

SONY**CXB1135Q/Q-Y**

T-45-17

8 to 16-bit Serial Data Comparator**Description**

The CXB1135Q is an ultra high speed monolithic ECL Serial Data Comparator with variable bit length of 8 to 16. This IC compares serial input data (D_{IN}) with the preset parallel data (D_n) and indicates the coincidence of two data at outputs Z_s and Z_a .

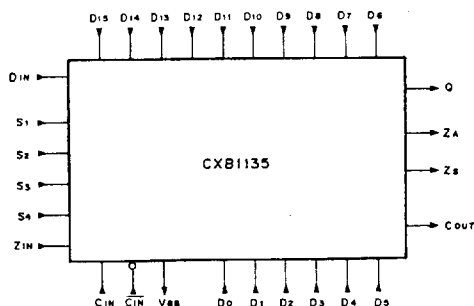
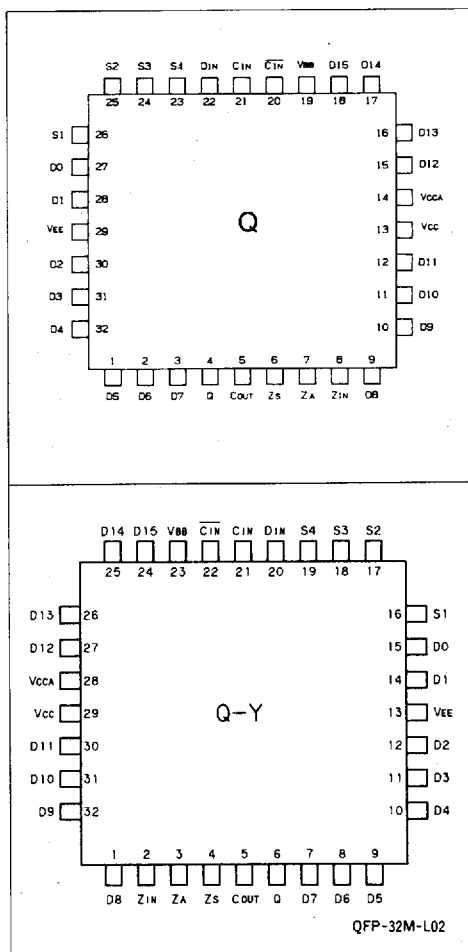
Select switches (S_1 - S_4) select a bit length.

Features

- Typical clock rate up to 1.4GHz
- Variable bit length: 8-bit to 16-bit
- Internal pull down resistors on input pins to maintain logic LOW level with the pins left open
- ECL 100K compatible I/O levels

Pin Names

D_n	Parallel Data inputs
D_{IN}	Serial Data input
Z_{IN}	Serial data input for bit length extension
S_n	Bit length Select inputs
C_{IN} , $\overline{C_{IN}}$	Clock inputs (positive edge trigger)
Q	Serial output
Z_s	Synchronous coincidence output
Z_a	Asynchronous coincidence output
C_{OUT}	Buffered clock output
V_{EB}	Reference voltage output
V_{CC}	Circuit ground
V_{CCA}	Circuit ground for outputs
V_{EE}	Negative voltage supply

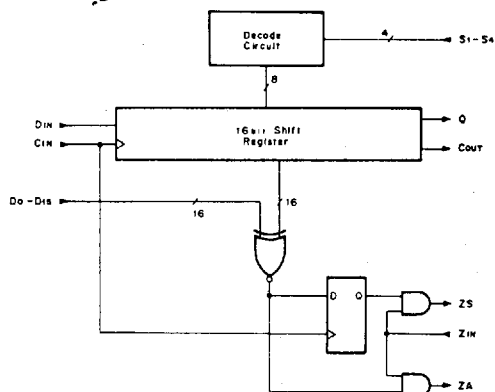
Logic Symbol**Pin Assignment**

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Block Diagram

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Bit Length Select

S1	S2	S3	S4	Operation	Parallel inputs
L	L	L	L	8bit	D0 to D7
L	L	L	H	9bit	D0 to D8
L	L	H	L	10bit	D0 to D9
L	L	H	H	11bit	D0 to D10
L	H	L	L	12bit	D0 to D11
L	H	L	H	13bit	D0 to D12
L	H	H	L	14bit	D0 to D13
L	H	H	H	15bit	D0 to D14
H	L	L	L	16bit	D0 to D15

H: HIGH voltage level, L: LOW voltage level

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DC Characteristics

 $V_{EE} = -4.5 \pm 0.3V$, $V_{CC} = V_{CCA} = GND$, $V_{TT} = -2.0V$, $T_c = 0^\circ C$ to $+85^\circ C$

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Power supply current	I_{EE}		-174	-128	-90	mA

Note: Other DC characteristics; See pages 3-3 and 3-4.

