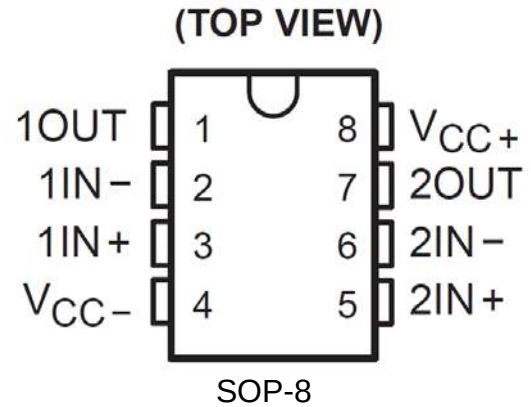


Summary

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.

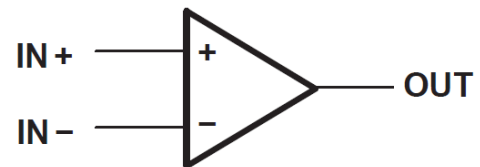
Pin diagram



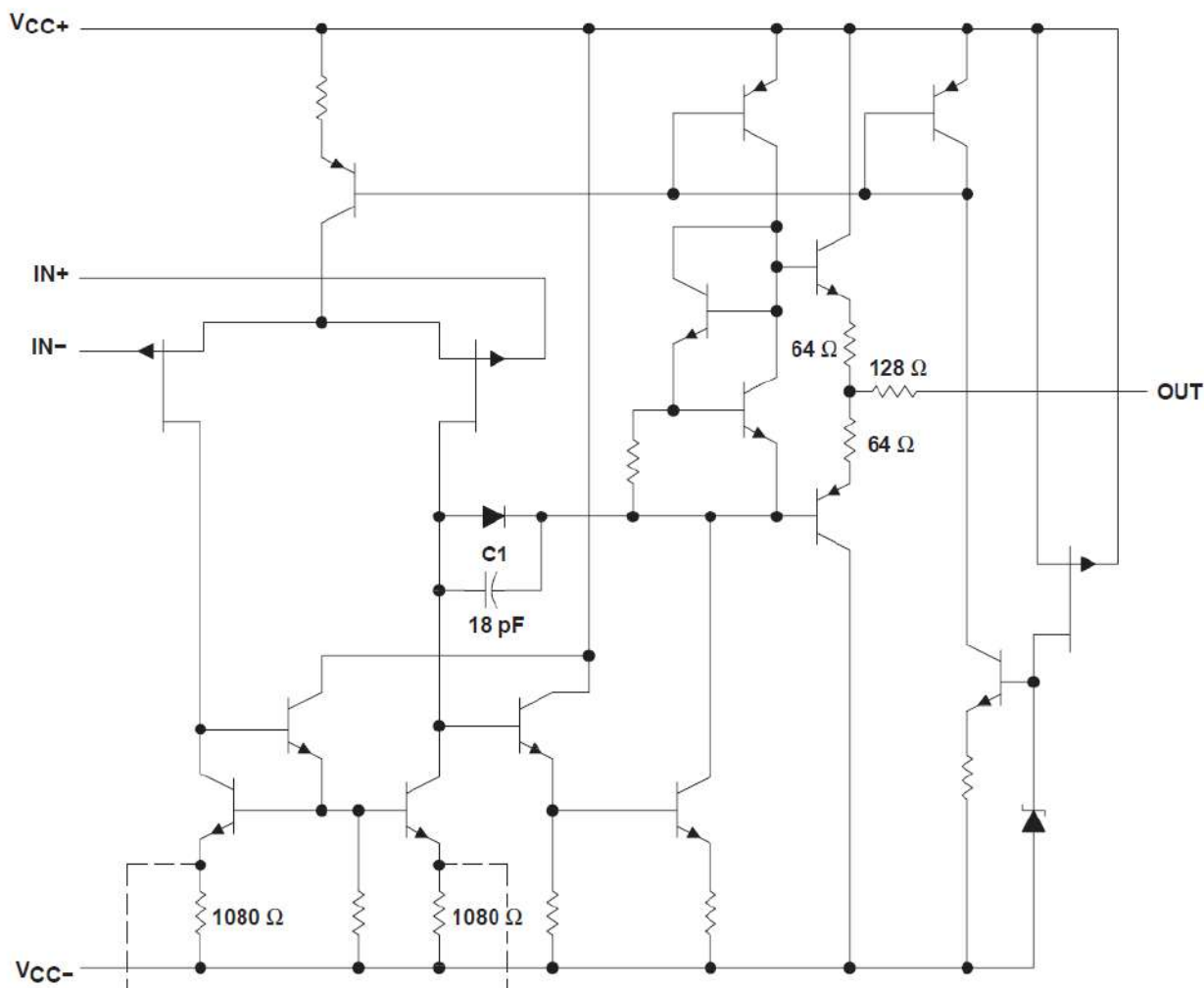
Main feature

- 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 ($V_{CC} = \pm 15$, $T_{amp} = 25^{\circ}\text{C}$ shall be specified separately)

