

SONY**CXB1113Q/Q-Y****4-bit Multiplexer***T-68-11-51***Description**

The CXB1113Q is an ultra high speed monolithic ECL Multiplexer which functions as a 4bit Parallel to Serial Converter.

The IC fetches 4bit parallel data present at the inputs (Dn) and converts them to serial data. Multiplexing is carried out in sequence from D0 to D3.

With Load Select (LS) input set to Low, internal load pulse loads parallel data. Start load pulse (ST), which starts multiplexing, has to be maintained High for at least 3 clock periods.

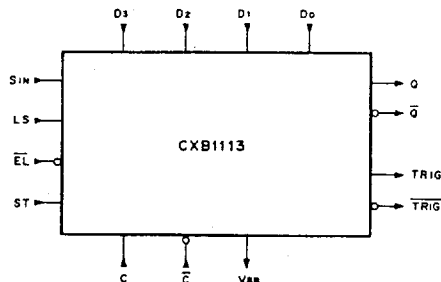
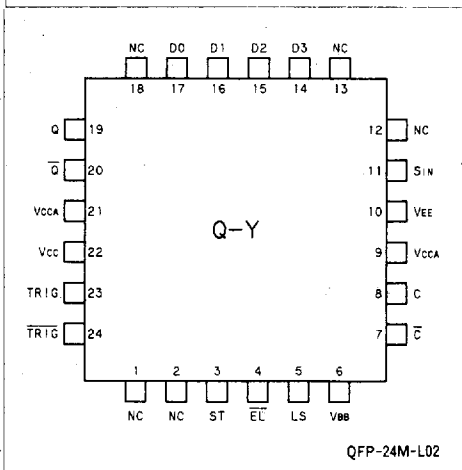
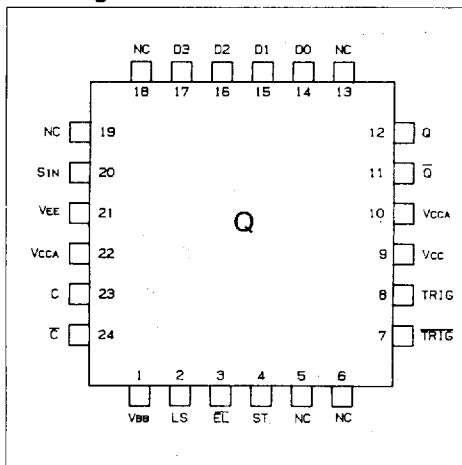
With LS set to High, External Load pulse ($\overline{EL}$) loads parallel data.

Features

- Typical clock rate up to 1.8GHz
- Differential clock input and output
- Built-in reference voltage for single ended input operation
- 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

Dn	Parallel Data inputs
LS	Load Select input
ST	Load Start input
$\overline{EL}$	External Load input
SIN	Serial data input
C, $\overline{C}$	Clock inputs (positive edge trigger)
Q, $\overline{Q}$	Multiplexed serial data outputs
TRIG, $\overline{TRIG}$	Trigger pulse outputs
V _{BB}	Reference voltage output
V _{CC}	Circuit ground
V _{CCA}	Circuit ground for outputs
V _{EE}	Negative power supply

Logic Symbol**Pin Assignment****Truth Table**

LS	ST	$\overline{EL}$	C	
L	L	X	┐	Internal Load
L	H	X	┐	
H	X	L	┐	External Load
H	X	H	┐	
				Parallel data load, shift right
				Initialize (3clock period min.)
				Parallel data load
				Shift right, serial data output

Note: H; HIGH voltage level

L; LOW voltage level

X; Don't care

┐; Positive transition edge

SONY®

CXB1113Q/QY

DC Characteristics

T-68-11-51

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

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Power supply current	I_{EE}		-272	-200	-140	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	Q		900	1050	1220	ps	
	T _{PHL}		900		1050	1220			
	T _{PLH}		TRIG		560	710	880		
	T _{PHL}		570		720	890			
Set up time	T _s	D _n , S _{IN} →C	Q		-110				
		$\overline{EL}$, C			-170				
Hold time	T _h	C→D _n , S _{IN}			810				
		$\overline{EL}$, C			450				
Max. Clock frequency	f _{MAX}	C			1.4	1.8			GHz
Release time	T _R	ST, C			-50				
Rise time	T _{TLH}	C	Q, TRIG	20% to 80%		230	290	ps	
Fall time	T _{THL}					170	220		

