SONY

CXB1108Q

T-52-21

Laser Driver

Description

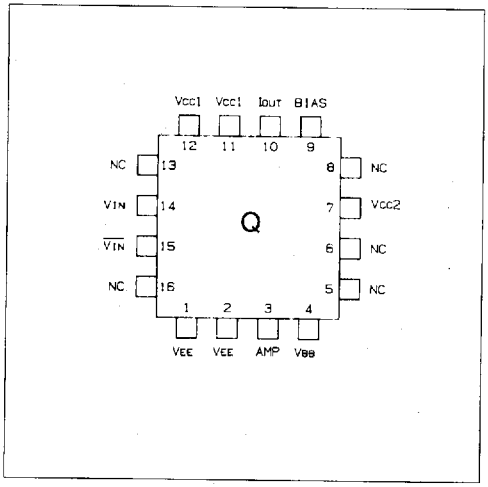
The CXB1108Q is an ultra high speed monolithic Laser Driver/Current Switch Circuit with ECL input level.

Open collector output is provided at the output pin and has a capability of driving peak-to-peak current of 60mA up to a data rate of 2Gbps (NRZ). AMP input controls the peak-to-peak current amplitude, and BIAS input sets a current bias level. Open collector output I_{OUT} sinks current of $2 \times I_{AMP} + I_B$. Data input has differential input pins (V_{IN} and $\overline{V_{IN}}$). Built-in reference voltage is provided at V_{BB} pin to facilitate the use of single input operation.

Features

- Typical data rate up to 2.0Gbps (NRZ)
- Differential Data input
- Internal pull down resistors on input pins to maintain logic LOW level with the pins left open
- ECL 100K compatible Input level

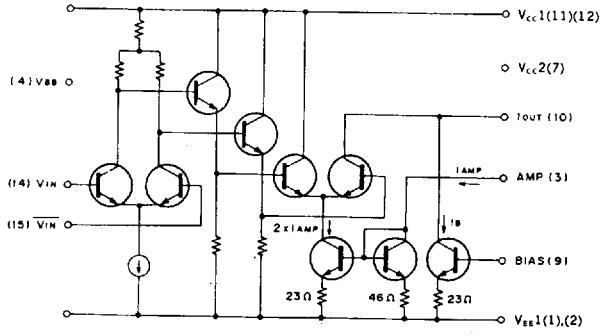
Pin Assignment



Pin Names

V_{IN}, $\overline{V_{IN}}$	Data input
I_{OUT}	Current output
AMP	Current amplitude control input
BIAS	Bias Current control input
V_{BB}	Reference voltage output
V_{CC1}	Circuit ground
V_{EE}	Negative power supply
V_{CC2}	Reference voltage generation circuit ground

Circuit Diagram



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DC Characteristics

$V_{EE}=-4.5\pm0.3V$, $V_{CC1}=V_{CC2}=GND$, $T_C=0°C$ to $+85°C$, $R_L=10\Omega$ to V_{CC1}

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Power supply current	I_{EE}	$V_{IN}=H$, $\overline{V_{IN}}=L$, $I_{OUT}=100mA$, $I_{AMP}=25mA$	−224	−164	−114	mA
Output Current	I_{OUT}		0		120	mA
		$I_{AMP}=0$ $V_{AMP}=V_{EE}$	0		60	
		$I_B=0$ $V_{BIAS}=V_{EE}$	0		60	
Input voltage range	V_{IN}		−2.0		−0.5	V
Reference bias voltage	V_{BB}		−1380	−1320	−1160	mV

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

AC Characteristics

$V_{EE}=-4.5\pm0.3V$, $V_{CC1}=V_{CC2}=GND$, $T_C=0°C$ to $+85°C$, $R_L=50\Omega$ to V_{CC1}

Item	Symbol	Input	Output	Test Condition	Min.	Typ.	Max.	Unit
Max. Data rate	f_{DMAX}	V_{IN}	I_{OUT}	NRZ	1.7	2.0		Gbps
Rise time	T_{TLH}			20% to 80%		200	240	ps
Fall time	T_{THL}					200	240	

Note: AC test circuit; See page 4-3.

