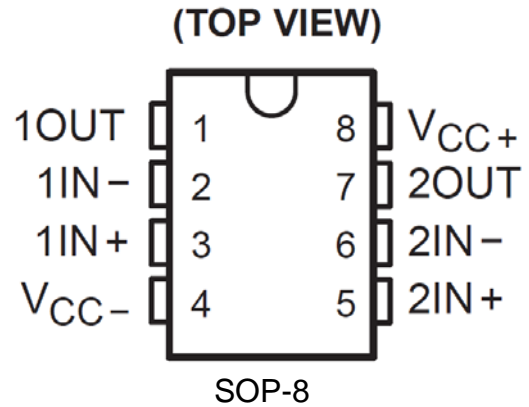


**Summary**

TL072 is a dual operational amplifier with high-speed J-FET input, which consists of high-voltage J-FET and bipolar transistor. It has high conversion rate, low input bias current and offset current, and low temperature coefficient of offset voltage. The working range is 0°C-70°C.

TL072 is available in SOP8 packages.

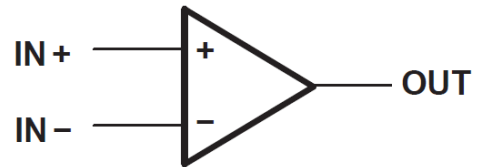
**Pin diagram**



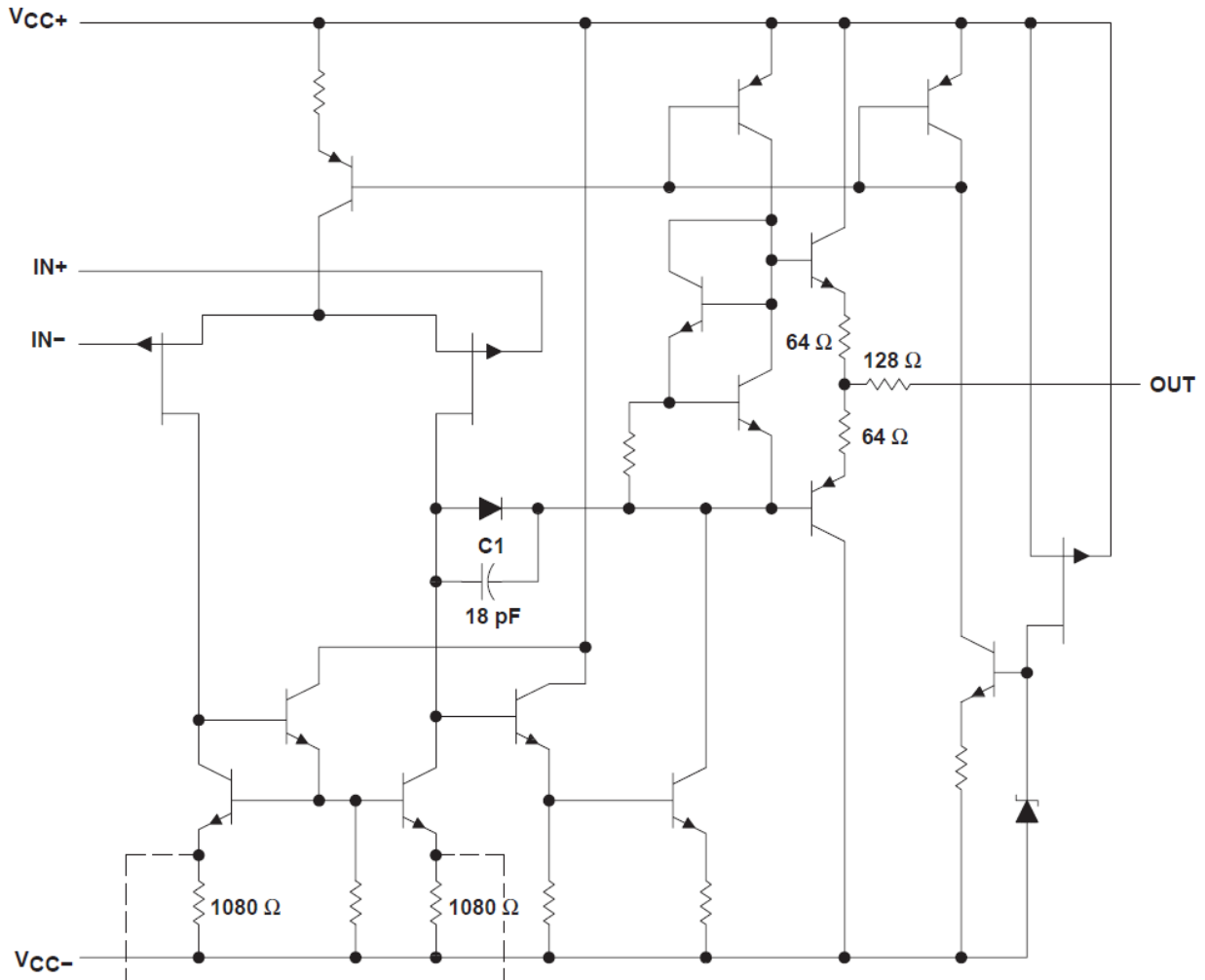
**Main feature**

- Lower power consumption
- Wide common - mode and differential - mode input voltage range
- Low input bias current and offset current  
Output short - circuit current protection
- High input impedance
- High conversion rate
- High gain bandwidth product, up to 4MHz