AC Characteristics

 $V_{EE} = -4.5 \pm 0.3V$, $V_{CC} = V_{CCA} = GND$, $V_{TT} = -2.0V$, $T_c = 0^\circ C$ to $+85^\circ C$, $R_T = 50\Omega$ to V_{TT}

Item		Symbol	Input	Output	Test Condition	Min.	Typ.	Max.	Unit		
Propagation delay time		T _{PLH}	C _{IN}	Z _A	Z _{IN} =H	1420	1890	2400	ps		
		T _{PHL}				1120	1490	1890			
		T _{PLH}		Z _S		1140	1520	1930			
		T _{PHL}				1080	1440	1830			
		T _{PLH}		Q	1060	1410	1790				
		T _{PHL}			1030	1370	1740				
		T _{PLH}		C _{OUT}	850	1130	1430				
		T _{PHL}			860	1150	1460				
		T _{PLH}	Z _{IN}	Z _A	760	1010	1280				
		T _{PHL}			510	680	860				
		T _{PLH}		Z _S	730	970	1230				
		T _{PHL}			500	670	850				
Set up time		T _S	D _{IN} , C _{IN}	Z _A , Z _S	Z _{IN} =H	-230			GHz		
			D _n , C _{IN}			240					
Hold time		T _H	C _{IN} , D _{IN}			550					
			C _{IN} , D _n			420					
Max. Clcok frequency	8-Bit	f _{MAX}	C _{IN}	Z _A , Z _S , Q, C _{OUT}	20% to 80%	1.1	1.4		ps		
	9to16-Bit					1.1	1.4				
Rise time		T _{TLH}							500	630	
Fall time		T _{THL}							480	580	

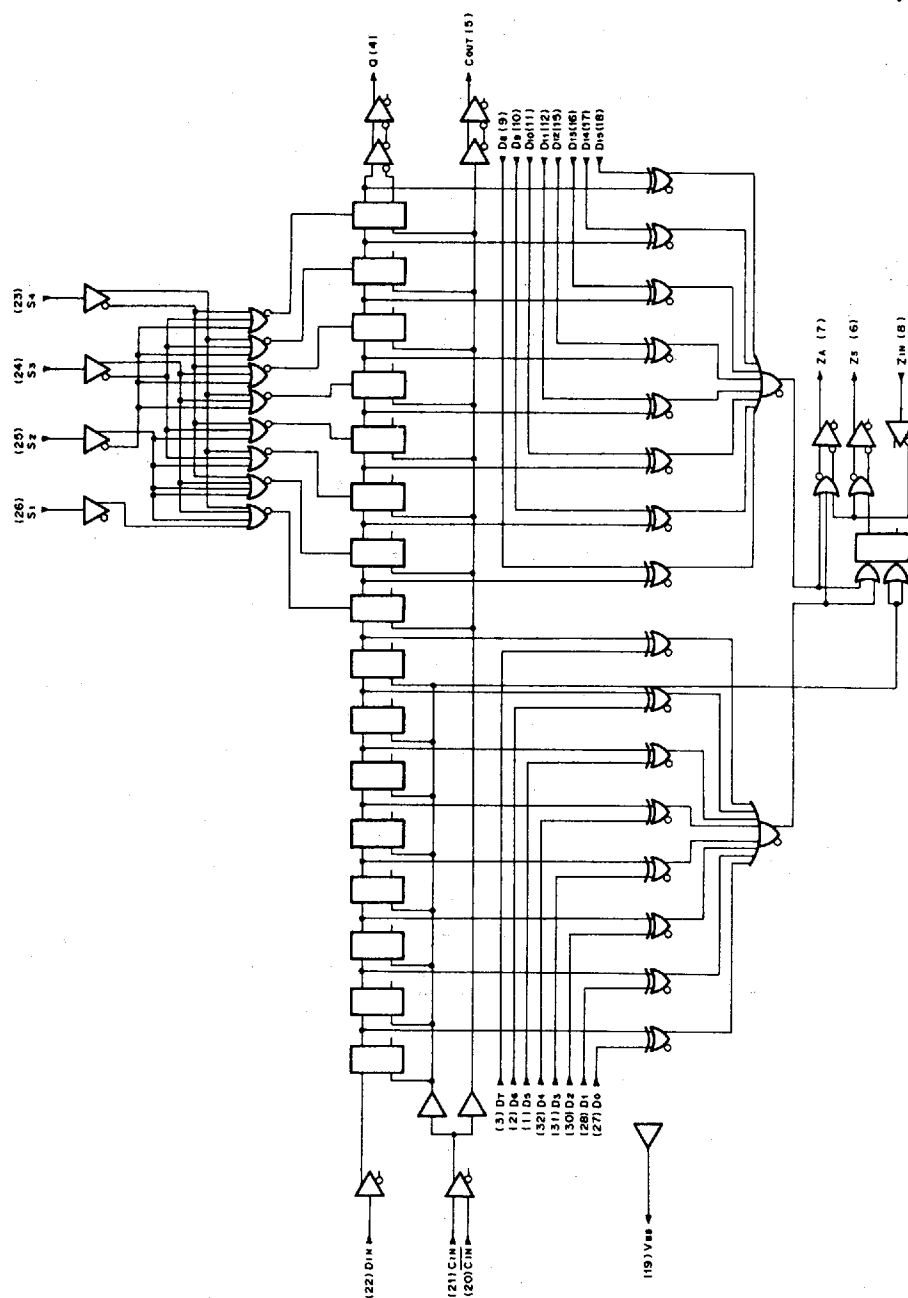
Note: AC test circuit; See pages 4-3, 4-4 and 4-5.