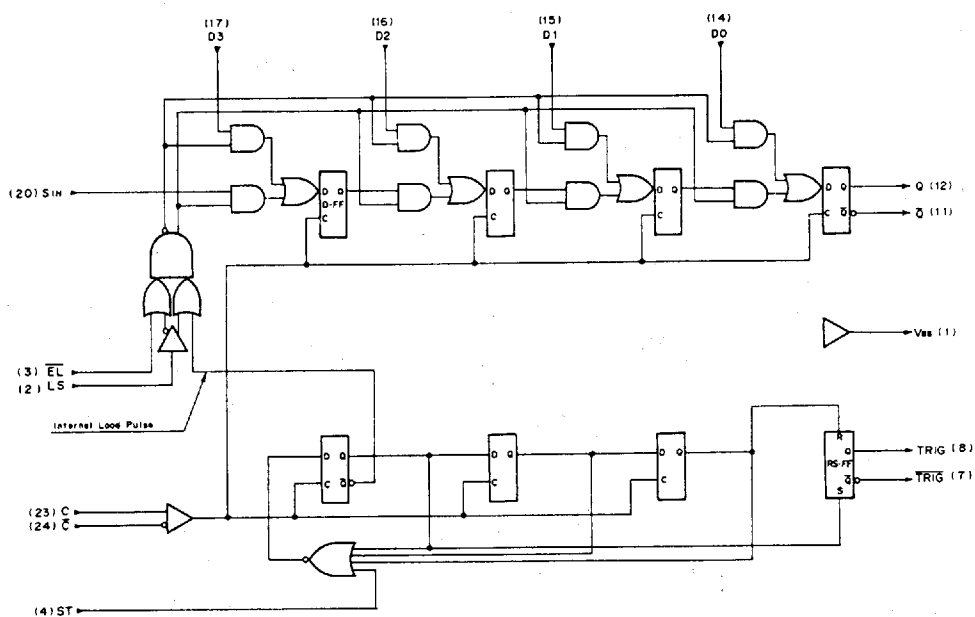
Note: AC test circuit; See pages 4-4 and 4-5.

