

General Description

The CMP5940B 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	-25	A
I_{DM}	Pulsed Drain Current	-75	A
I_{AS}	Avalanche Current	-25	A
$P_D@T_C=25^\circ C$	Total Power Dissipation	55	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ C$
T_J	Operating Junction Temperature Range	150	$^\circ C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62.5	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-case	---	1.5	$^\circ C/W$

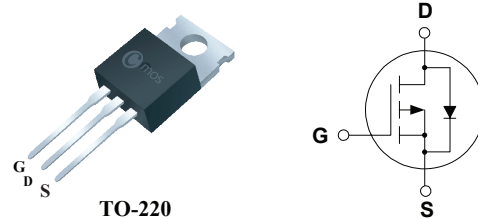
Product Summary

BVDSS	RDSON	ID
-100V	120m Ω	-25A

Applications

- Inverters
- Motor drive
- DC / DC converter

TO-220 Pin Configuration



Type	Package	Marking
CMP5940B	TO-220	CMP5940B

Electrical Characteristics (T_J=25 °C, 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 =-15A	---	---	120	mΩ
		V _{GS} =-4.5V, I _D =-10A	---	---	130	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =-250 uA	-2	---	-4	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-85V, V _{GS} =0V	---	---	-1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =-10V, I _D =-15A	---	18	---	S
Q _g	Total Gate Charge	I _D = -20A V _{DS} = -50V V _{GS} = -10V	---	65	---	nC
Q _{gs}	Gate-Source Charge		---	10	---	
Q _{gd}	Gate-Drain Charge		---	16	---	
T _{d(on)}	Turn-On Delay Time	V _{DS} = -50V I _D = -10A R _L = 5.6Ω V _{GS} = -10V	---	20	---	ns
T _r	Rise Time		---	100	---	
T _{d(off)}	Turn-Off Delay Time		---	280	---	
T _f	Fall Time		---	150	---	
C _{iss}	Input Capacitance	V _{DS} =-20V, V _{GS} =0V, f=1MHz	---	2900	---	pF
C _{oss}	Output Capacitance		---	250	---	
C _{rss}	Reverse Transfer Capacitance		---	180	---	