**Symbol (each operational amplifier)**



Internal block diagram (each operational amplifier)



Limit parameter

symbol	describe	limit value	unit
Vcc	Power supply voltage	±18	V
Vi	input voltage	±14	V
Vid	Differential mode input power	±28	V
Toper	Working temperature	0—70	°C
Tstg	Storage temperature	-65—150	°C

Electrical characteristics (VCC = ±15, T<sub>amp</sub> = 25°C shall be specified separately)

symbol	Parameter name	test condition	test value			unit
			Min	Typ	Max	
V <sub>io</sub>	offset voltage	V <sub>o</sub> =0V		3	10	mV
I <sub>io</sub>	Input offset current	V <sub>o</sub> =0V			1.5	nA
I <sub>ib</sub>	Output bias current	V <sub>o</sub> =0V			2.5	nA
V <sub>icr</sub>	Input common mode voltage		- 12	±11	15	V
V <sub>om</sub>	Peak output voltage	RL = 10 kΩ RL ≥ 2 kΩ	±11 ±10	±13.5 ±12.5		V
AVD	Large signal voltage gain	RL ≥ 2 kΩ VO = ±10 V	80	95		dB
B1	Gain bandwidth product			3		MHz
CMRR	common mode rejection ratio		70	85		dB
kSVR	Power supply rejection ratio	VCC= ±15 V to ±9 V V <sub>o</sub> =0V	70	86		dB
ICC	Static current- per channel			1.4	2.8	mA
SR	conversion rate	V <sub>I</sub> = 10 V,	8	10		V/us
t <sub>r</sub>	risetime			0.1		us
R <sub>i</sub>	input impedance			10 <sup>12</sup>		Ω

Typical application circuit diagram (including one operational amplifier)

