

DM74LS573

Octal D Latch with TRI-STATE® Outputs

General Description

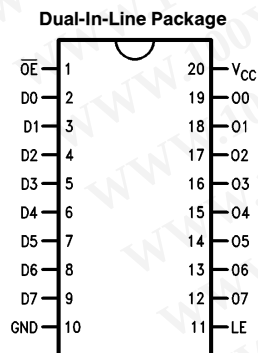
The 'LS573 is a high speed octal latch with buffered common Latch Enable (LE) and buffered common Output Enable ($\overline{OE}$) inputs.

This device is functionally identical to the 'LS373, but has different pinouts. For truth tables, discussion of operations and AC and DC specifications, please refer to the 'LS373 data sheet.

Features

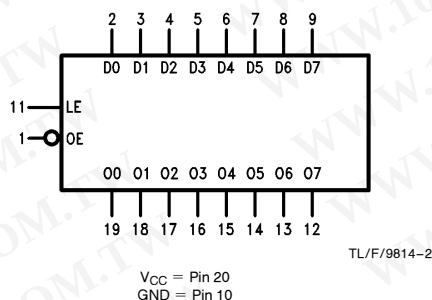
- Inputs and outputs on opposite sides of package allowing easy interface with microprocessors
- Useful as input or output port for microprocessors
- Functionally identical to 'LS373
- Input clamp diodes limit high speed termination effects
- Fully TTL and CMOS compatible

Connection Diagram



TL/F/9814-1

Logic Symbol



Order Number DM74LS573WM or DM74LS573N
See NS Package Number M20B or N20A

Pin Names	Description
D0–D7	Data Inputs
LE	Latch Enable Input (Active HIGH)
$\overline{OE}$	TRI-STATE Output Enable Input (Active LOW)
O0–O7	TRI-STATE Latch Outputs

Function Table

OUTPUT Enable	Latch Enable	D	Output $\overline{O}$
L	H	H	H
L	H	L	L
L	L	X	Q_0
H	X	X	Z

L = Low State, H = High State, X = Don't Care

Z = High Impedance State

Q_0 = Previous Condition of O

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Absolute Maximum Ratings (Note)

If Military/Aerospace specified devices are required, please contact the National Semiconductor Sales Office/Distributors for availability and specifications.

Supply Voltage	7V
Input Voltage	7V
Operating Free Air Temperature Range DM74LS	0°C to +70°C
Storage Temperature Range	−65°C to +150°C

Note: The "Absolute Maximum Ratings" are those values beyond which the safety of the device cannot be guaranteed. The device should not be operated at these limits. The parametric values defined in the "Electrical Characteristics" table are not guaranteed at the absolute maximum ratings. The "Recommended Operating Conditions" table will define the conditions for actual device operation.

Recommended Operating Conditions

Symbol	Parameter	DM74LS			Units
		Min	Nom	Max	
V _{CC}	Supply Voltage	4.75	5	5.25	V
V _{IH}	High Level Input Voltage	2			V
V _{IL}	Low Level Input Voltage			0.8	V
I _{OH}	High Level Input Current			−2.6	mA
I _{OL}	Low Level Output Current			24	mA
T _A	Free Air Operating Temperature	0		70	°C

Electrical Characteristics

Over recommended operating free air temperature range (unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ (Note 1)	Max	Units
V _I	Input Clamp Voltage	V _{CC} = Min, I _I = −18 mA			−1.5	V
V _{OH}	High Level Output Voltage	V _{CC} = Min, I _{OH} = Max, V _{IL} = Max	2.7	3.4		V
V _{OL}	Low Level Output Voltage	V _{CC} = Min, I _{OL} = Max, V _{IH} = Min		0.35	0.5	V
		I _{OL} = 4 mA, V _{CC} = Min		0.25	0.4	
I _I	Input Current @ Max Input Voltage	V _{CC} = Max, V _I = 7V			1	mA
I _{IH}	High Level Input Current	V _{CC} = Max, V _I = 2.7V			20	μA
I _{IL}	Low Level Input Current	V _{CC} = Max, V _I = 0.4V			−0.4	mA
I _{OS}	Short Circuit Output Current	V _{CC} = Max (Note 2)	−30		−130	mA
I _{CC}	Supply Current	V _{CC} = Max			50	mA
I _{OZH}	TRI-STATE Output off Current High	V _{CC} = V _{CCH} V _{OZH} = 2.7V			20	μA
I _{OZL}	TRI-STATE Output off Current Low	V _{CC} = V _{CCH} V _{OZL} = 0.4V			−20	μA

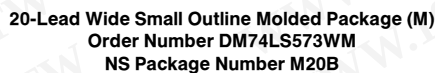
Note 1: All typicals are at V_{CC} = 5V, T_A = 25°C.

Note 2: Not more than one output should be shorted at a time, and the duration should not exceed one second.

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at $V_{CC} = 5V$ and $T_A = 25^{\circ}C$ (see Section 1 for Test Waveforms and output loading)

Physical Dimensions inches (millimeters)



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