UMW®

## 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

(TOP VIEW)

1OUT	1	8	V_CC+
1IN−	2	7	2OUT
1IN+	3	6	2IN−
V_CC−	4	5	2IN+

SOP-8
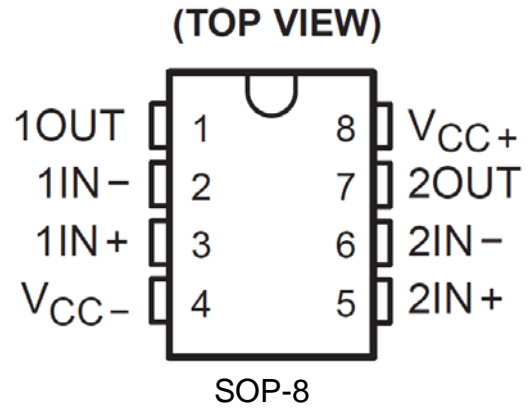
## Main feature

- 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)

IN +

IN −

OUT
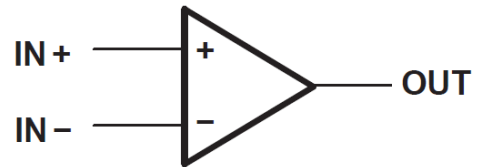
Internal block diagram (each operational amplifier)
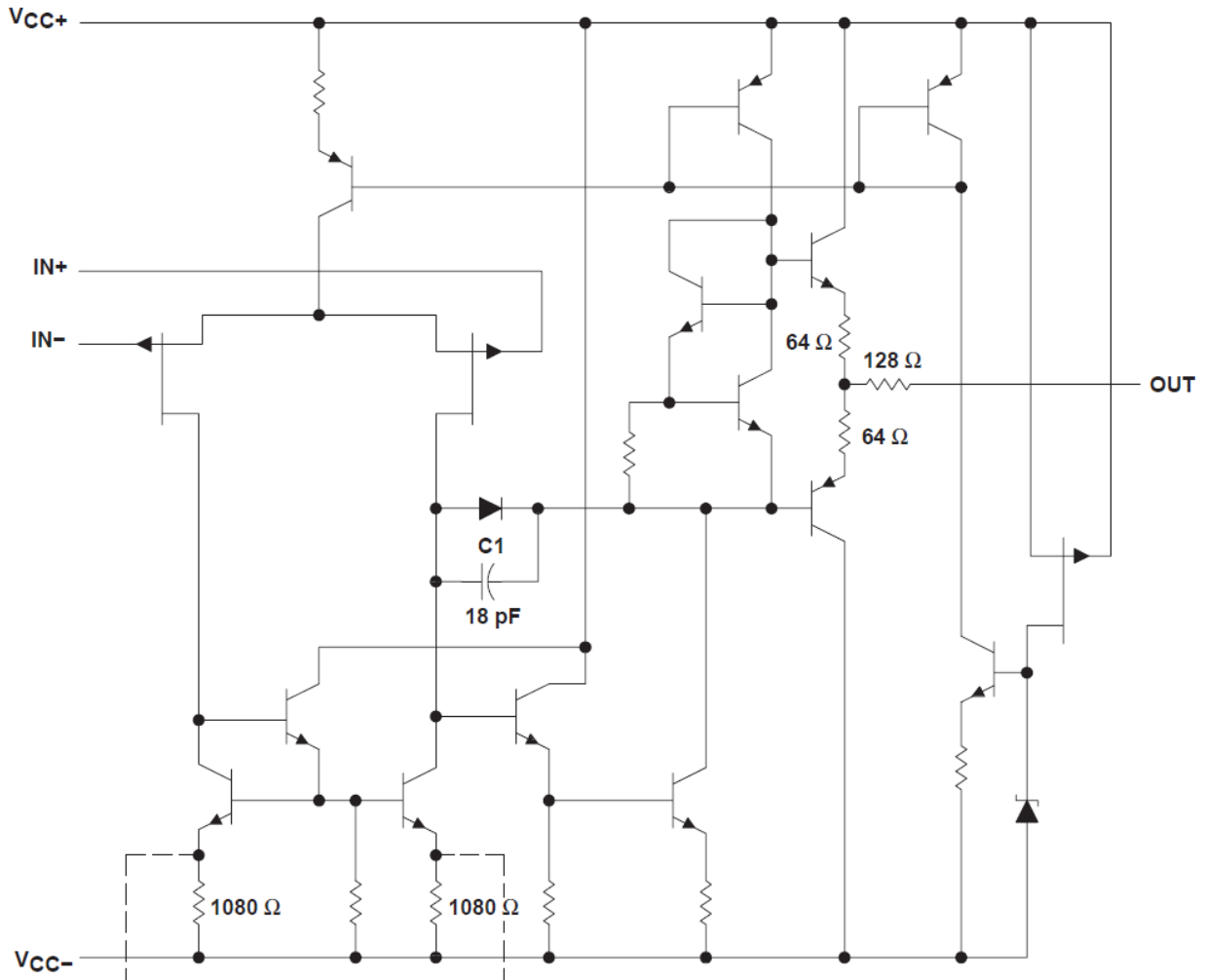
Limit parameter