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Block Diagram



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Timing Diagram—9-bit

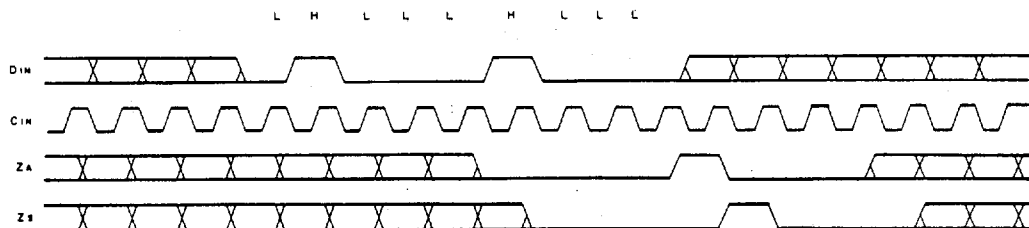
S1 to S3=LOW

S4=HIGH

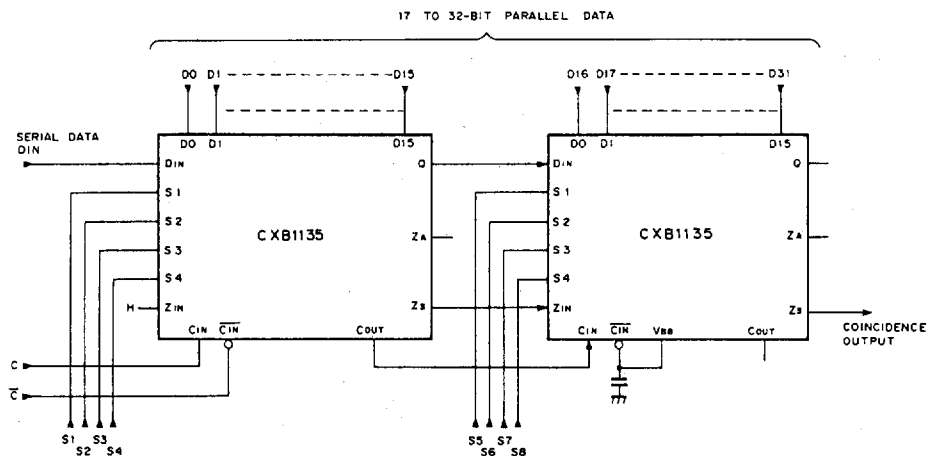
9-bit length

D8	D7	D6	D5	D4	D3	D2	D1	D0
L	H	L	L	L	H	L	L	L

Example of 9-bit parallel input data. Parallel data input pins which are not used (D9 to D15) must be open.