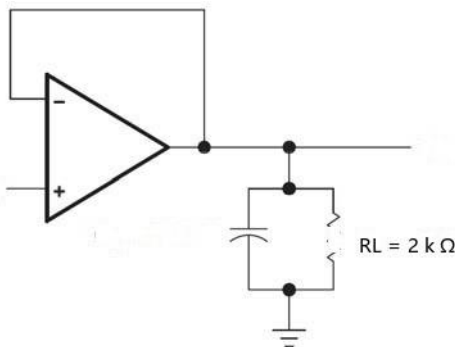


Figure 1. Unity Gain Circuit

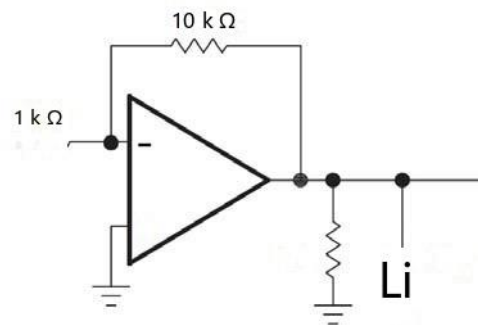


Figure 2.10 - fold gain circuit

General J - FET input dual operational amplifier

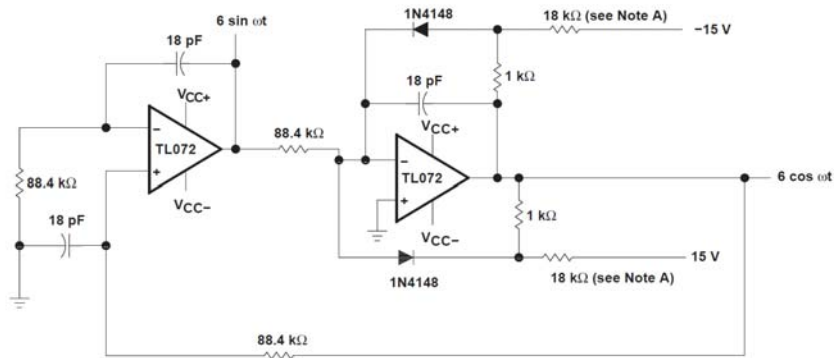


Figure 3. 100KHz oscillator

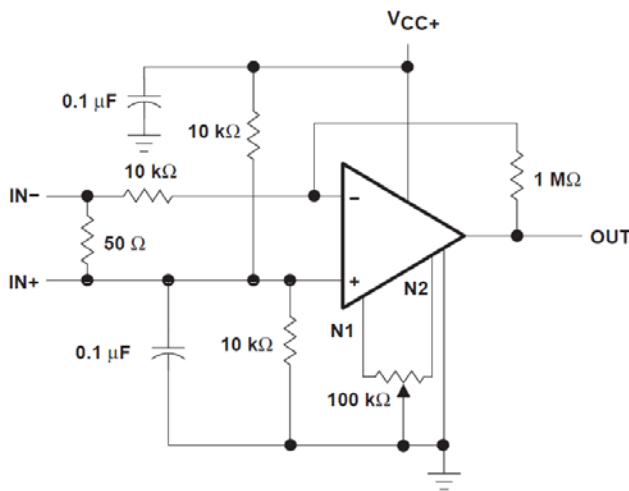


Figure 4. AC amplifier

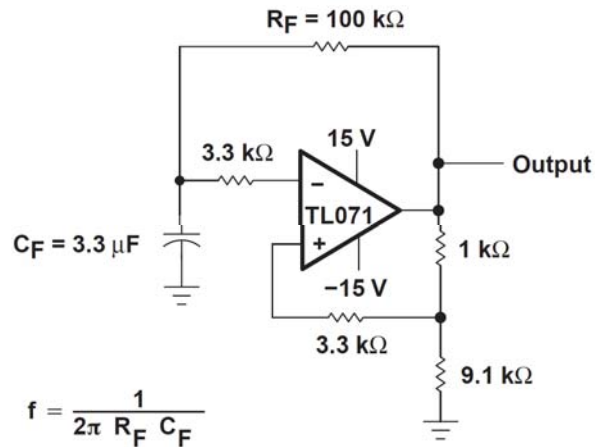
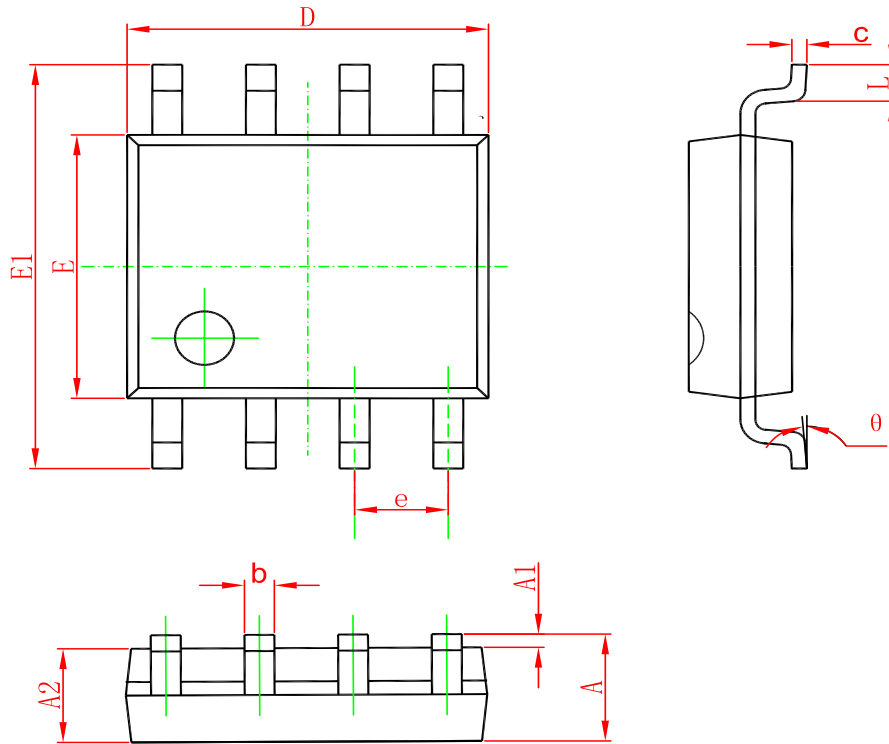


Fig. 5 0.5Hz square wave oscillator

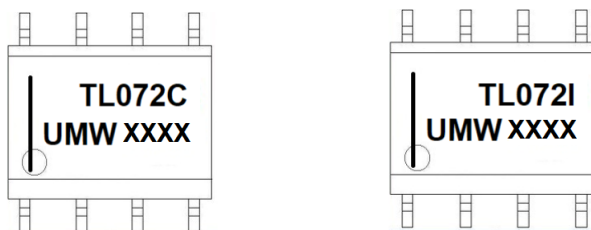
PACKAGE OUTLINE DIMENSIONS

SOP-8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

**Marking**



**Ordering information**

Order code	Package	Baseqty	Deliverymode
UMW TL072CDR	SOP-8	2500	Tape and reel
UMW TL072IDR	SOP-8	2500	Tape and reel

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[E2-A](#) [UPC259G2-E1-A](#) [UPC4741G2-E1-A](#) [UPC4558G2-E1-A](#) [UPC1251GR-9LG-E1-A](#) [UPC4744G2-E1-A](#) [UPC4092G2-E1-A](#)  
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