SONY

CXB1113Q/QY

T-68-11-51

Logic Diagram

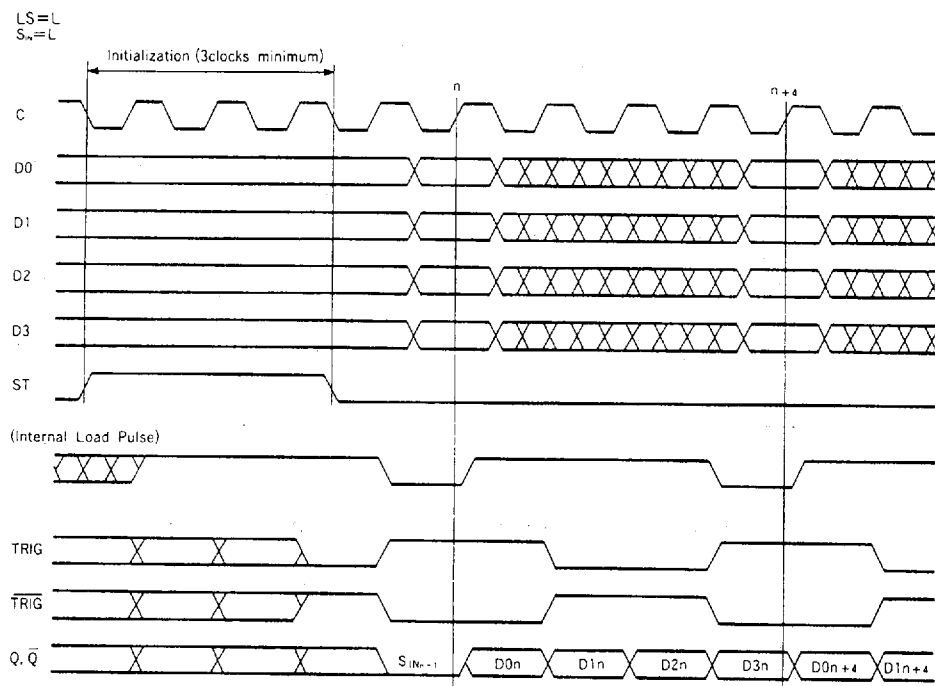


SONY®

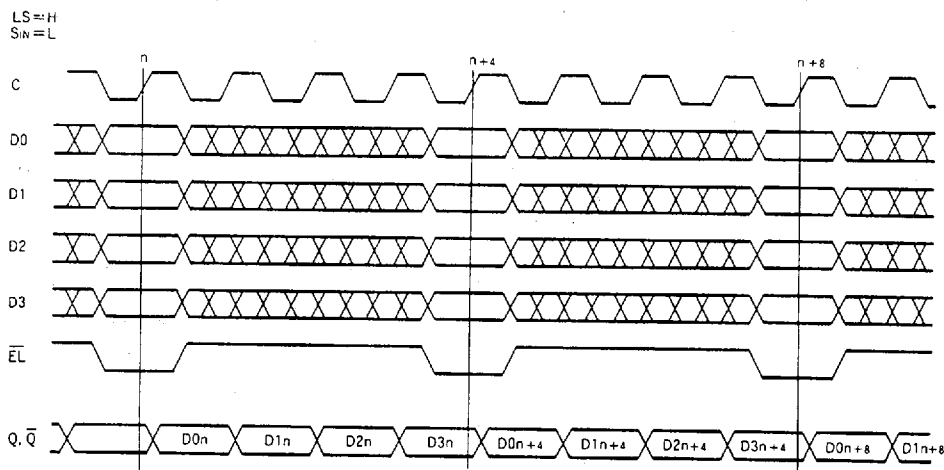
CXB1113Q/QY

Timing Diagram : Internal Load

T-68-11-51



Timing Diagram : External Load



SONY

CXB1113Q/QY

Typical Application

T-68-11-51

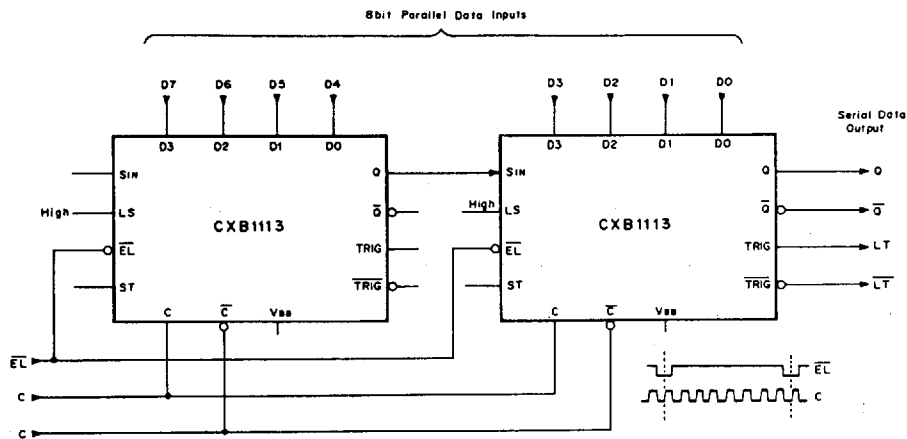


Figure 1. 8 to 1 Multiplexer/Parallel to Serial Converter

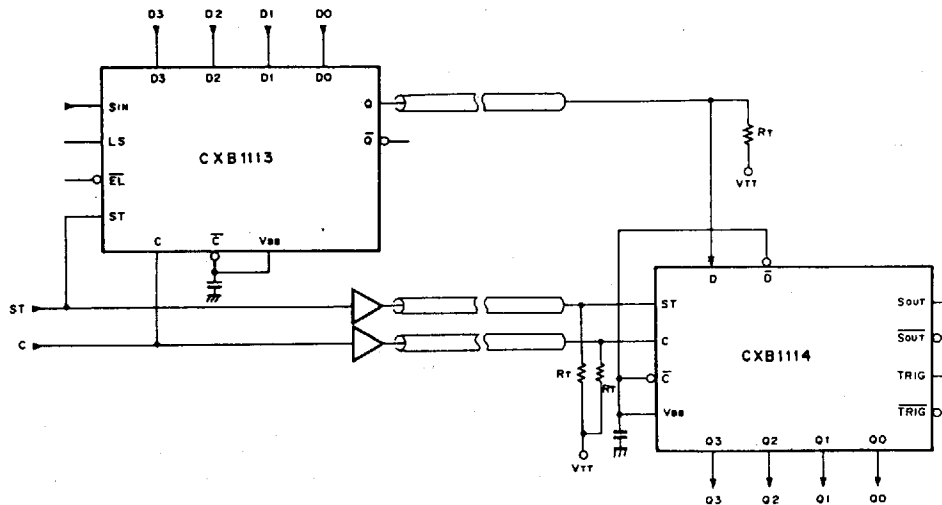