Typical Application—17 to 32-bit Serial Data Comparator



Package Data

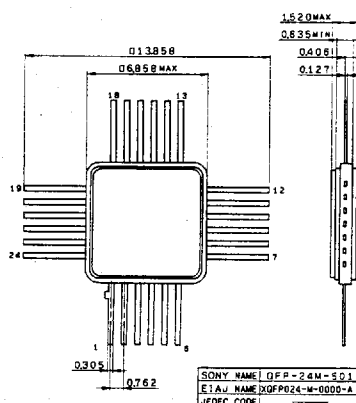
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Package Outline

Unit: mm

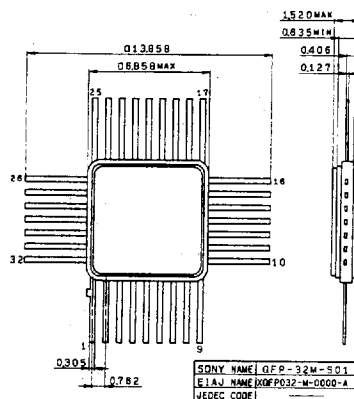
24pin QFP (QFP-24M-S01)

24pin QFP (Metal) 0.3g



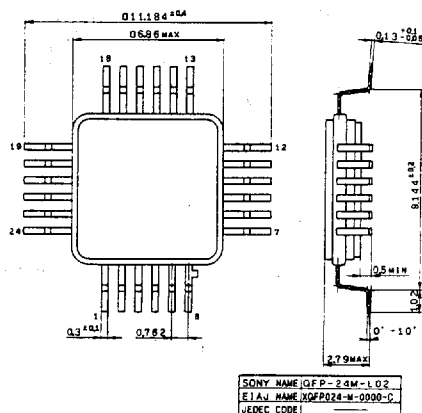
32pin QFP (QFP-32M-S01)

32pin QFP (Metal) 0.2g



24pin QFP (QFP-24M-L02)

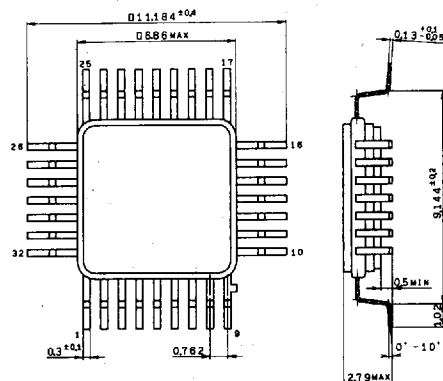
24pin QFP (Metal) 0.3g



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32pin QFP (QFP-32M-L02)

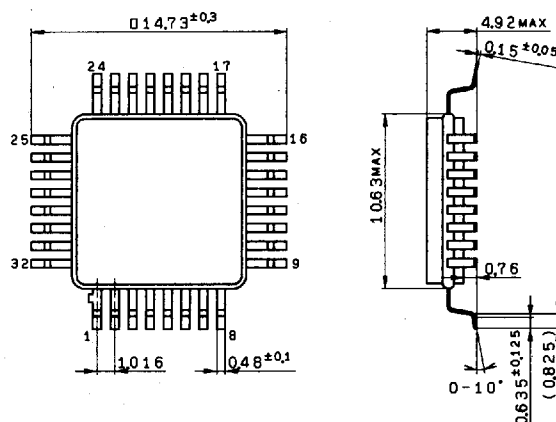
32pin QFP (Metal) 0.2g



SONY NAME	QFP-32M-L02
EIAJ NAME	XQFP032-M-0000-C
JEDEC CODE	

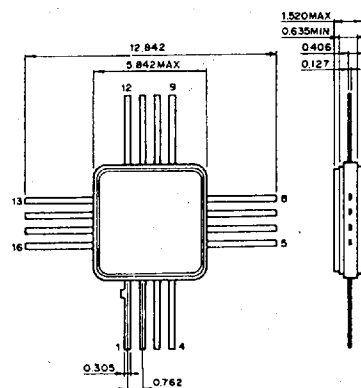
32pin QFP (QFP-32C-L01)

