

NLB6292

NEL
SELIC

Small signal to ECL convertor with online monitor

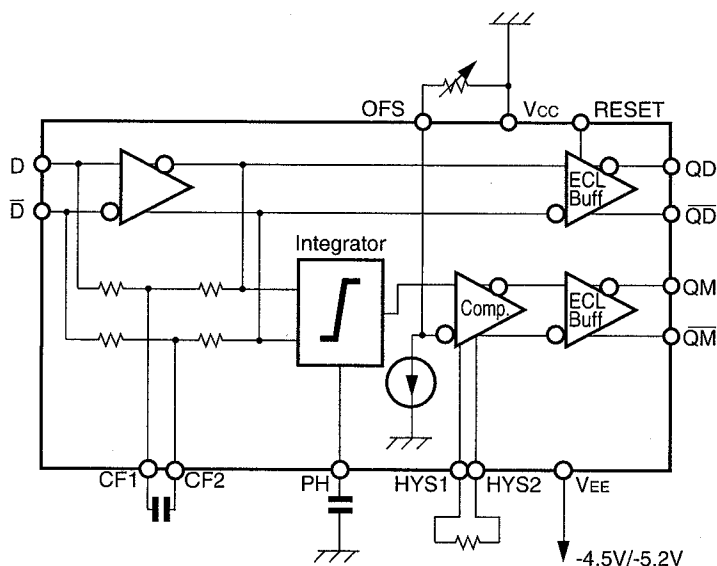
Description

The NLB6292 is an ultra high-speed monolithic limiting amplifier. The NLB6292 included alarm generator, auto offset canceler and shutdown circuit.

Features

- Typical AC characteristics
Data rate up to 3 Gb/s.
 $t_r = 170\text{ps}$
 $t_f = 170\text{ps}$
- Internal pull down resistor on Reset pin to maintain logic LOW level with the pin left open.
- ECL 100K compatible output levels.
- Differential outputs.

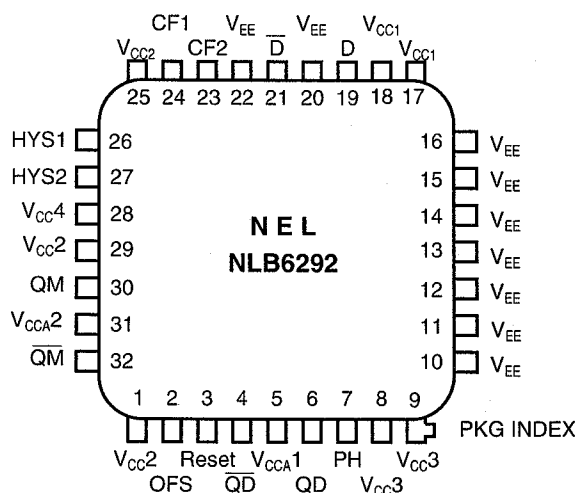
Logic Symbol



Truth table

Input			output	
Reset	D	$\bar{D}$	QD	$\bar{QD}$
L	H	L	H	L
L	L	H	L	H
H	X	X	L	H

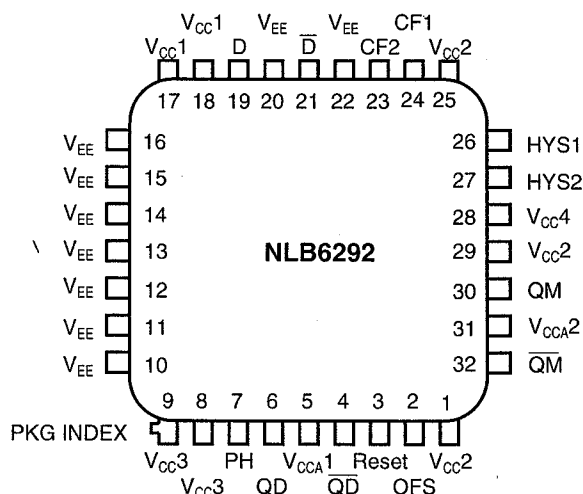
Pin Assignment Top View (Ceramic)



Pin Name

D, $\bar{D}$	Data input
CFn	DC feedback filter
PH	Peak hold
HYS1	Comparator hysteresis input
HYS2	Comparator hysteresis output
OFS	Offset level adjust
RESET	Pull down/up input for $\bar{QD}/QD$
QD, $\bar{QD}$	Data output
QM, $\bar{QM}$	Comparator output
V_{CCn}	Circuit GND
$V_{CCA}n$	Circuit GND for outputs
V_{EE}	Circuit power supply at -4.5V or -5.2V

Back View (Metal Cap)



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DC Characteristics

$V_{EE} = -4.5V \pm 0.3V$, $V_{CC} = V_{CCA} = GND$, $V_{TT} = -2V$, $T_c = 0^{\circ}C$ to $+85^{\circ}C$, $R_T = 50\Omega$ to V_{TT}

Characteristics	Symbol	Min.	Typ.	Max.	Unit
Power supply current	I_{EE}	35	60	90	mA

AC Characteristics

$V_{EE} = -4.5V \pm 0.3V$, $V_{CC} = V_{CCA} = GND$, $V_{TT} = -2V$, $T_c = 0^{\circ}C$ to $+85^{\circ}C$, $R_T = 50\Omega$ to V_{TT}

Characteristics	Test Condition	Min.	Typ.	Max.	Unit	Notes
Gain	at 1 MHz		50		dB	Single input
-3dB Band width			1600		MHz	
Gain flatness			± 1		dB	
Input signal amplitude	Single input			1600	mVpp	1 ~ 1550 MHz
Equivalent input noise		2.2			$mV/\sqrt{Hz}$	
Input noise	Less than 2GHz	65			μV	RMS value
Sensitivity	2.5Gb/s	20		40	mVpp	
Rise time (t_r)	QD, $\overline{QD}$		170	230	ps	(20 to 80%)
Fall time (t_f)	QD, $\overline{QD}$		170	230	ps	(20 to 80%)
Delay time (t_{pd})	D to QD		350	525	ps	
Pulse width distortion	2.5Gb/s		30		ps pp	
In/Out isolation	Less than 2GHz			40	dB	
Monitor sensitivity	2.5Gb/s	10		40	mV	
Monitor response				1.5	μs	
Monitor hysteresis			6		dB	

Application circuit

Condition: Auto offset canceler, Alarm generate, Auto shutdown