Figure 2. Serial Data Transmission

Package Data

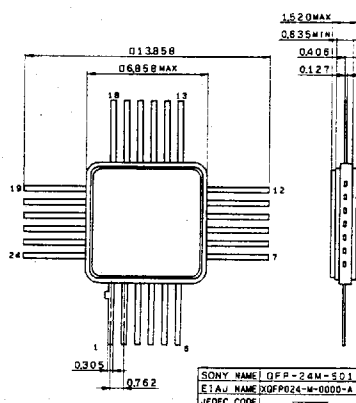
T-90-20

Package Outline

Unit: mm

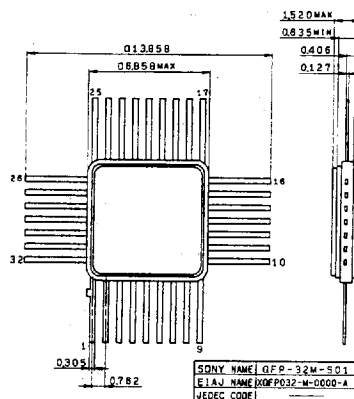
24pin QFP (QFP-24M-S01)

24pin QFP (Metal) 0.3g



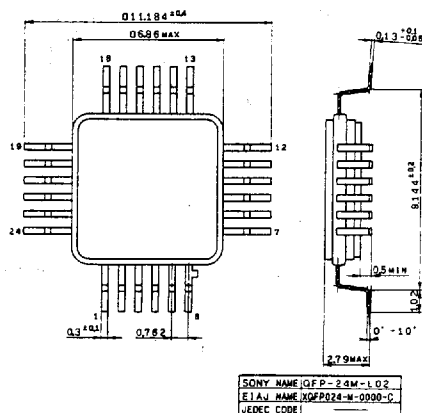
32pin QFP (QFP-32M-S01)

32pin QFP (Metal) 0.2g



24pin QFP (QFP-24M-L02)

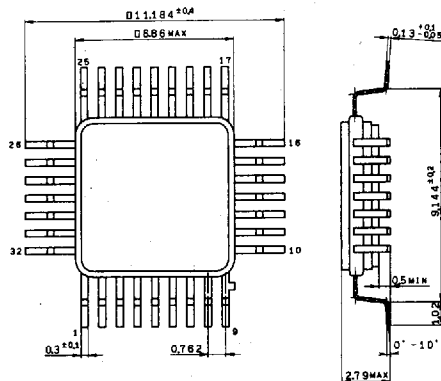
24pin QFP (Metal) 0.3g



T-90-20

32pin QFP (QFP-32M-L02)