symbol	Parameter name	test condition	test value			unit
			Min	Typ	Max	
V_{io}	offset voltage	$V_o = 0\text{V}$		3	10	mV
I_{io}	Input offset current	$V_o = 0\text{V}$			1.5	nA
I_{ib}	Output bias current	$V_o = 0\text{V}$			2.5	nA
V_{icr}	Input common mode voltage		-12	± 11	15	V
V_{om}	Peak output voltage	$R_L = 10\text{ k}\Omega$ $R_L \geq 2\text{ k}\Omega$	± 11 ± 10	± 13.5 ± 12.5		V
AVD	Large signal voltage gain	$R_L \geq 2\text{ k}\Omega$ $V_o = \pm 10\text{ V}$	80	95		dB
B1	Gain bandwidth product			3		MHz
CMRR	common mode rejection ratio		70	85		dB
kSVR	Power supply rejection ratio	$V_{CC} = \pm 15\text{ V}$ to $\pm 9\text{ V}$ $V_o = 0\text{V}$	70	86		dB
ICC	Static current- per channel			1.4	2.8	mA
SR	conversion rate	$V_I = 10\text{ V}$,	8	10		V/ μs
t_r	risetime			0.1		μs
R_i	input impedance			10^{12}		Ω

Typical application circuit diagram (including one operational amplifier)