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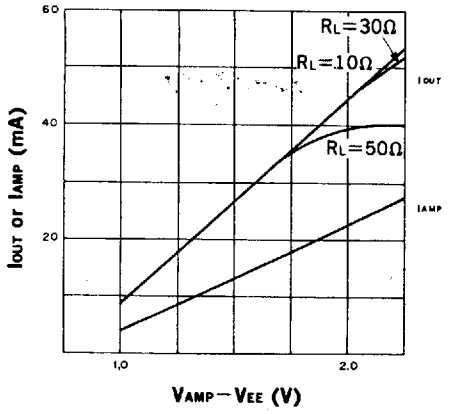


Figure 1. $V_{AMP}-V_{EE}$ vs I_{OUT} (BIAS=Open)

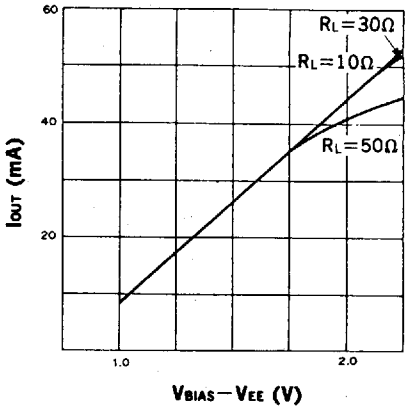


Figure 2. $V_{BIAS}-V_{EE}$ vs I_{OUT} (AMP=Open)

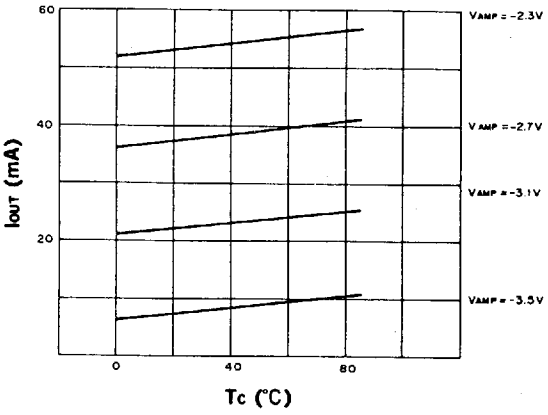


Figure 3. Tc vs I_{OUT}

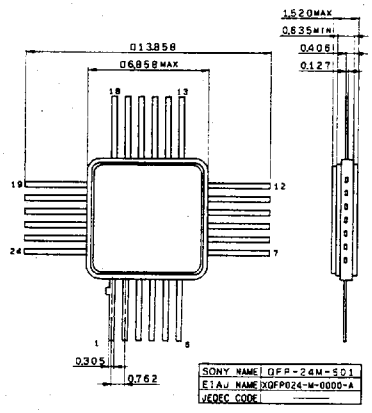
Package Data

T-90-20

Package Outline Uuit: mm

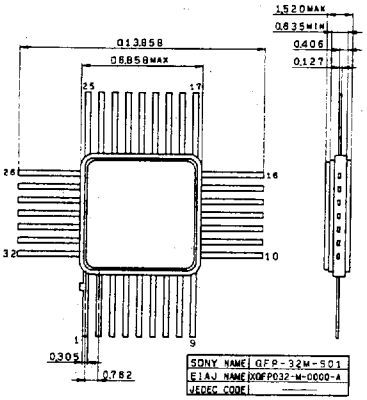
24pin QFP (QFP-24M-S01)

24pin QFP (Metal) 0.3g



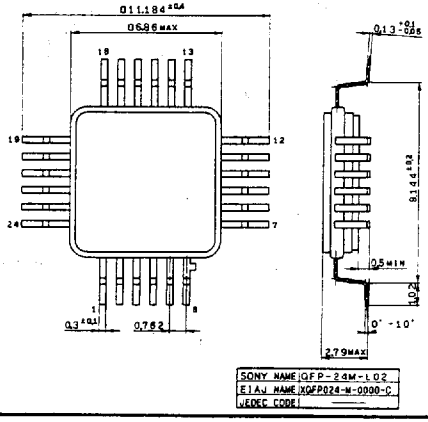
32pin QFP (QFP-32M-S01)

32pin QFP (Metal) 0.2g



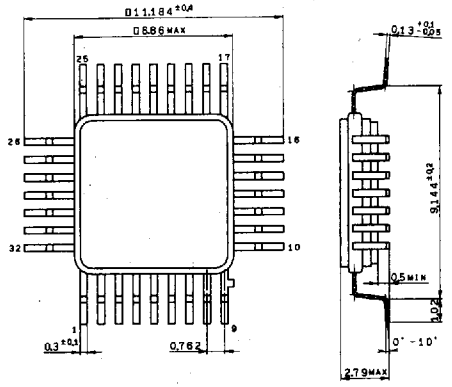
24pin QFP (QFP-24M-L02)

24pin QFP (Metal) 0.3g



32pin QFP (QFP-32M-L02)

