

Comlinear™ CLC2500

Dual, Ultra-fast Voltage Comparator



FEATURES

- 650ps propagation delay
- 100ps overdrive delay variation
- 70dB CMRR
- Differential latch control
- 10V/ns slew rate
- ECL compatible
- 350mW power dissipation
- 900MHz bandwidth
- Lead-free QFN package

APPLICATIONS

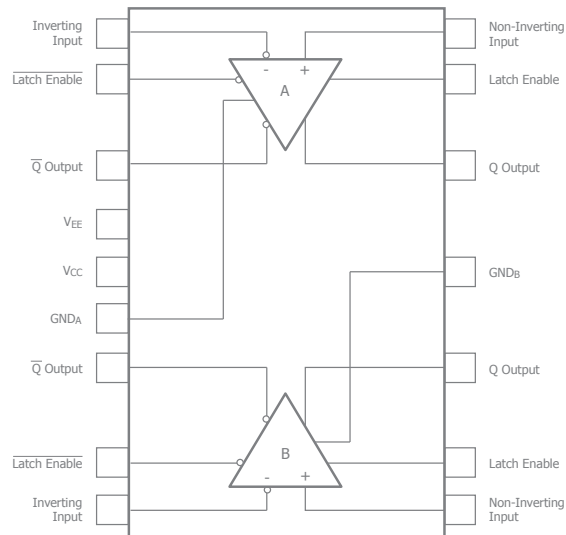
- Automated test equipment
- High-speed instrumentation
- Window comparators
- High-speed timing
- Line receivers
- High-speed triggers
- Threshold detection
- Peak detection

General Description

The *Comlinear* CLC2500 is a sub-nanosecond dual comparator with propagation delay variation less than 100ps from 5 to 50mV input overdrive voltage. The input slew rate is 10 V/ns and the differential input stage has a common-mode input range of -2.5V to 4V.

The *Comlinear* CLC2500 has ECL-compatible complementary digital outputs that are capable of driving 50Ω terminated transmission lines. The CLC2500 is ideally suited for automated test equipment (ATE) applications, high-speed instrumentation, and peak detection.

Block Diagram



Ordering Information

Part Number	Package	Pb-Free	Operating Temperature Range	Packaging Method
CLC2500ILP16X*	QFN-16	Yes	-40°C to +85°C	Reel

Moisture sensitivity level for all parts is MSL-1.

*Preliminary

Electrical Characteristics

T_A = 25°C, V_{CC} = 5V, V_{EE} = -5.2V, R_L = 50Ω to -2V; unless otherwise noted.

Parameter	Conditions	Min	Typ	Max	Units
AC Performance					
Propagation Delay	20mV overdrive		650		ps
Latch Set-up Time	20mV overdrive		150		ps
Latch to Output Delay	20mV overdrive		500		ps
Latch Pulse Width	20mV overdrive		500		ps
Latch Hold Time	20mV overdrive		0		ps
Rise Time	20% to 80%		180		ps
Fall Time	20% to 80%		80		ps
Slew Rate			10		V/ns
-3dB Bandwidth			900		MHz
DC Performance					
Input Offset Voltage ⁽¹⁾		-10	3	10	mV
Average Drift			10		μV/°C
Input Offset Current ⁽¹⁾		-3	1	3	μA
Input Bias Current ⁽¹⁾		-25	8	25	μA
Positive Supply Current			18	30	mA
Negative Supply Current			40	55	mA
Positive Supply Voltage		4.75	5.0	5.25	V
Negative Supply Voltage		-4.95	-5.2	-5.45	V
Input Common Mode Range		-2.5		4.0	V
Latch Enable	Common Mode Range	-2.0		0	V
Open Loop Gain			66		dB
Differential Input Resistance			500		kΩ
Input Capacitance			0.6		pF
Power Supply Rejection Ratio			70		dB
Common Mode Rejection Ratio	V _{CM} = -2.5V to 4V		70		dB
Power Dissipation	Both Channels, No Load		350	425	mW
	Both Channels, with Load		400	550	mW
Output High Level	ECL 50Ω to -2V	-1.00		-0.81	V
Output Low Level	ECL 50Ω to -2V	-1.95		-1.54	V

Notes:

1. 100% tested at 25°C.
Refer to the data sheet for complete product specifications.

Available Package

CLC2500 QFN-16
(not actual size)

For additional information regarding our products, please visit the CADEKA at: cadeka.com

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