

### General Description

The 5951 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

### Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	-100	V
$V_{GS}$	Gate-Source Voltage	±20	V
$I_D@T_C=25^\circ C$	Continuous Drain Current	-30	A
$I_{DM}$	Pulsed Drain Current	-90	A
$E_{AS}$	Single Pulse Avalanche Energy	270	mJ
$P_D@T_C=25^\circ C$	Total Power Dissipation	120	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
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	50	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.25	°C/W

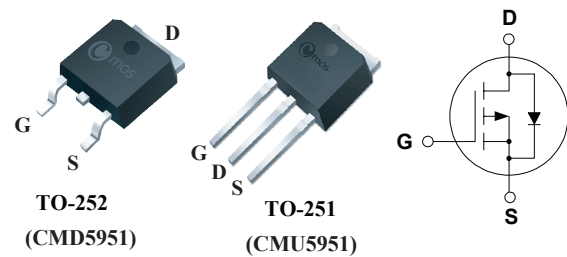
### Product Summary

BVDSS	R <sub>DS(on)</sub> max.	ID
-100V	65mΩ	-30A

### Applications

- Inverters
- Motor drive
- DC / DC converter

### TO-252/251 Pin Configuration



### Electrical Characteristics (T<sub>J</sub>=25 °C, unless otherwise noted)

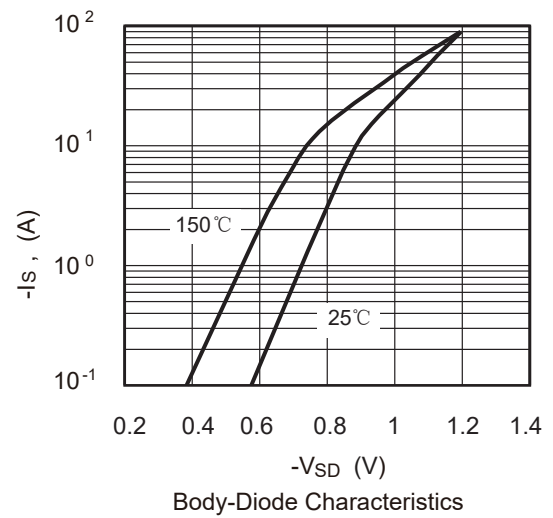
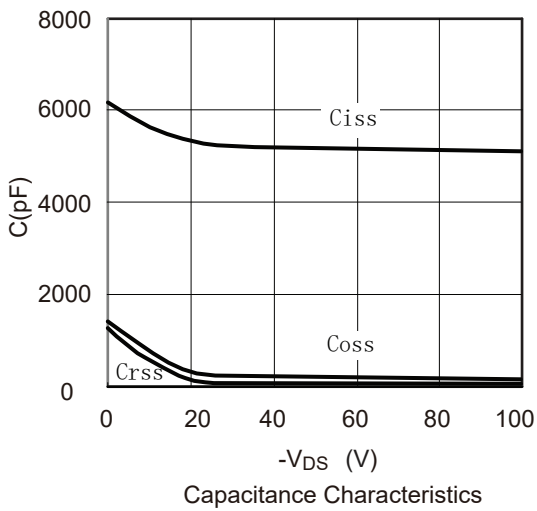
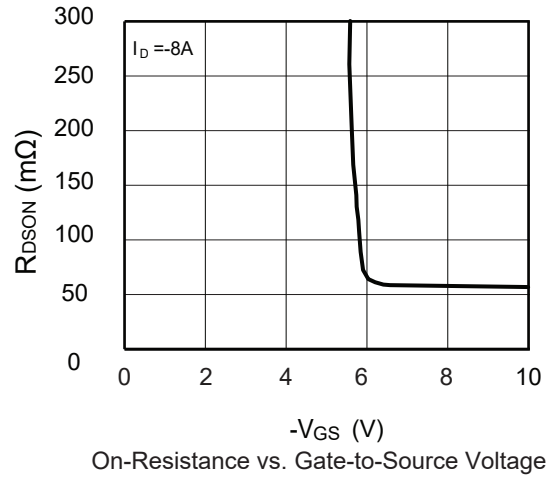
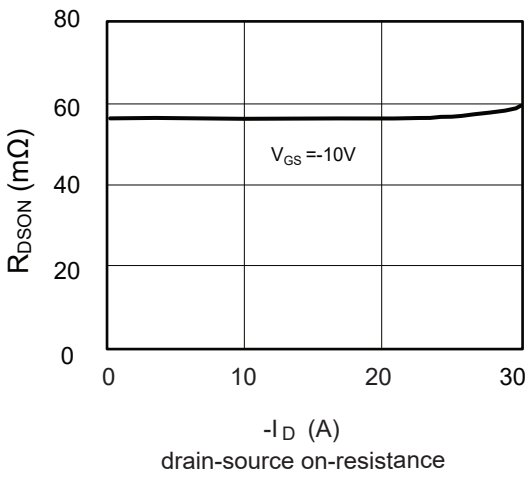
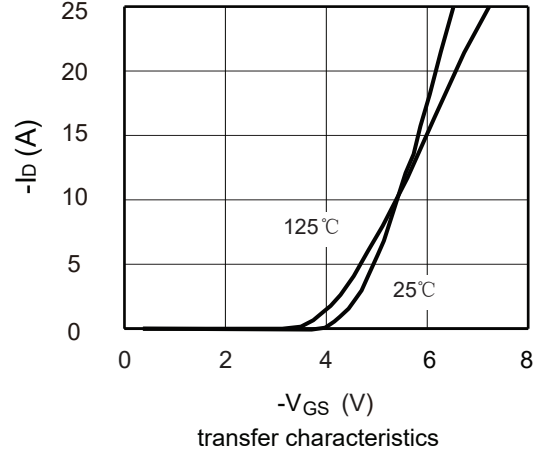
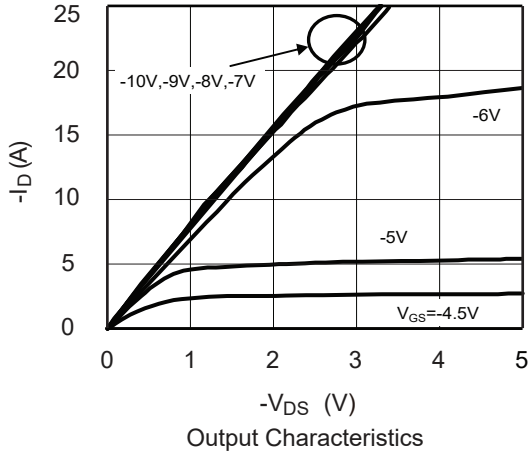
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =-250uA	-100	---	---	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance	V <sub>GS</sub> =-10V, I <sub>D</sub> =-20A	---	50	65	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-10A	---	55	70	
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =-250uA	-2	---	-4	V