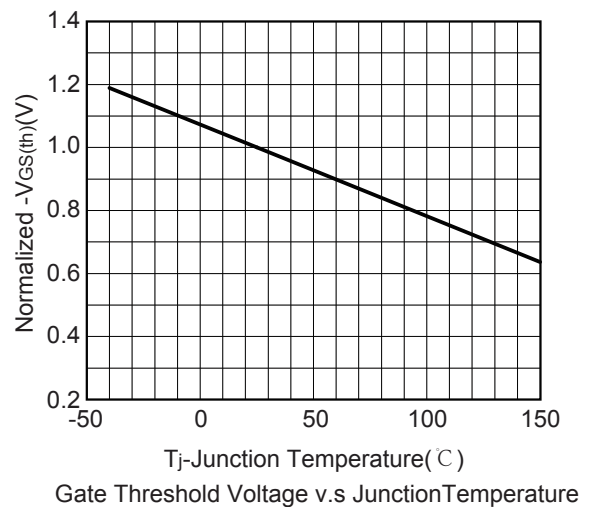
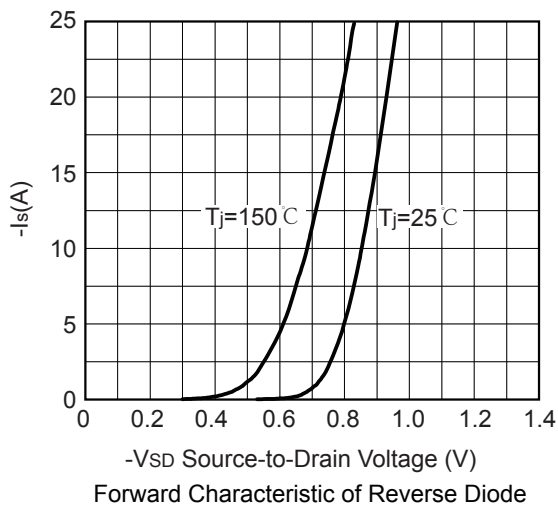
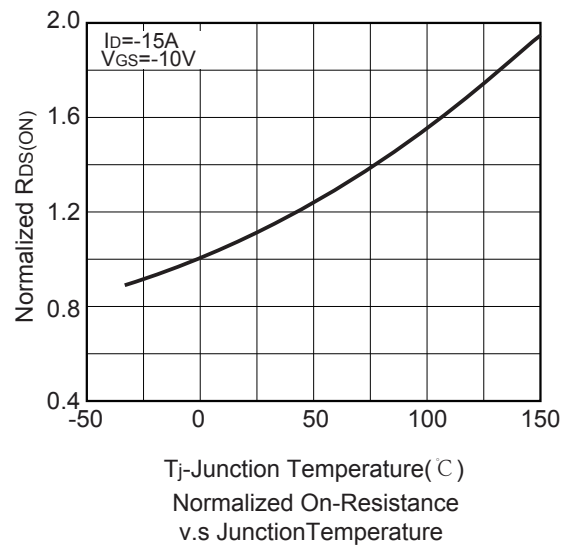
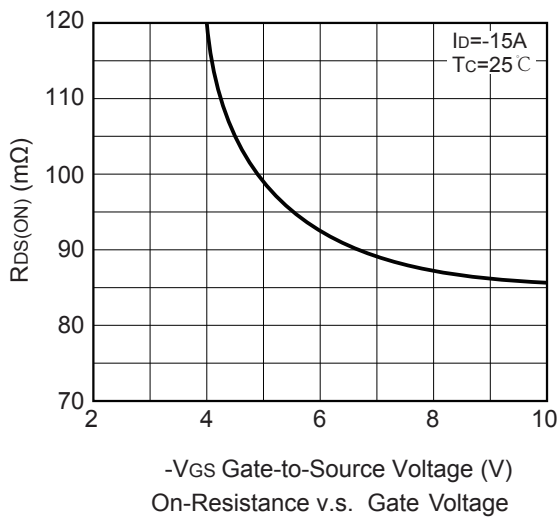
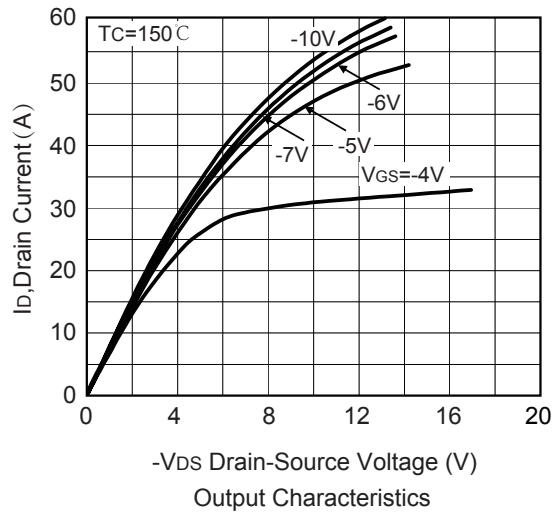
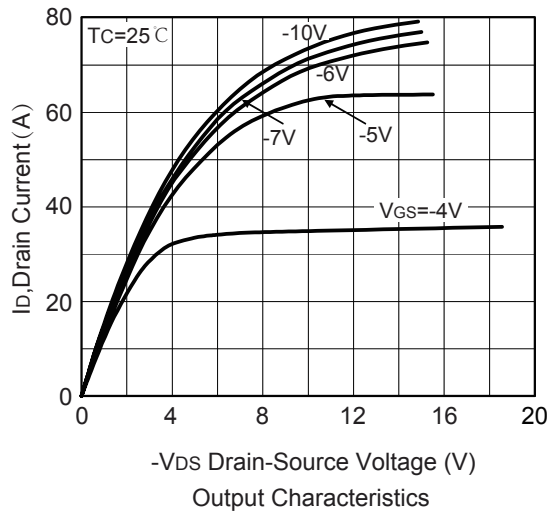
Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
t _{rr}	Reverse Recovery Time	I _S =-20A dI/dt=-100A/μs	---	55	---	ns
Q _{rr}	Reverse Recovery Charge		---	140	---	nC
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _S =-15A	---	---	-1.3	V

This product has been designed and qualified for the consumer market.
 Cmos assumes no liability for customers' product design or applications.
 Cmos reserves the right to improve product design, functions and reliability without notice.

Typical Characteristics

P-Channel Silicon MOSFET



Typical Characteristics

