

General Description

The CMP5970 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	-150	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
I_{AS}	Avalanche Current	-30	A
$P_D@T_C=25^\circ C$	Total Power Dissipation	200	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	---	2	$^\circ C/W$

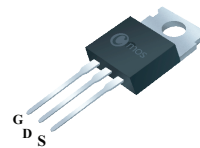
Product Summary

BVDSS	RDSON	ID
-150V	85m Ω	-30A

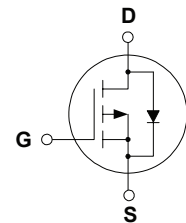
Applications

- Inverters
- Motor drive
- DC / DC converter

TO-220 Pin Configuration



TO-220
(CMP5970)



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	-150	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =-10V, I _D =-10A	---	75	85	mΩ
		V _{GS} =-4.5V, I _D =-8A	---	160	180	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =-250 uA	-1	---	-3	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
g _{fs}	Forward Transconductance	V _{DS} = -10V, I _D = -10A	---	---	40	S
Q _g	Total Gate Charge	I _D = -20A V _{DS} = -80V V _{GS} = -10V	---	65	---	nC
Q _{gs}	Gate-Source Charge		---	10	---	
Q _{gd}	Gate-Drain Charge		---	17	---	
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		---	80	---	
T _{d(off)}	Turn-Off Delay Time		---	250	---	
T _f	Fall Time		---	90	---	
C _{iss}	Input Capacitance	V _{DS} =-20V, V _{GS} =0V , f=1MHz	---	6600	---	pF
C _{oss}	Output Capacitance		---	300	---	
C _{riss}	Reverse Transfer Capacitance		---	200	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
t _{rr}	Reverse Recovery Time	I _S =-8A dI/dt=-100A/μs	---	70	---	ns
Q _{rr}	Reverse Recovery Charge		---	230	---	nC
V _{SD}	Diode Forward Voltage	V _{GS} =0V , I _S =-20A	---	---	-1.3	V

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