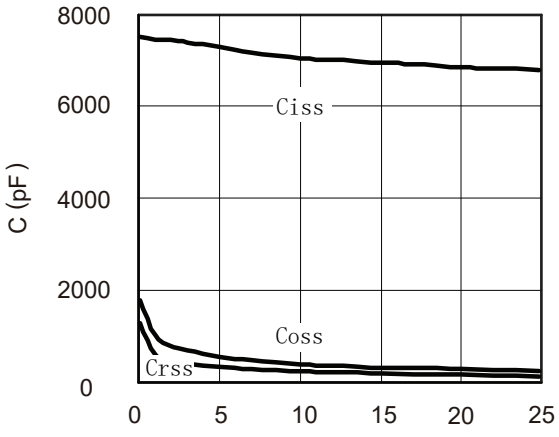
transfer characteristics



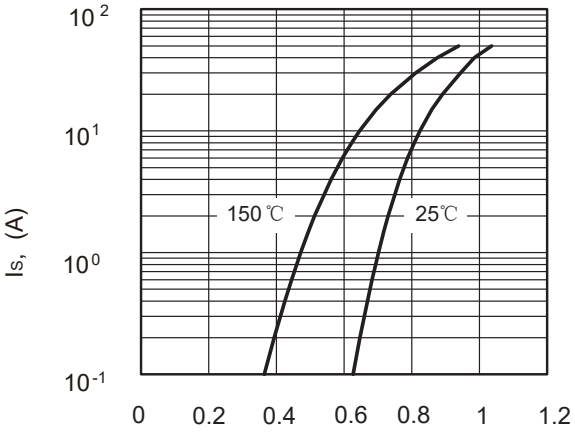
drain-source on-resistance



On-Resistance vs. Gate-to-Source Voltage



Capacitance Characteristics



Body-Diode Characteristics