GL3276A

Description

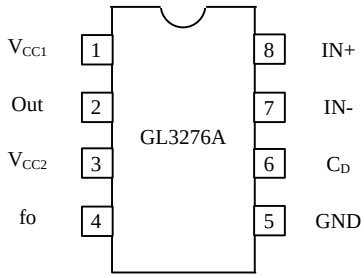
The GL3276A is a bipolar analog ICs specifically developed for use in infrared remote control system receiving preamplifiers. Capable of accepting a photodiode directly, these ICs house a high gain initial amplifier, a limiter, a band-pass filter, a detection circuit and a waveform shaping circuit assembled on a single chip.

Features

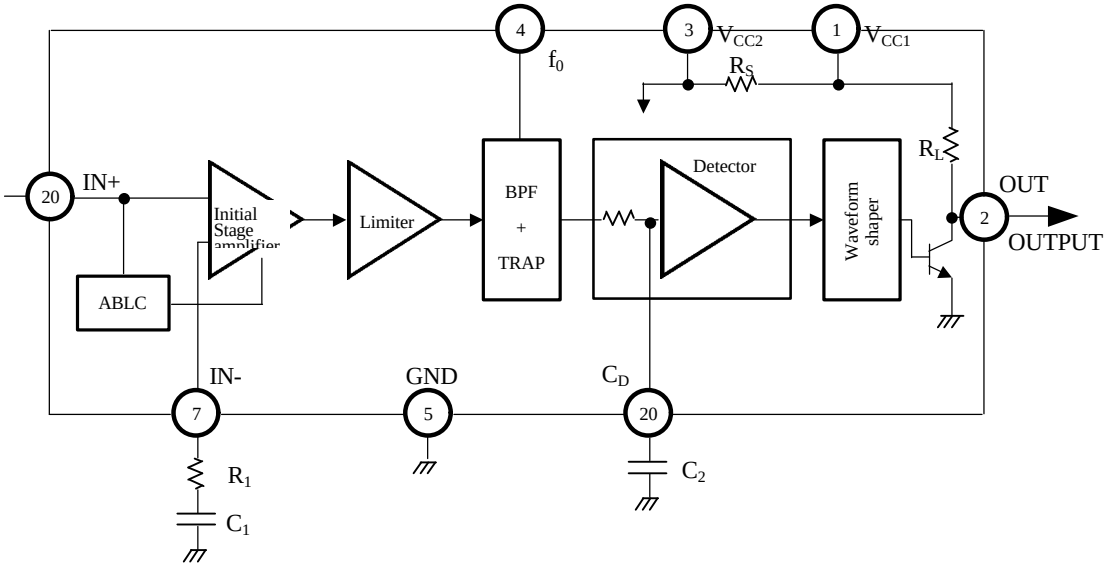
- Less changes of malfunction associated with a high-frequency lighting fluorscent lamp internal trap circuit.
- The central frequency can be varied with an external resistance:
  fo=30 to 80KHz
  fo rimming reduce central frequency variance.
- Few external parts.
  Internal pull-up resistance and power filter resistance.
  Lower-capacitance external capacitor
- Open collector output
  Open collector output with a pull-up resistance.

Pin configuration

(SOP)



Block Diagram



Absolute Maximum Ratings(Ta=25 ¡ É)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CC}	Supply voltage	6.0	V
I_{OUT}	Output Current	2.5	mA
P_D	Allowable power dissipation	270	mW
T_{OPR}	Operating temperature	- 20 to +75	¡ É
T_{STG}	Storage temperature	-40 to +125	¡ É

Recommended Operating Condition

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT
V_{CC}	Supply voltage	4.5	5.0	5.5	V
f_{IN}	Input frequency	30	38	80	KHz

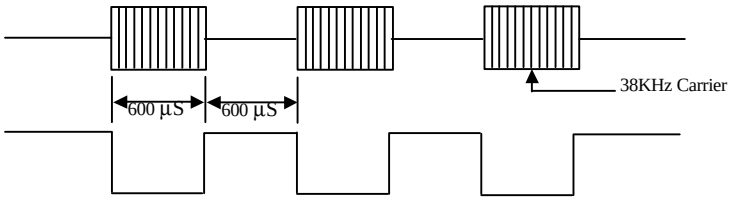
Electrical characteristics (VCC = 5.0V, Ta = 2.5¡ É)

SYMBOL	PARAMETER	TEST CONDITION	MIN	TYP	MAX	UNIT	REMARK
I_{CC}	Supply current			1.2	2.8	mA	
V_{IN}	Input voltage	I_{IN} = 0A I_{IN}=-330 µA	2.0 0.6	2.5 0.8	3.1 1.7	V	
A_V	Voltage gain	f_{IN}=38kHz V_{IN}=30 μV_{P-P}	70	76	80	dB	
F_{BW}	BPF bandwidth	-3dB Bandwidth V_{IN}=30 μV_{P-P}	2.0	2.5	3.0	KHz	
r_{IN}	Input impedance	f_{IN}=38kHz CW V_{IN}=0.2 μV_{P-P}	80	110	160	K§ Ù	note ¨ 1
t_{PW1}	Output pulse width	f_{IN}=38kHz burstwave V_{IN}=500 μV_{P-P}	440		770	µS	note ¨ 1
t_{PW2}		f_{IN}=38kHz burstwave V_{IN}=50mV_{P-P}	440		770	µS	
V_{OL}	Low Level output voltage			0.2	0.4	V	
V_{OH}	Low Level output voltage		4.8	5.0		V	

Note 1 : $r_{IN} = \frac{47}{(V_{IN}/V_X)-1}$ K§ Ù(where V_{IN}=input level, V_X=test value)

