

commodore semiconductor group NMOS

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6529 SINGLE PORT INTERFACE

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DESCRIPTION

The 6529 is a static microprocessor compatible, 8-bit I/O Port with passive output pull-up devices. Data is written to the port when \overline{CS} and R/W are low. Data is read from the port when \overline{CS} is low and R/W is high. The passive output pull-ups allow a single bit to act as either an input or an output without I/O mode switching.

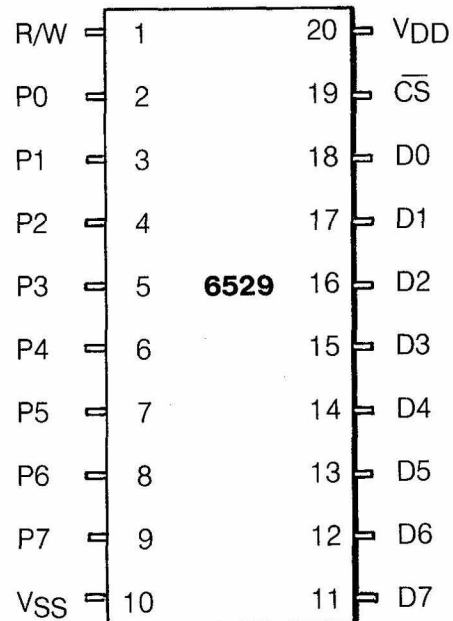
This device is provided with special circuitry to provide power-on reset. Under normal fast power-on conditions the outputs will initialize in the input high impedance state. With very slow or noisy power-up, there is some possibility the device will initialize with outputs driven low. It is recommended that the 6529 be interfaced to open collector output type devices.

TRUTH TABLE

CS	R/W	D ₀ -D ₇
L	L	Write to Output
L	H	Read from Input
H	X	Isolation

L = LOW Level
H = HIGH Level
X = Irrelevant

PIN CONFIGURATION



ORDER INFORMATION

MXS 6529

FREQUENCY RANGE
NO SUFFIX = 1 MHz
A = 2 MHz
B = 3 MHz

PACKAGE DESIGNATOR
C = Ceramic
P = Plastic



MAXIMUM RATINGS

RATING	SYMBOL	VALUE	UNIT
SUPPLY VOLTAGE	VCC	-0.3 to +7.0	Vdc
INPUT VOLTAGE	Vin	-0.3 to +7.0	Vdc
OPERATING TEMPERATURE RANGE	TA	0 to +70	°C
STORAGE TEMPERATURE RANGE	Tstg	-55 to +150	°C

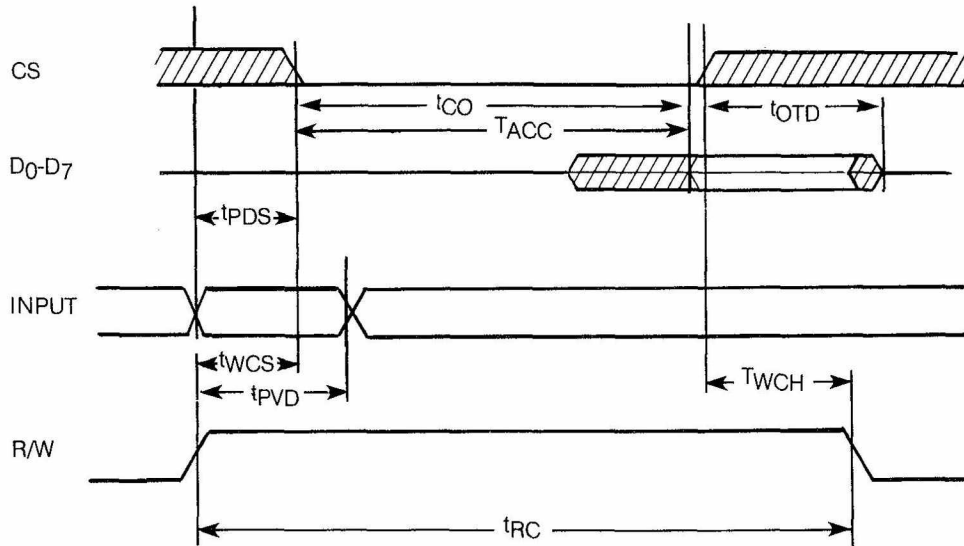
This device contains circuitry to protect the inputs against damage due to high static voltages, however, it is advised that normal precautions be taken to avoid application of any voltage higher than maximum rated voltages to this circuit.

