

Remocon Receiver Preampifier

The DBL2091 is a bipolar IC for receiving preamplifier of infrared remote control system. it consists of a head amplifier, a limiter, a band pass filter, a signal waveform detector, and a waveform rectifier, etc.

FUNCTIONS

- Built-in filter enable to vary center frequency by an external resistance.
(38 KHz type by no external resistance)
- Possible to direct connection to a photodiode.
- Open collector output(directly connectable to CMOS)
- Internal pull-up resistance and power filter resistance
- Limiter, Detector & Wave form shaper
- Less chances of malfunction associated with a high frequency lighting floure internal trap circuit

FEATURES

- Simple application ; only one external component
 - 38 KHz type ; 1 capacitor
 - The other frequency ; 1 resistor, 1 capacitor
- Selectable center frequency by BPF
- Fixed trap frequency(48 KHz)
- Built-in detection capacitor

APPLICATION

- TV/VTR/AUDIO/SVR/etc REMOCON PREAMPLIFIER

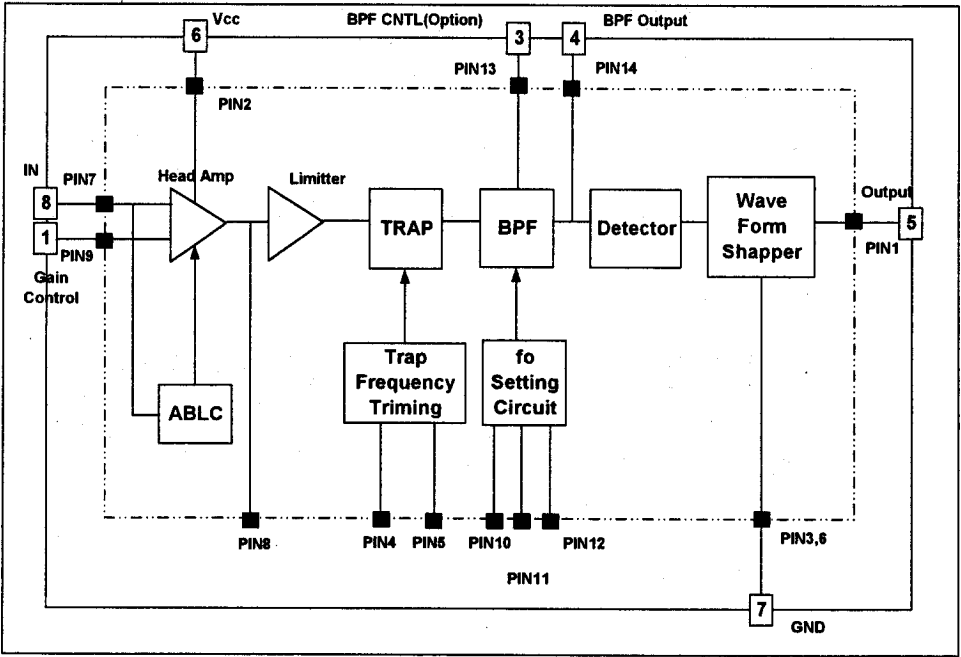
MAXIMUM RATINGS (Ta = 25 °C)

Characteristics	Symbol	Min.	Max.	Unit
Supply Voltage	Vcc	-	6.0	V
Input Voltage	V _{IN}	0	Vcc	V
Output Current	I _o		2.5	mA
Junction Temperature	T _J	-	125	°C
Storage Temperature	T _{stg}	-40	125	°C

OPERATING CONDITIONS (Ta = 25 °C)

Characteristic	Symbol	Min	Typ	Max	Unit
Supply Voltage	Vcc	4.5	5.0	5.5	V
Input Frequency	F _{in}	30	38	80	KHz
Operating Temperature	T _{ope}	-25	25	75	°C

BLOCK DIAGRAM



PIN DESCRIPTION

PAD No.	8SOP No.	Symbol	Description
1	5	OUT	Signal Output Terminal
2	6	Vcc	Power Supply Terminal
3	7	GND1	Output Power Tr. Ground Terminal
4	-	T1	Trap. Frequency Trimming Terminal
5	-	T2	Trap. Frequency Trimming Terminal
6	7	GND2	Signal Ground Terminal
7	8	IN+	Signal Input Terminal
8	-	HOP	Head-Amp. Output Terminal (for EDS TEST)
9	1	IN-	Head-Amp. Negative Terminal (Gain Control)
10	-	T3	BPF. Frequency Trimming Terminal
11	-	T4	BPF. Frequency Trimming Terminal
12	-	T5	BPF. Frequency Trimming Terminal
13	3	BPF CNTL	BPF. Frequency Optional Terminal
14	4	BPF	BPF. Output Terminal

ELECTRICAL CHARACTERISTICS (V_{cc} = 12V, T_a = 25 °C)