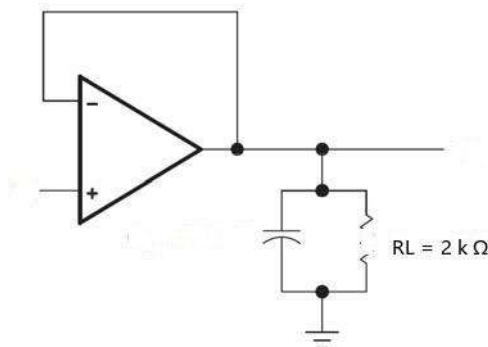


Figure 1. Unity Gain Circuit

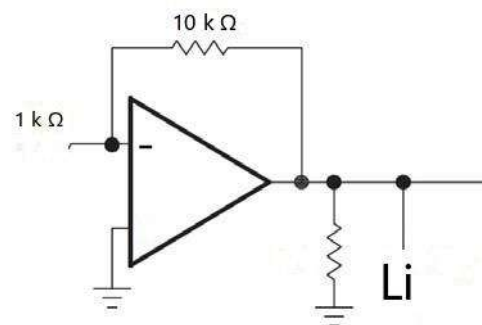


Figure 2.10 - fold gain circuit

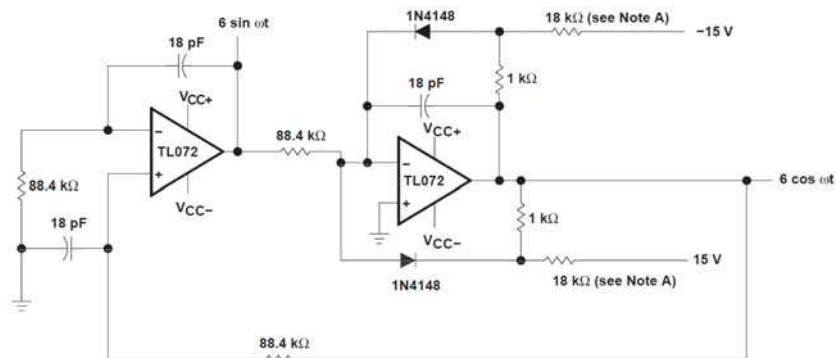


Figure 3.100KHz oscillator

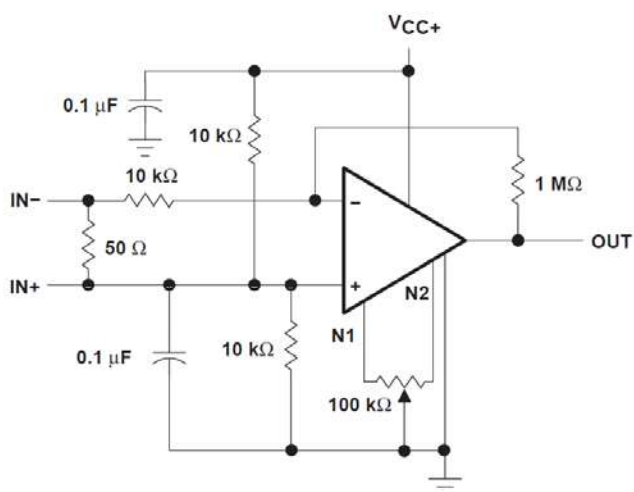


Figure 4. AC amplifier

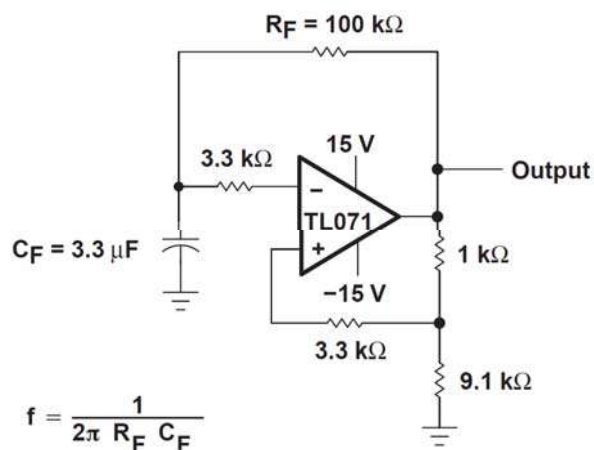
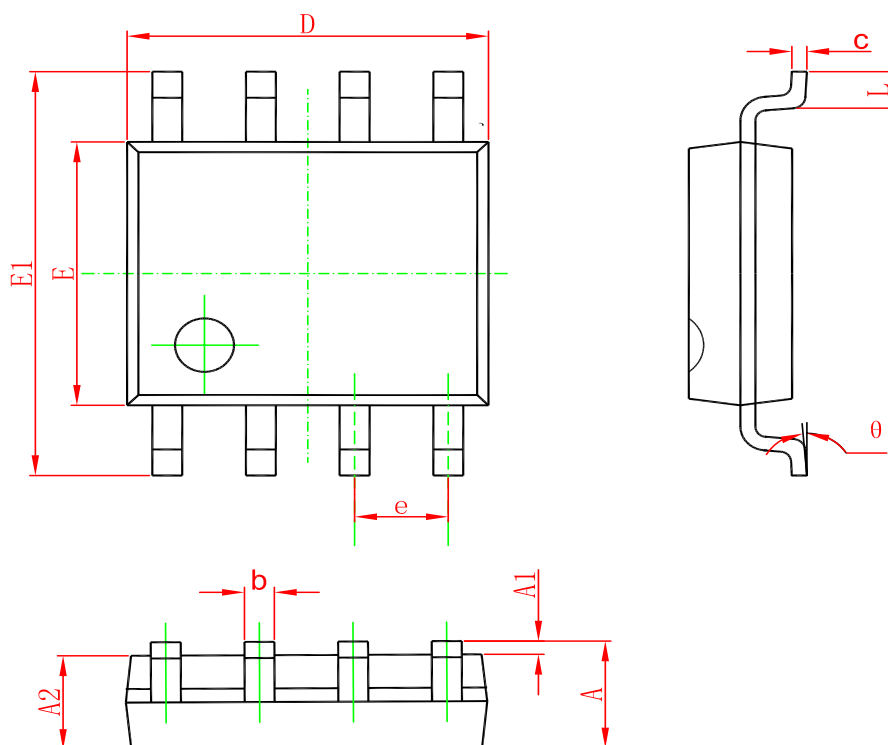


Fig. 5 0.5Hz square wave oscillator

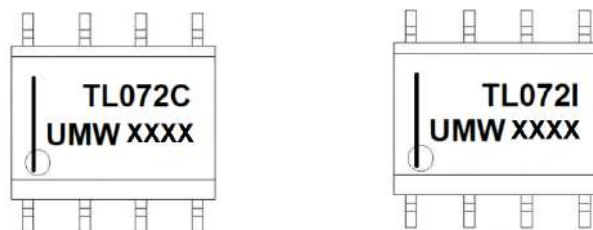
PACKAGE OUTLINE DIMENSIONS

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