



TRI-STATE® Data Selectors/Multiplexers

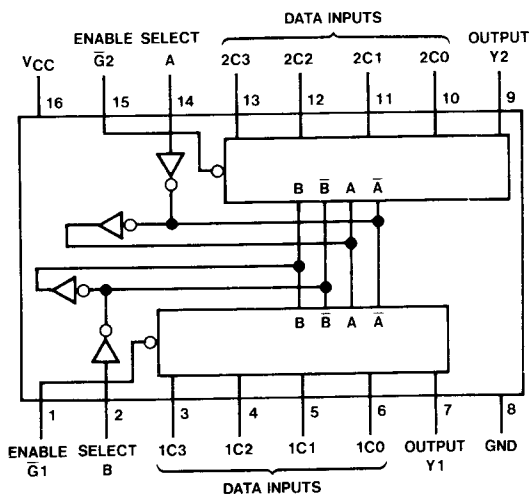
General Description

These devices are the TRI-STATE versions of the very popular DM54153 (DM7214) and DM54150 (DM7219) data selectors/multiplexers. They contain full on-chip decoding to select the desired data input. The DM7214/8214 is a dual, four-line multiplexer, while the DM7219/8219 selects one of sixteen input data lines, depending upon the binary number applied to the select inputs. The DM7214/8214 has common select lines, which therefore select the same input line of both multiplexers. However, the two outputs can be individually controlled by means of the separate enable lines; which, when taken to a high logic level, places the output in the high-impedance TRI-STATE condition. The data at the output of the DM7214/8214 is true, whereas the DM7219/8219 is inverted.

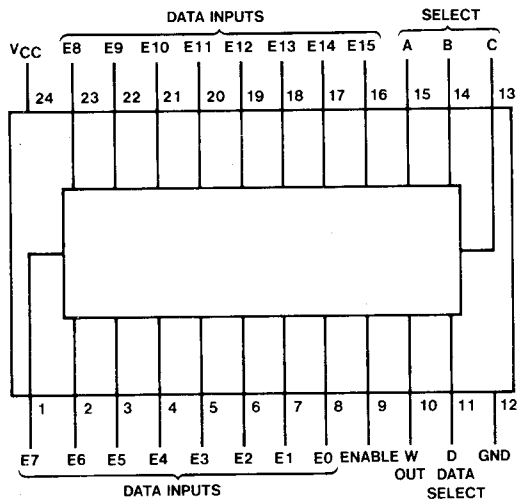
Features

- TRI-STATE pin equivalents to popular 54/74 TTL devices
DM7214/8214 — 54153/74153
DM7219/8219 — 54150/74150
- Typical propagation delay
DM7214/8214 13.5 ns
DM7219/8219 11 ns
- Typical power dissipation
DM7214/8214 170 mW
DM7219/8219 225 mW
- Strobe/enable override

Connection Diagrams



7214 (J,W); 8214 (N)



7219 (J,F); 8219 (N)



Electrical Characteristics

over recommended operating free-air temperature range (unless otherwise noted)

Parameter		Conditions	DM72/82						Units		
			14			19					
			Min	Typ (1)	Max	Min	Typ (1)	Max			
V _{IH}	High Level Input Voltage		2				2			V	
V _{IL}	Low Level Input Voltage				0.8				0.8	V	
V _I	Input Clamp Voltage	V _{CC} = Min, I _I = -12 mA			-1.5				-1.5	V	
V _{OH}	High Level Output Current		DM72		-2.0				-2.0	mA	
			DM82		-5.2			-5.2			
V _{OH}	High Level Output Voltage	V _{CC} = Min, V _{IH} = 2 V V _{IL} = 0.8 V, I _{OH} = Max	2.4				2.4			V	
I _{OL}	Low Level Output Current				16				16	mA	
V _{OL}	Low Level Output Voltage	V _{CC} = Min, V _{IH} = 2 V V _{IL} = 0.8 V, I _{OL} = 16 mA			0.4				0.4	V	
I _{O(OFF)}	Off-State (High-Impedance State) Output Current	V _{CC} = Max V _{IH} = 2 V V _{IL} = 0.8 V			V _O = 0.4 V				-40		μA
					V _O = 2.4 V				40		
I _I	Input Current at Maximum Input Voltage	V _{CC} = Max, V _I = 5.5 V			1				1	mA	
I _{IH}	High Level Input Current	V _{CC} = Max, V _I = 2.4 V			40				40	μA	
I _{IL}	Low Level Input Current	V _{CC} = Max, V _I = 0.4 V			-1.6				-1.6	mA	
I _{OS}	Short Circuit Output Current	V _{CC} = Max (2)	-18		-55	-28			-100	mA	
I _{CC}	Supply Current	V _{CC} = Max (3)	DM72	34	56		45	68	mA		
			DM82	34	65		45	68			

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

Note 2: Not more than one output should be shorted at a time, and for the DM7219/DM8219 duration of short circuit should not exceed one second.

Note 3: I_{CC} is measured with all inputs grounded.

Switching Characteristics

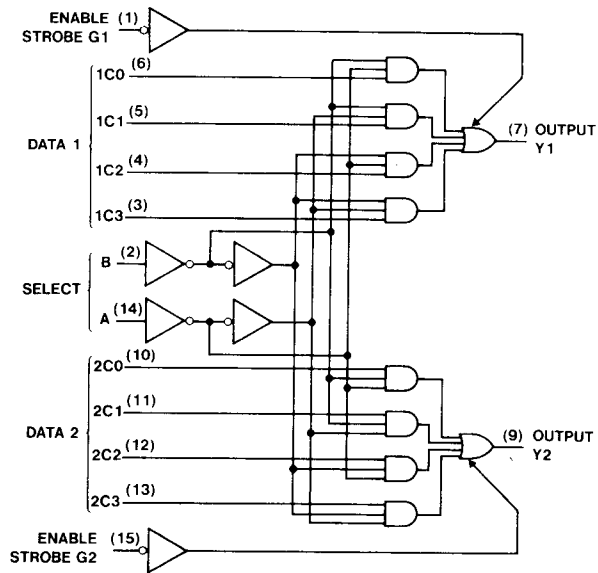
V_{CC} = 5 V, T_A = 25°C

Parameter		From (Input)	To (Output)	Conditions	DM72/82						Units
					14			19			
					Min	Typ	Max	Min	Typ	Max	
t _{PLH}	Propagation Delay Time, Low-to-High Level Output	Data	Output	C _L = 50 pF R _L = 400 Ω		15	23		13	20	ns
t _{PHL}	Propagation Delay Time, High-to-Low Level Output	Data	Output			12	18		9	14	ns
t _{PLH}	Propagation Delay Time, Low-to-High Level Output	Select	Output			20	34		21	35	ns
t _{PHL}	Propagation Delay Time, High-to-Low Level Output	Select	Output			20	34		22	33	ns
t _{ZH}	Output Enable Time to High Level	Enable	Output			12	18		15	23	ns
t _{ZL}	Output Enable Time to Low Level	Enable	Output			14	21		17	27	ns
t _{HZ}	Output Disable Time from High Level	Enable	Output	C _L = 5 pF R _L = 400 Ω		5	10		5	10	ns
t _{LZ}	Output Disable Time from Low Level	Enable	Output			15	23		21	30	ns



Logic Diagrams

14



19

