

**FAIRCHILD DIGITAL**

**TTL**

**COUNTERS (Cont'd)**

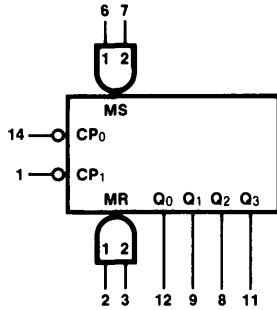
It m	Function	DEVICE NO.	Modulo	Parallel Load*	Clock Transition	Max Clock Rate MHz (Typ)	Clock to Q Output Delay-ns (Typ)	Power Dissipation mW (Typ)	Logic/Connection Diagram	Package(s)
1	Synchronous	<b>93L16</b>	16 Presettable	S	┘	23	26	85	D127	4L,7B,9B
2	Synchronous ✓	<b>93S16</b>	✓ 16 Presettable	S	┘	90	90	410	D127	4L,7B,9B
3	Synchronous	<b>54/74160</b>	10 Presettable	S	┘	32	17	315	D127	4L,7B,9B
4	Synchronous	<b>54LS/74LS160</b>	10 Presettable	S	┘	45	15	95	D127	4L,7B,9B
5	Synchronous	<b>54/74161</b>	16 Presettable	S	┘	32	17	315	D127	4L,7B,9B
6	Synchronous	<b>54LS/74LS161</b>	16 Presettable	S	┘	45	15	95	D127	4L,7B,9B
7	Synchronous	<b>54/74162</b>	10 Presettable	S	┘	32	17	315	D128	4L,7B,9B
8	Synchronous	<b>54LS/74LS162</b>	10 Presettable	S	┘	45	15	95	D128	4L,7B,9B
9	Synchronous	<b>54/74163</b>	16 Presettable	S	┘	32	17	315	D128	4L,7B,9B
10	Synchronous	<b>54LS/74LS163</b>	16 Presettable	S	┘	45	15	95	D128	4L,7B,9B
11	Up/Down	<b>54LS/74LS168</b>	10 Presettable	—	┘	32	15	100	D83	4L,6B,9B
12	Up/Down	<b>54LS/74LS169</b>	16 Presettable	—	┘	32	15	100	D83	4L,6B,9B
13	Up/Down	<b>54/74192</b>	10	A	┘	30	30	325	D129	4L,7B,9B
14	Up/Down	<b>54LS/74LS192</b>	10	A	┘	40	30	85	D129	4L,7B,9B
15	Up/Down	<b>54/74193</b>	16	A	┘	30	30	325	D129	4L,7B,9B
16	Up/Down	<b>54LS/74LS193</b>	16	A	┘	40	30	85	D129	4L,7B,9B
17	Up/Down	<b>54/74190</b>	10	A	┘	25	20	325	D130	4L,7B,9B
18	Up/Down	<b>74LS190</b>	10	A	┘	40	20	90	D130	7B,9B
19	Up/Down	<b>54/74191</b>	16	A	┘	25	20	325	D130	4L,7B,9B
20	Up/Down	<b>74LS191</b>	16	A	┘	40	20	90	D130	7B,9B

\*A = asynchronous, S = synchronous

FAIRCHILD LOGIC/CONNECTION DIAGRAMS

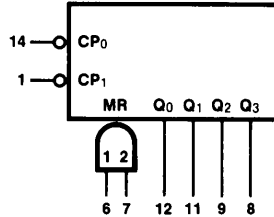
DIGITAL - TTL

**D121**  
54/7490A, 54LS/74LS90



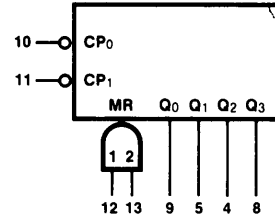
V<sub>CC</sub> = Pin 5  
GND = Pin 10  
NC = Pin 4, 13

**D122**  
54/7492, 74LS92



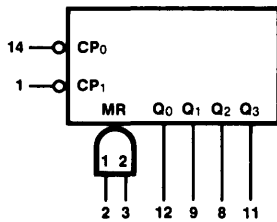
V<sub>CC</sub> = Pin 5  
GND = Pin 10  
NC = 2, 3, 4, 13

**D123**  
54/74293, 54LS/74LS293



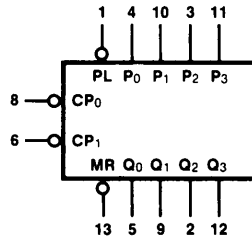
V<sub>CC</sub> = Pin 14  
GND = Pin 7  
NC = Pins 1, 2, 3, 6

**D124**  
54/7493A, 54LS/74LS93



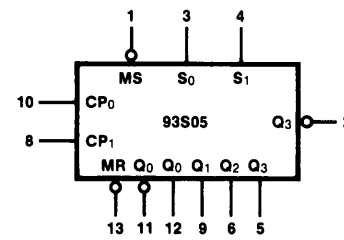
V<sub>CC</sub> = Pin 5  
GND = Pin 10  
NC = Pins 4, 6, 7, 13

**D125**  
54/74176, 54/74177,  
54/74196, 54LS/74LS196,  
54/74197, 54LS/74LS197



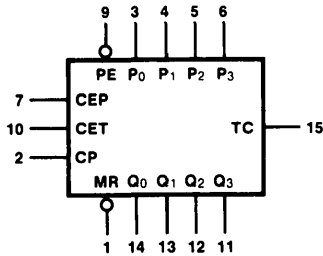
V<sub>CC</sub> = Pin 14  
GND = Pin 7

**D126**  
9305, 93S05



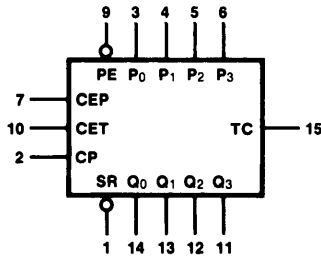
V<sub>CC</sub> = Pin 14  
GND = Pin 7

**D127**  
9310, 93L10, 93S10,  
9316, 93L16, 93S16  
54/74160, 54LS/74LS160,  
54/74161, 54LS/74LS161



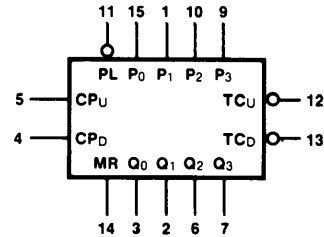
V<sub>CC</sub> = Pin 16  
GND = Pin 8

**D128**  
54/74162, 54LS/74LS162,  
54/74163, 54LS/74LS163



V<sub>CC</sub> = Pin 16  
GND = Pin 8

**D129**  
54/74192, 54LS/74LS192,  
54/74193, 54LS/74LS193



V<sub>CC</sub> = Pin 16  
GND = Pin 8