32pin QFP (Ceramic)



SONY NAME	QFP-32C-L01
EIAJ NAME	XQFP032-G-0000-A
JEDEC CODE	

16pin QFP



Package Data

Package Data	Page
1. 16 pin QFP	6-3
2. 24 pin QFP	6-3
3. 32 pin QFP	6-3
4. 24 pin QFP with formed lead	6-4
5. 32 pin QFP with formed lead	6-4

Package Data

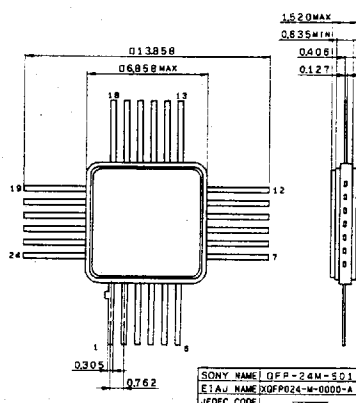
T-90-20

Package Outline

Unit: mm

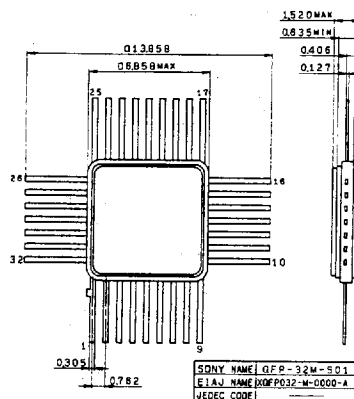
24pin QFP (QFP-24M-S01)

24pin QFP (Metal) 0.3g



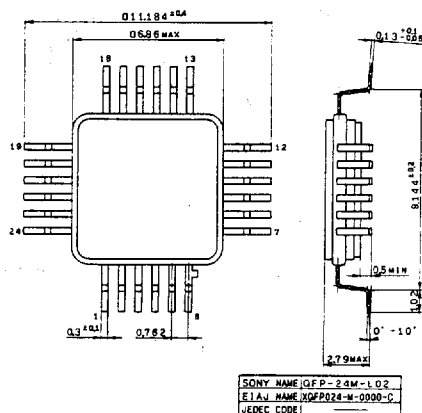
32pin QFP (QFP-32M-S01)

32pin QFP (Metal) 0.2g



24pin QFP (QFP-24M-L02)

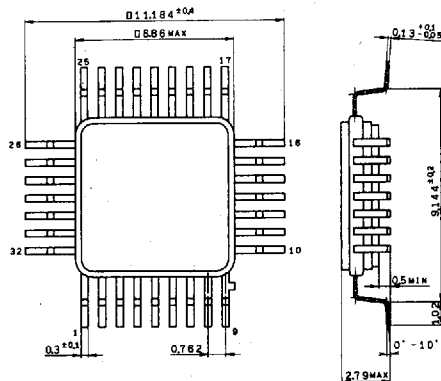
24pin QFP (Metal) 0.3g



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32pin QFP (QFP-32M-L02)

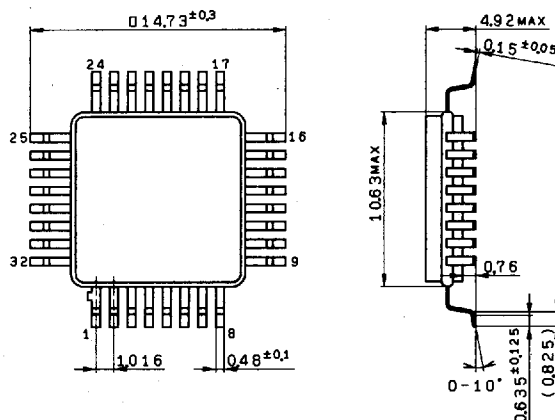
32pin GFP (Metal) 0.2g



SONY NAME	QFP-32M-L02
EIAJ NAME	XQFP032-M-0000-C
JEDEC CODE	

32pin QFP (QFP-32C-L01)

32pin GFP (Ceramic)



SONY NAME	QFP-32C-L01
EIAJ NAME	XQFP032-G-0000-A
JEDEC CODE	

16pin QFP

