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6529 SINGLE PORT INTERFACE

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
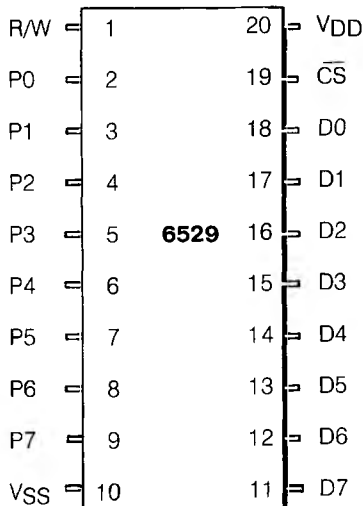
ORDER INFORMATION

MXS 6529 _ _ _

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

PACKAGE DESIGNATOR
C = Ceramic
P = Plastic

PIN CONFIGURATION

		6529		
R/W	1		20	V_{DD}
P0	2		19	$\overline{CS}$
P1	3		18	D0
P2	4		17	D1
P3	5		16	D2
P4	6		15	D3
P5	7		14	D4
P6	8		13	D5
P7	9		12	D6
V_{SS}	10		11	D7

MAXIMUM RATINGS

| RATING	SYMBOL	VALUE	UNIT
SUPPLY VOLTAGE	V_{CC}	−0.3 to +7.0	Vdc
INPUT VOLTAGE	V_{in}	−0.3 to +7.0	Vdc
OPERATING TEMPERATURE RANGE	T_A	0 to +70	°C
STORAGE TEMPERATURE RANGE	T_{stg}	−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 (V_{CC} = 5.0V ± 5%, V_{SS} = 0V, T_A = 0° to 70°C)

CHARACTERISTIC	SYMBOL	MIN	MAX	UNIT
Input High Voltage (Normal Operating Levels)	V_{IH}	+2.0	V_{CC}	Vdc
Input Low Voltage (Normal Operating Levels)	V_{IL}	−0.3	+.8	Vdc
Input Leakage Current V_{in} = 0 to 5.0Vdc $\overline{WRITE}$, $\overline{CS}$	I_{IN}	—	±2.5	µAdc
Three-State (Off State Input Current) (V_{in} = 0.4 to 2.4 Vdc, V_{CC} = Max) D_0-D_7	I_{TSI}	—	±10	µAdc
Output High Voltage (V_{CC} = Min, Load = −600µAdc, P_0-P_7) (V_{CC} = Min, Load = −200µAdc, $D_0 D_7$)	V_{OH}	2.4	—	Vdc
Output Low Voltage (V_{CC} = Max, Load = 6.4mAdc, P_0-P_7) (V_{CC} = Max, Load = 3.2mA, D_0-D_7)	V_{OL}	—	+0.4	Vdc
Output High Current (Sourcing) $\quad P_0$-P_7 (V_{OH} = 2.4 Vdc) $\qquad\qquad\quad D_0$-D_7	I_{OH} I_{OH}	−600 −200	— —	µAdc µAdc
Output Low Current (Sinking) $\quad P_0$-P_7 (V_{OL} = 0.4 Vdc) $\qquad\qquad\quad D_0$-D_7	I_{OL} I_{OL}	6.4 3.2	— —	mAdc mAdc
Supply Current	I_{CC}	—	80	mA

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

READ CYCLE TIMING DIAGRAM
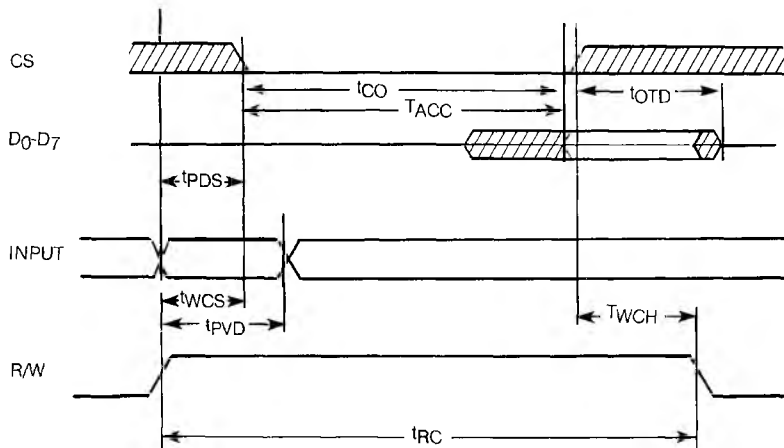
READ CYCLE CHARACTERISTICS

Symbol	Parameter	1MHz		2MHz		3MHz		
		MIN	MAX	MIN	MAX	MIN	MAX	UNITS
tACC	Access time		450		225		160	nS
tCO	Chip Select to Output Valid		450		225		160	nS
tOTD	Chip Deselected to Output Off	20	120	20	120	20	120	nS
tPDS	Peripheral Data Set-Up	120		60		40		nS
tPVD	Peripheral Data Valid	150		150		150		nS
tWCS	Write to CS Setup	0		0		0		nS
tWCR	Write to CS Hold	0		0		0		nS

WRITE CYCLE TIMING DIAGRAM
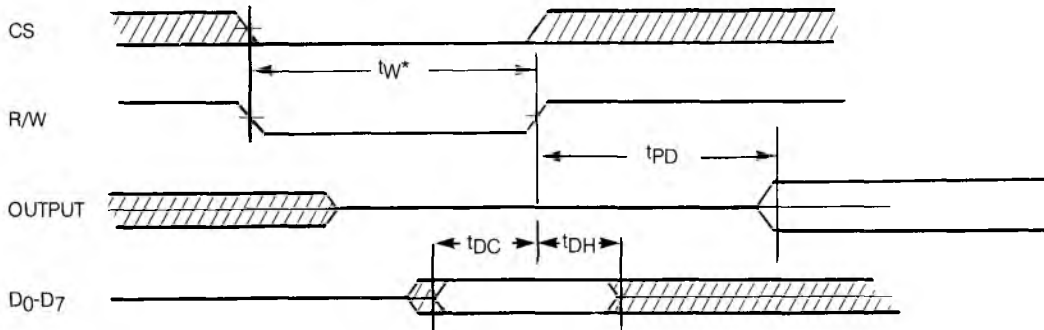
WRITE CYCLE CHARACTERISTICS

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.