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =-100V, V <sub>GS</sub> =0V	---	---	-1	uA
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	---	---	±100	nA
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =-15V, I <sub>D</sub> =-10A	---	16	---	S
Q <sub>g</sub>	Total Gate Charge	I <sub>D</sub> =-15A V <sub>DS</sub> =-50V V <sub>GS</sub> =-10V	---	90	---	nC
Q <sub>gs</sub>	Gate-Source Charge		---	15	---	
Q <sub>gd</sub>	Gate-Drain Charge		---	35	---	
T <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DD</sub> =-50V I <sub>D</sub> =-15A R <sub>GEN</sub> =9.1Ω V <sub>GS</sub> =-10V	---	20	---	ns
T <sub>r</sub>	Rise Time		---	80	---	
T <sub>d(off)</sub>	Turn-Off Delay Time		---	45	---	
T <sub>f</sub>	Fall Time		---	65	---	
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =-25V, V <sub>GS</sub> =0V, f=1MHz	---	5300	---	pF
C <sub>oss</sub>	Output Capacitance		---	157	---	
C <sub>rss</sub>	Reverse Transfer Capacitance		---	47	---	

### Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
t <sub>rr</sub>	Reverse Recovery Time	I <sub>S</sub> =-15A dI/dt=-100A/μs	---	90	---	ns
Q <sub>rr</sub>	Reverse Recovery Charge		---	70	---	nC
V <sub>SD</sub>	Diode Forward Voltage	V <sub>GS</sub> =0V, I <sub>S</sub> =-15A	---	---	-1.2	V

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

Typical Characteristics



Typical Characteristics