CHARACTERISTICS (VCC = 5.0V ± 5%, VSS = 0V, TA = 0° to 70°C)

CHARACTERISTIC	SYMBOL	MIN	MAX	UNIT
Input High Voltage (Normal Operating Levels)	V _{IH}	+2.0	VCC	Vdc
Input Low Voltage (Normal Operating Levels)	V _{IL}	-0.3	+8	Vdc
Input Leakage Current V _{in} = 0 to 5.0Vdc WRITE, CS	I _{IN}	—	±2.5	μA _{dc}
Three-State (Off State Input Current) (V _{in} = 0.4 to 2.4 Vdc, VCC = Max) D ₀ -D ₇	I _{TSI}	—	±10	μA _{dc}
Output High Voltage (VCC = Min, Load = -600μA _{dc} , P ₀ -P ₇) (VCC = Min, Load = -200μA _{dc} , D ₀ -D ₇)	V _{OH}	2.4	—	Vdc
Output Low Voltage (VCC = Max, Load = 6.4mA _{dc} , P ₀ -P ₇) (VCC = Max, Load = 3.2mA, D ₀ -D ₇)	V _{OL}	—	+0.4	Vdc
Output High Current (Sourcing) (V _{OH} = 2.4 Vdc)	P ₀ -P ₇ D ₀ -D ₇ I _{OH} I _{OH}	-600 -200	—	μA _{dc} μA _{dc}
Output Low Current (Sinking) (V _{OL} = 0.4 Vdc)	P ₀ -P ₇ D ₀ -D ₇ I _{OL} I _{OL}	6.4 3.2	—	mA _{dc} mA _{dc}
Supply Current	I _{CC}	—	80	mA

NOTE: Negative sign indicates outward current flow, positive indicates inward flow.

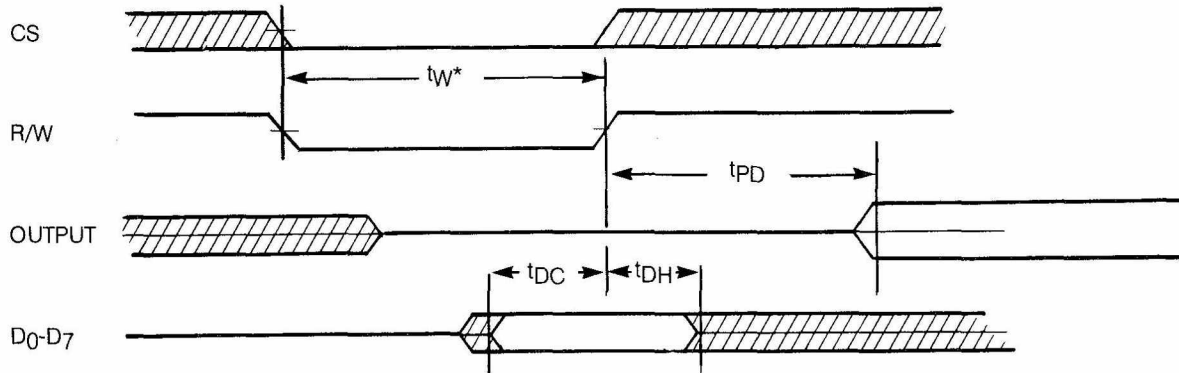
READ CYCLE TIMING DIAGRAM



READ CYCLE CHARACTERISTICS

Symbol	Parameter	1MHz		2MHz		3MHz		UNITS
		MIN	MAX	MIN	MAX	MIN	MAX	
t_{ACC}	Access time		450		225		160	nS
t_{CO}	Chip Select to Output Valid		450		225		160	nS
t_{OTD}	Chip Deselected to Output Off	20	120	20	120	20	120	nS
t_{PDS}	Peripheral Data Set-Up	120		60		40		nS
t_{PVD}	Peripheral Data Valid	150		150		150		nS
t_{WCS}	Write to CS Setup	0		0		0		nS
t_{WCR}	Write to CS Hold	0		0		0		nS

WRITE CYCLE TIMING DIAGRAM



WRITE CYCLE CHARACTERISTICS

Symbol	Parameter	1MHz		2MHz		3MHz		UNITS
		MIN	MAX	MIN	MAX	MIN	MAX	
t_W^*	Write Pulse Width	450		225		160		nS
t_{DC}	Data to \overline{CS} Overlap	150		100		100		nS
t_{DH}	Data Hold	0		0		0		nS
t_{PD}	Write to Peripheral Output		1000		500		330	nS

* t_W is measured from the latter of \overline{CS} or R/W going low to the earlier of \overline{CS} or R/W going high.

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