## Full Wave Rectifier Using Single Supply OPAMP

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This is a Full wave rectifier project built using MAX44267 dual OPAMP which provides true zero output with a single supply. The circuit converts Bipolar/AC input into full-wave output. CN1 is provided for sinewave input, CN2 helps to connect the power and output. Operating supply 15V DC, D1 power LED.

**The MAX44267** precision, low-noise, low-drift dual operational amplifier offers true-zero output that allows the output to cross zero maximizing the dynamic range of an ADC and increasing resolution. In addition, the input common-mode range extends from +13.5V down to -12V. The MAX44267 integrates charge-pump circuitry that generates the negative voltage rail in conjunction with external capacitors. This allows the amplifier to operate from a single +4.5V to +15V power supply, but it is as effective as a normal dual-rail ±4.5V to ±15V amplifier. The architecture eliminates the need for a negative power-supply rail, saving system cost and size. The MAX44267 is unity-gain stable with a gain-bandwidth product of 5MHz. The device features low offset voltage of 50µV (max), drift of 0.4µV/°C (max), and 200nVP-P noise from 0.1Hz to 10Hz. The low offset and noise specifications and wide input common-mode range make the device ideal for sensor transmitters and interfaces. Varying the external charge pump capacitors enables the charge-pump noise to be minimized.

## Features

- Operating power Supply 15V DC @ 10mA
- Input Signal 100mV to 4V Peak to Peak
- Input Frequency Response 1Hz to 10Khz
- 2Khz Full wave output from 1Khz Sinewave
- CN1 2.54MM Male Header Connector for Input Signal
- D1 Power LED
- CN2 Signal Output and Power Input
- PCB Dimensions 30.64MM X 19.69MM















Author Rajkumar Sharma









BOM						
NO.	QNTY.	REF.	DESC.	MANUFACTURER	SUPPLIER	SUPPLIER PART NO
1	1	CN1	2 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	
2	1	CN2	4 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5317-ND
3	2	C1,C3	10uF/25V SIZE 1206	MURATA/YAGEO	DIGIKEY	732-5315-ND
4	4	C2,C4,C5,C6	0.1uF/50V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
5	1	C7	15PF/50V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
6	1	C8	0.022UF/25V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
7	1	D1	LED SMD SIZE 0805	OSRAM	DIGIKEY	475-1278-1-ND
8	1	D2	1N4148 SMD	MICROCHIP	DIGIKEY	494-JAN1N4148UR-1
9	1	L1	F-BID 80 Ohms/100Mhz	TDK	DIGIKEY	445-2187-1-ND
10	1	R1	2.2K 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
11	1	R2	20K 1% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
12	1	R3	10K 1% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
13	1	R4	60.4K 1% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
14	1	R5	30.1K 1% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
15	1	U1	MAX44267	MAXIM	MOUSER	700-MAX44267AUD+











SILK SCREEN TOP

BOTTOM LAYER

PCB DIMENSIONS 30.64MM X 19.69MM

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TOP LAYER





