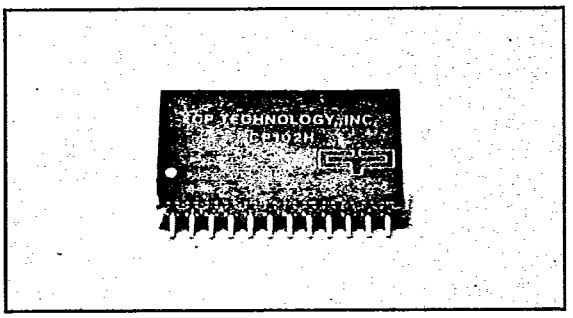
CP102H HIGH SPEED TRI-STATE PIN DRIVER

Features

- 200 MHz repetition rate @ 1V p-p
- 100 MHz repetition rate @ 5V p-p
- Rise and Fall Times Tr & Tf = 2.5 ns @ 5V
- Tri-state (inhibit mode) capability for testing I/O devices
- Low inhibit leakage current: 50 nA Max.
- Driver skew: 1 ns
- Small ceramic 12-Pin SIP hybrid package
- Low cost



Product Description

The CP102H is a high speed, tri-state (with inhibit mode) pin driver designed for use in high speed digital test systems and other general purpose ATE systems. It is packaged in a compact 12-Pin ceramic SIP hybrid package, using thick-film laser trimmed technology.

The CP102H can be programmed over a −10V to +10V range for a 10V peak to peak output signal. It can operate at repetition rate of up to 200 MHz @ 1V output swing and 100 MHz @ 5V. The Driver has super fast rise and fall times of 2.5 ns with a 5V p-p output signal. Propagation delays from input to output is typically 7 ns, with skew among all drivers well within 1 ns.

The CP102H also includes an output inhibit mode which allows an input/output configuration when bussed together with the input to a data receiver (such as the CP405). The switching time for enable and inhibit modes are typically 7 ns. It has a maximum of 50 nA of inhibit leakage current and very low inhibit output capacitance of only 8 pF.

Applications

- Semiconductor Test Systems
- Digital/Analog Test Systems
- PC Board Test Systems
- Data/Pattern Generators
- Instrumentation/Characterization Equipment
- General Purpose Pin Driver

Absolute Maximum Ratings

VEE Logic Voltage	−7V
Positive Supply Voltage +Vs	+15V
Negative Supply Voltage −Vs	−15V
VHI Reference Voltage	+11V
VLO Reference Voltage	−11V
VHI–VLO (Differential)	+11V
Operating Temperature	0 to +70°C
Storage Temperature	−50 to +125°C

Operating Conditions

VEE Logic Voltage	−5.2V
Positive Supply Voltage +Vs	+12V
Negative Supply Voltage −Vs (see Note 1)	−12V
VHI Voltage	−4V to +11V
VLO Voltage	−11V to +4V
VHI–VLO (Differential)	.1V to +10V
Operating Free Air Temp. TA	25°C

CP TECHNOLOGY, INC. 21143 Christensen Dr. Cupertino, CA 95014 (408) 996-8069

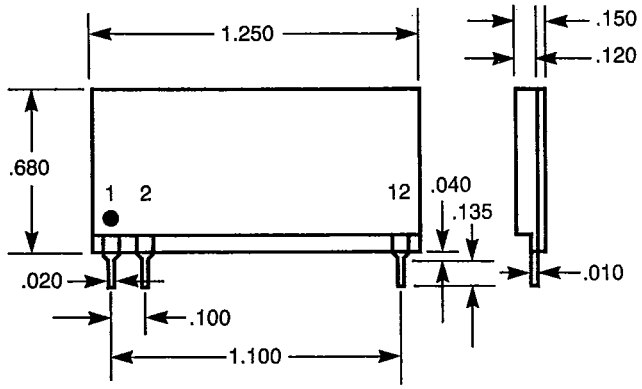
CP102H Specifications

(All specs @ TA = 25°C with output @ no load)

PARAMETER	MIN	TYP	MAX	UNITS
Input Characteristics				
Data/Inhibit (ECL Level)				
Hi Input voltage	−1.13		−.81	V
Low Input voltage	−1.95		−1.48	V
Bias current		260	300	µA
Reference Input Voltage				
VHI	−4		+11	V
VLO	−11		+4	V
Bias current		15		mA
Output Characteristics				
Output High Level VOH	−3		+10	V
Output Low Level VOL	−10		+3	V
Amplitude (VOH–VOL)	.1		10	V
Offset Voltage:				
VOH = VHI − 800 mV	Accuracy		±25	mV
VOL = VLO + 800 mV	Accuracy		±25	mV
Output static current		30		mA
Output dynamic current		100		mA
Output impedance	14	15	16	Ohm
Output capacitance		8		pF
Inhibit leakage current		10	50	nA
Dynamic Performance				
Output Rise/Fall Times:				
Vout = 1V 10% to 90%		1.2	1.5	ns
Vout = 5V 10% to 90%		2.5	3.2	ns
Vout = 10V 10% to 90%		4.5	5.5	ns
Propagation delay time:				
@ Vout = 5V	6.5	7.0	7.5	ns
Skew	−.5		+.5	ns
Overshoot and Preshoot		150		mV
Inhibit Ton/Toff times		7		ns
Inhibit switching spikes		150		mV
Repetition Rates:				
Vout = 1V	200			MHz
Vout = 5V	100			MHz
Vout = 10V	50			MHz
Power Supplies				
Positive supply range +Vs	+10	+12	+15	V
Negative supply range −Vs (see Note 1)	−10	−12	−15	V
VEE logic voltage	−4.9	−5.2	−5.5	V
+Vs/−Vs current		26	32	mA
VEE current		70	75	mA

Note 1: −Vs = −5V version available upon request, please contact factory.

Outline Dimensions



All dimensions in inches

Pin Configurations

PIN NO.	SYMBOL	FUNCTION
1	VOH	Output Hi
2	VOL	Output Lo
3	GND	Output GND
4	VHI	Ref Hi Input
5	VLO	Ref Lo Input
6	−Vs	−12V (Note 1)
7	+Vs	+12V
8	GND	Analog GND
9	DATA	Data Input
10	INHIBIT	Inhibit Input
11	GND	Digital GND
12	VEE	−5.2V

Function Table

DATA	INHIBIT	OUTPUT
L	L	VHI ON
H	L	VLO ON
X	H	TRI STATE

H = ECL "1"
L = ECL "0"
X = Don't care

Note 2: Output pins 1 and 2 should be tied together through resistors R1 and R2 respectively, with the DUT connected to their junction. These resistors can be selected to obtain equal output impedance for VOH and VOL, or matching impedance when driving a coax cable.

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