Characteristic	Symbol	Condition	MIN	TYP	MAX	UNIT
Supply Current	I _{ccq}	No Input signal	1.8	2.6	3.5	mA
Input Pin DC Voltage	V _{in1}	I _{in} = 0 uA	2.2	2.7	3.2	V
	V _{in2}	I _{in} = 300 uA	0.6	1.1	1.7	
Output Voltage	V _{ol}	Output Pin Open	-	0.05	0.4	
	V _{oh}	-	4.8	5.0	-	
Input Impedance	R _{in}	V _{in} = 300 mVp-p F _{in} = 38KHz	50	100	140.0	Kohm
Output Pulse Width	T _{pw1}	V _{in} = 500 uVp-p F _{in} = 38KHz	440	600	800	uS
	T _{pw2}	V _{in} = 500 mVp-p F _{in} = 38KHz	440	600	800	uS
Voltage Gain	A _v	V _{in} = 31.6 uVp-p F _{in} = 38KHz	68	75	81	dB
Head-amp Gain	A _v (HA)	V _{in} = 2 mVp-p F _{in} = 38KHz	40	45	50	dB
BPF Bandwidth	FBW	V _{in} = 31.6 uVp-p	2.5	3.5	5.0	KHz

- Rin Test Method

- . Input signal ; V_{in} = 300mVp-p, F_{in} = 38KHz
- . Check the VR value by adjusting VR(40~200 Kohm) at that time of signal of Test point is V_{in} = 150 mVp-p, F_{in} = 38KHz.

- Output Pulse Width(T_{pw1}, T_{pw2}) Test Method

- . Input a burst wave signal of 1.2 msec cycle, 38KHz.

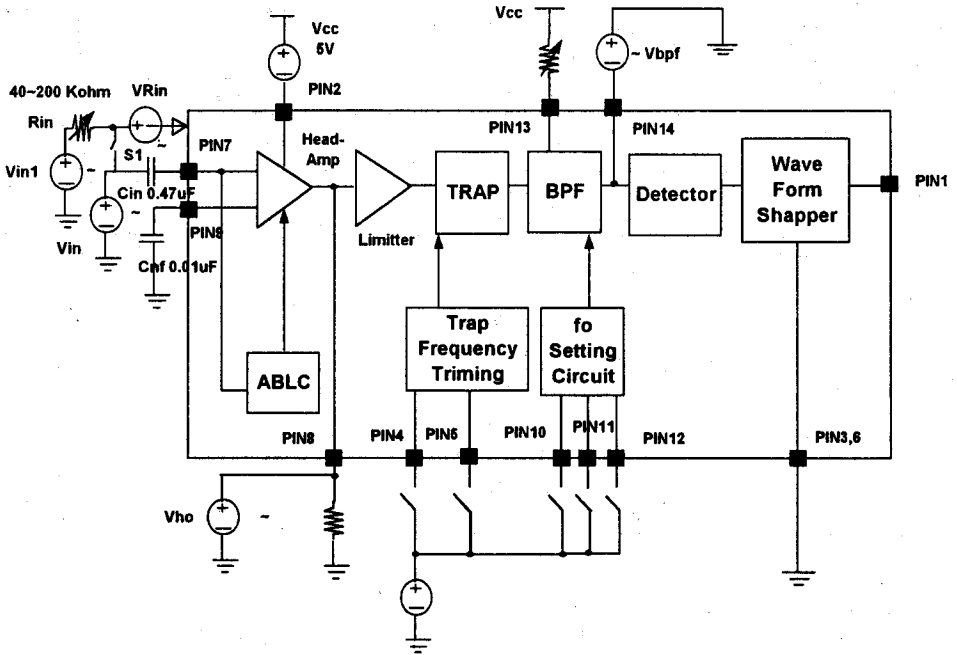
- Voltage Gain Test Method

- . A_v(dB) = 20 * log (V_{BPF} / V_{in})

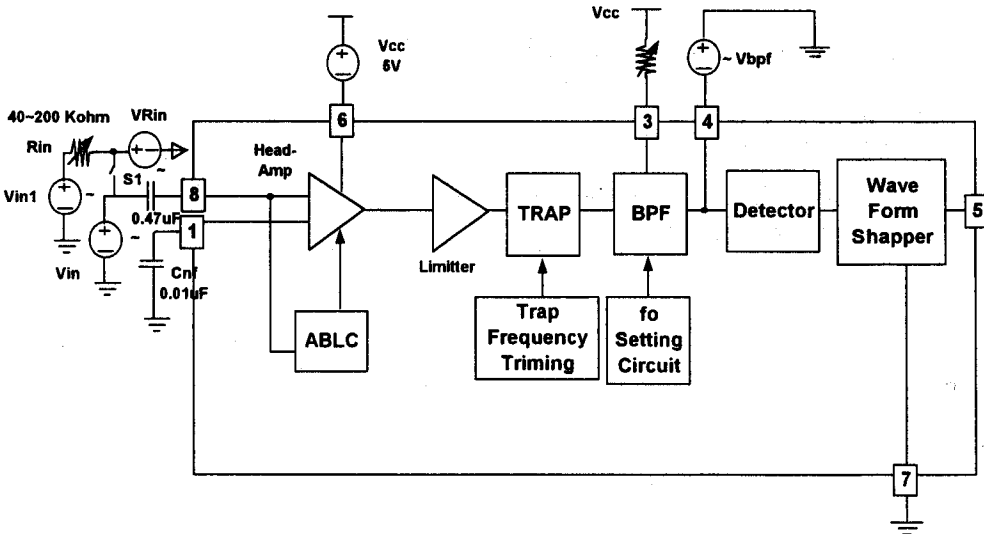
- Head-amp Voltage Gain Test Method (EDS Test Only)

- . A_v(HA)(dB) = 20 * log (V_{HOP} / V_{in})

TEST CIRCUIT 1. Wafer Form



2. Package Form



APPLICATION CIRCUIT