2 : input burst wave form

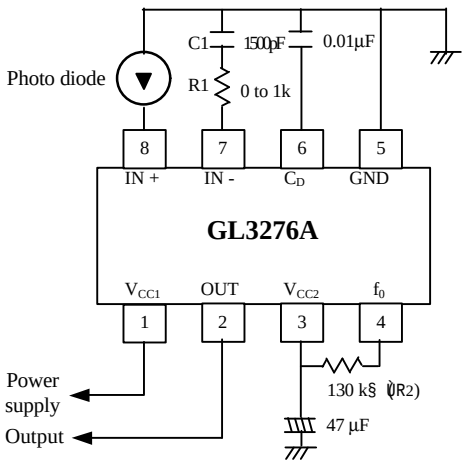
output pulse



Pin Description

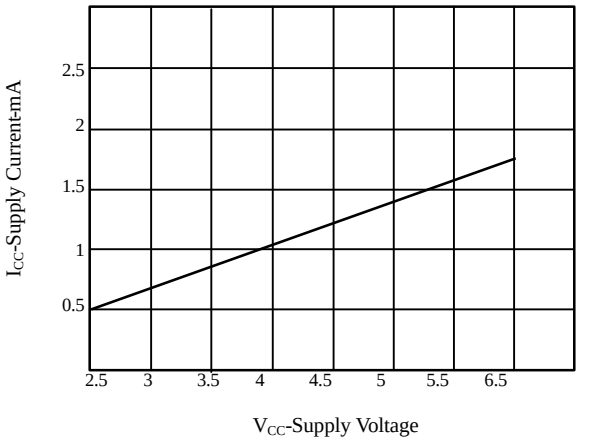
NO.	SYMBOL	PIN FUNCTION	
1	V_{CC1}	Power input	• Apply a voltage of 5V ¡ ¾10 % to pin 1. As the power is output to pin 3 through the internal power filter resistance, connect an electrolytic capacitor to pin 3.
3	V_{CC2}	Power output	
5	GND	Ground	
8	IN +	Input	• With an internal impedance of 110 K§ Ù(typ.) pin 8 can accept a PIN photodiode directly. An automatic bias level control (ABLC) circuit prevents the input from being saturated by external light, assuring bias level stability for the input pin.
7	IN -	Initial amplifier Gain setup	• Initial amplifier differential inverted output. Its gain can be set up with an external impedance.
4	f_o	BPF frequency setup	• The central frequency of the band-pass filter can be varied with an external resistance. A built-in trap circuit prevents malfunctions associated with a high-frequency lighting fluorescent lamp.
6	C_D	Detection capacitor	• Pin to which a detection capacitor is connected.
2	OUT	Output	• Open collector output with pull-up resistance. Its capability to drive a CMOS or TTL makes for easy connection with a receiving microcomputer. The GL3276A has an active low output.

Sample Application Circuits
8 Pin Plastic SOP

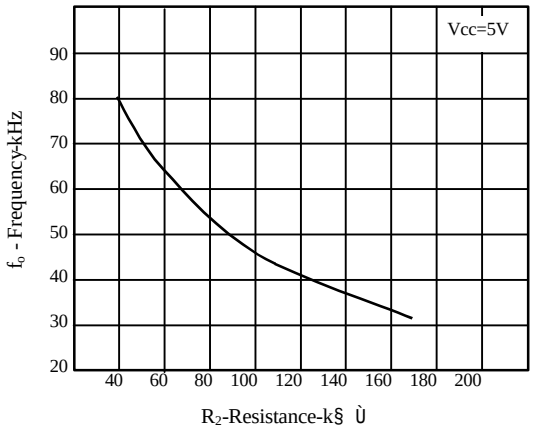


Typical Characteristics (T_A = 25¡ Ê

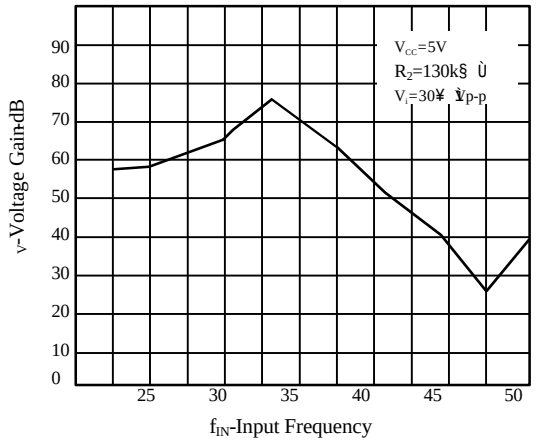
Supply Current vs. Supply Voltage



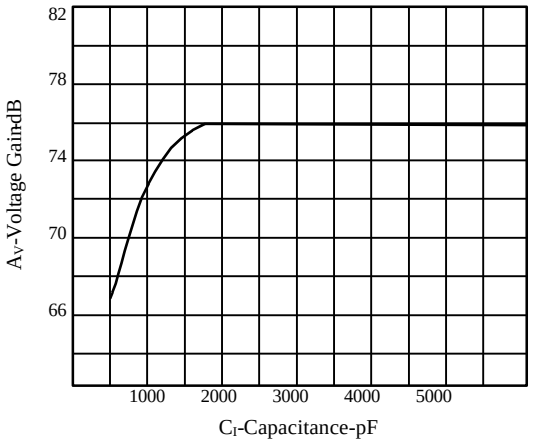
Frequency vs. Resistance (R_2)



Voltage Gain vs. Input Frequency



Gain vs. Capacitance(C_1)



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