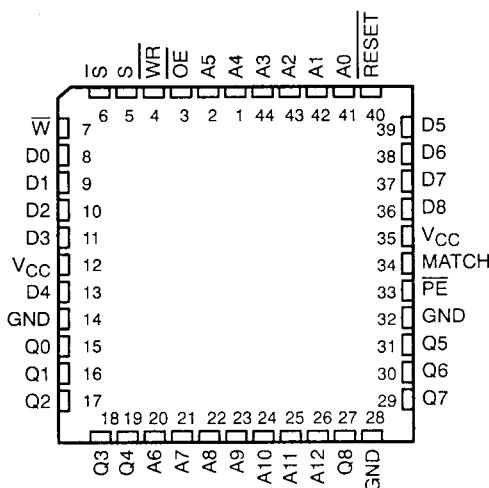


SN74ACT2158, SN74ACT2159 8K × 9 CACHE ADDRESS COMPARATORS/DATA RAMs

D3281, MAY 1990—REVISED JUNE 1990

- Fast Address to MATCH Delay
22 ns Max
- 8K × 10 Internal Static RAM
- On-Chip Address/Data Comparator
- Read Feature with Separate I/O
- Word Reset Function for Single Entry Invalidation
- On-Chip Parity Generator and Checking
- Easily Expandable in Width and Depth
- Choice of Open-Drain ('ACT2159) or Totem-Pole ('ACT2158) MATCH Output
- Fully TTL Compatible

FN PACKAGE
(TOP VIEW)



description

The 'ACT2158 and 'ACT2159 cache address comparators consist of a high-speed 8K × 10 static RAM array, parity generator, parity checker, and 10-bit high-speed comparator. They are fabricated using advanced silicon gate CMOS technology for high speed and simple interface with bipolar TTL circuits. A single 'ACT2158 or 'ACT2159 can provide comparison for 8192 addresses of 22 bits each. In addition, these devices are easily cascaded for greater address width and/or depth.

Significant reductions in cache memory component count, board area, and power dissipation can be achieved with these devices. The 'ACT2158 has a totem-pole MATCH output while the 'ACT2159 has an open-drain MATCH output for wire AND-tying. These devices operate from a single 5-V power supply.

The SN74ACT2158 and SN74ACT2159 are characterized for operation from 0°C to 70°C.

FUNCTION TABLE

INPUTS						OUTPUTS			FUNCTION
W	OE	S	S	RESET	WR	MATCH	PE	Q0-Q8	
L	X	H	L	H	H	L	IN	HI-Z	Write
H	L	H	L	H	H	Active	H [†]	Output	Read
H	X	H	L	H	H	L	L	Hi-Z or Active	Parity Error
						L	H		Not Equal
						H	L		Undefined Error
H	X	H	L	H	H	H	H	‡	Equal
						L	H		Memory Reset (Selected)
						H	H		Memory Reset (Deselected)
H	X	X	H	L	X	H	H	HI-Z	Memory Reset (Deselected)
H	X	H	L	H	L	L	IN	‡	Word Reset
X	X	L	X	H	X	H	H	HI-Z	Device Disabled
X	X	X	H	H	X	H	H	HI-Z	Device Disabled

[†] If a parity error exists in the addressed data, PE will be low.

[‡] The state of these pins is dependent on input OE.

These devices are covered by U.S. Patents 4,831,625; 4,858,182; 4,860,262; 4,884,270; and additional patents pending.

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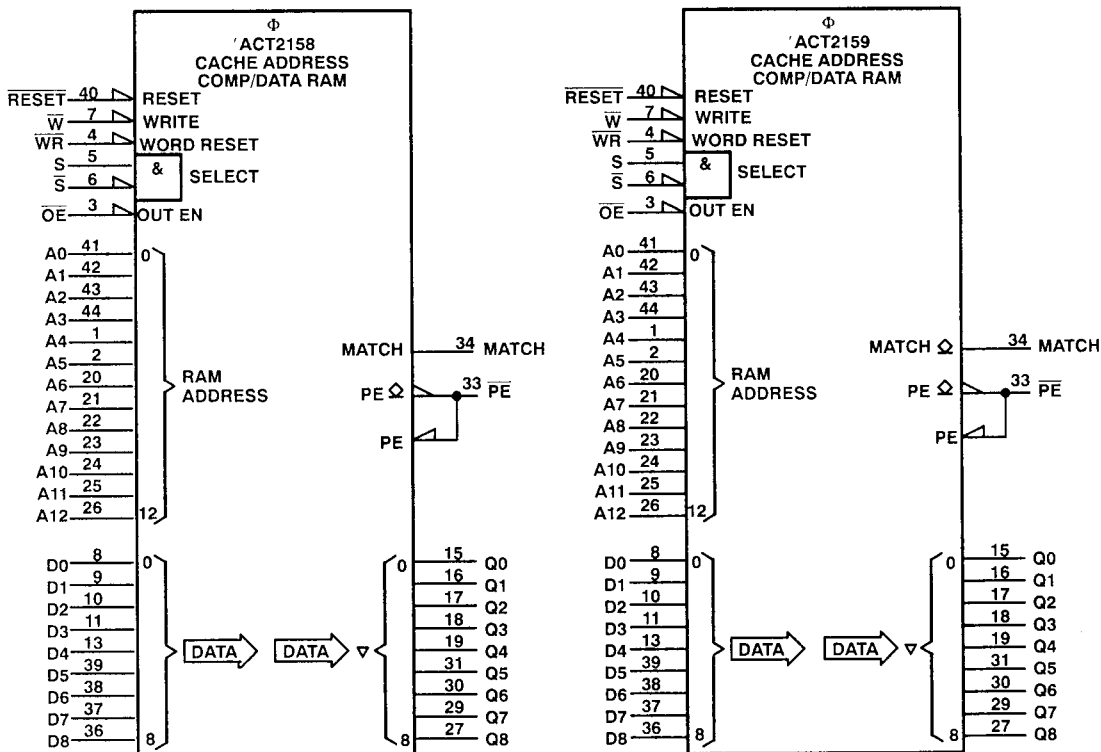
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SN74ACT2158, SN74ACT2159 8K × 9 CACHE ADDRESS COMPARATORS/DATA RAMs

D3281, MAY 1990—REVISED JUNE 1990

logic symbols†



† These symbols are in accordance with IEEE Std 91-1984.

for complete data sheet

The complete version of this data sheet and application information can be found in the *Cache Memory Management Data Book*, Literature #SCAD002. To obtain a copy of this data book, contact your local TI sales representative or call the TI Customer Response Center at 1-800-223-3200.

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