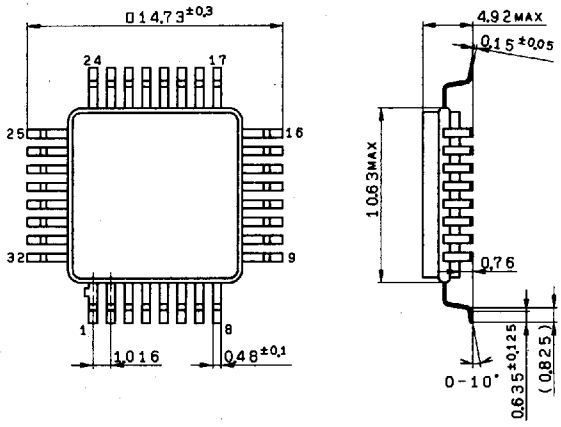
32pin QFP (Metal) 0.2g



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

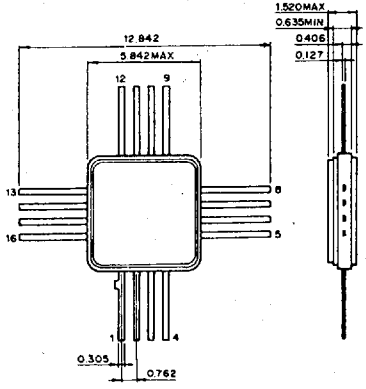
32pin QFP (QFP-32C-L01)

32pin QFP (Ceramic)



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

16pin QFP



Package Data

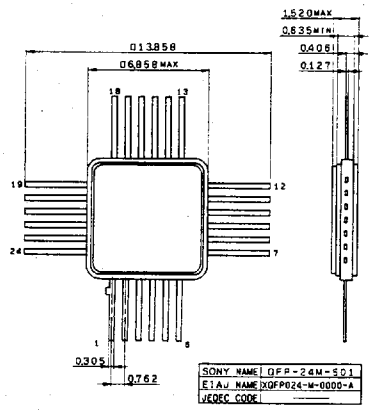
Package Data

T-90-20

Package Outline Uuit: mm

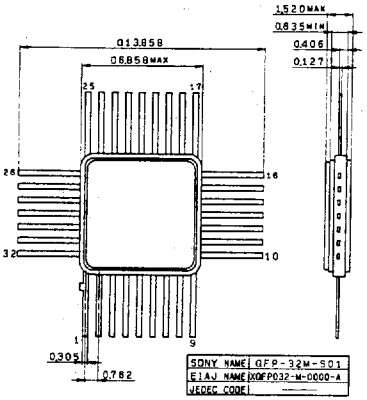
24pin QFP (QFP-24M-S01)

24pin QFP (Metal) 0.3g



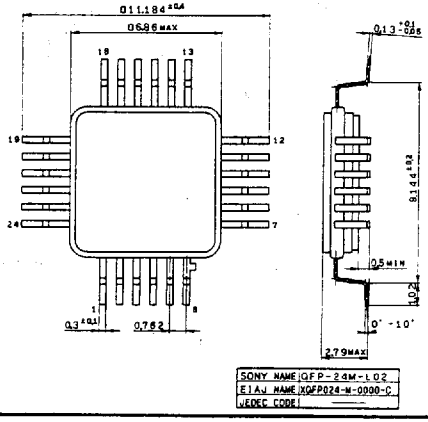
32pin QFP (QFP-32M-S01)

32pin QFP (Metal) 0.2g



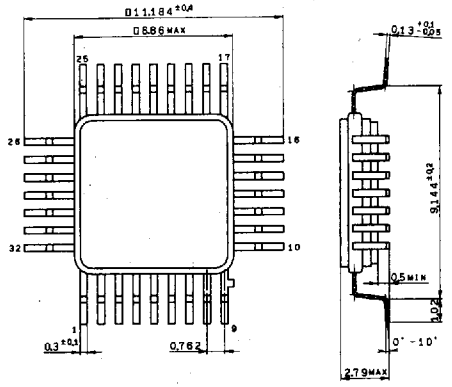
24pin QFP (QFP-24M-L02)

24pin QFP (Metal) 0.3g



32pin QFP (QFP-32M-L02)

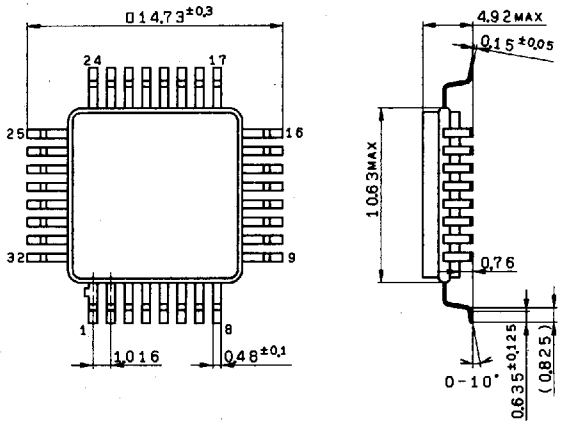
32pin QFP (Metal) 0.2g



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