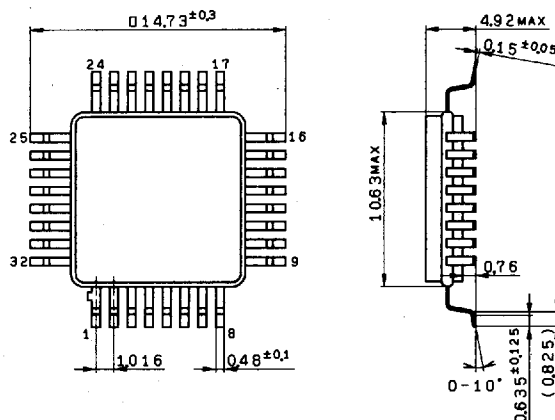
32pin QFP (Metal) 0.2g



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

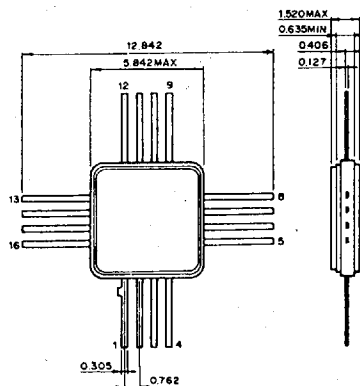
32pin QFP (QFP-32C-L01)

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

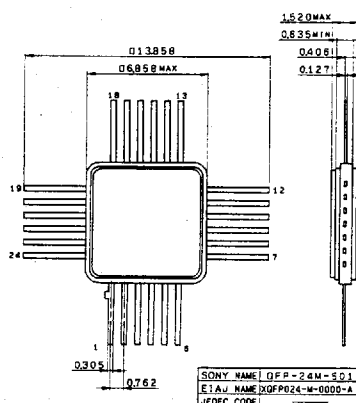
T-90-20

Package Outline

Unit: mm

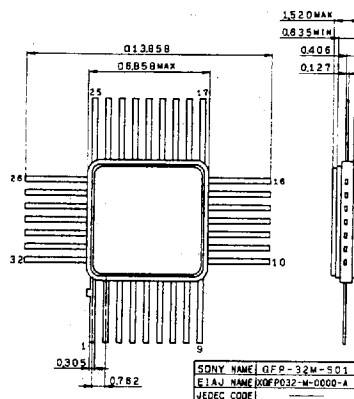
24pin QFP (QFP-24M-S01)

24pin QFP (Metal) 0.3g



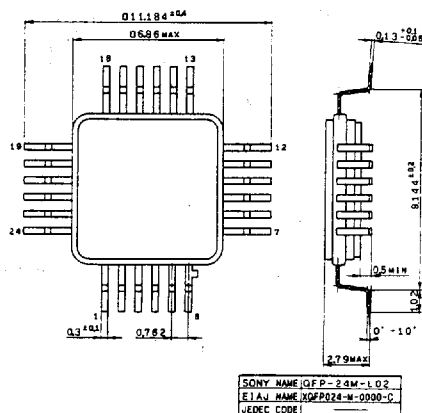
32pin QFP (QFP-32M-S01)

32pin QFP (Metal) 0.2g



24pin QFP (QFP-24M-L02)

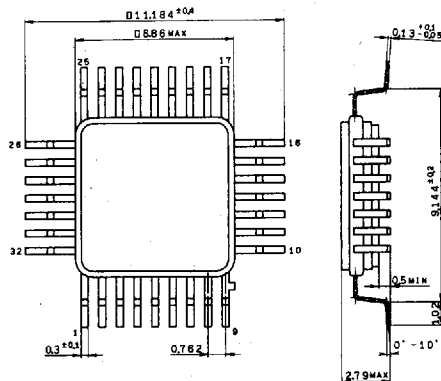
24pin QFP (Metal) 0.3g



T-90-20

32pin QFP (QFP-32M-L02)

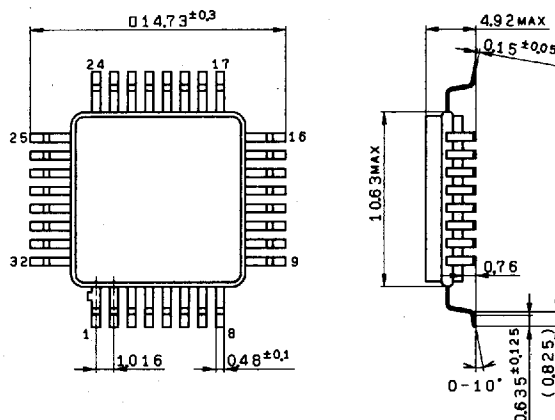
32pin QFP (Metal) 0.2g



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