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	℃
Tstg	Storage temperature	- 65—150	℃

General J - FET input dual operational amplifier

Electrical characteristics (VCC =±15, Tamp = 25°C shall be specified separately)

symbol	Parameter name	test condition	test value			unit
			Min	Typ	Max	
Vio	offset voltage	Vo=0V		3	10	mV
Iio	Input offset current	Vo=0V			1.5	nA
Iib	Output bias current	Vo=0V			2.5	nA
Vicr	Input common mode voltage		- 12	±11	15	V
Vom	Peak output voltage	RL = 10 kΩ	±11	±13.5		V
		RL ≥ 2 kΩ	±10	±12.5		
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 Vo=0V	70	86		dB
ICC	Static current- per channel			1.4	2.8	mA
SR	conversion rate	VI = 10 V,	8	10		V/us
tr	risetime			0.1		us
Ri	input impedance			10^{12}		Ω

Typical application circuit diagram (including one operational amplifier)
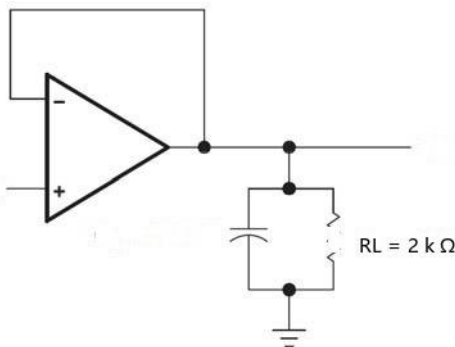
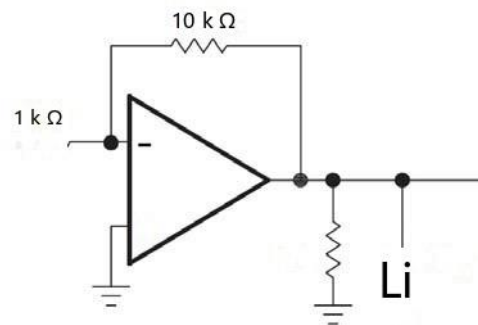Figure 1. Unity Gain Circuit

Figure 2.10 - fold gain circuit

Figure 3.100KHz oscillator
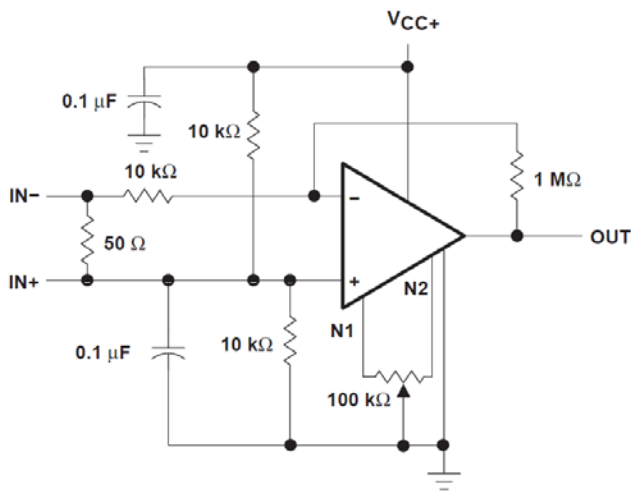
Figure 4. AC amplifier

$$f = \frac{1}{2\pi \, R_F \, C_F}$$
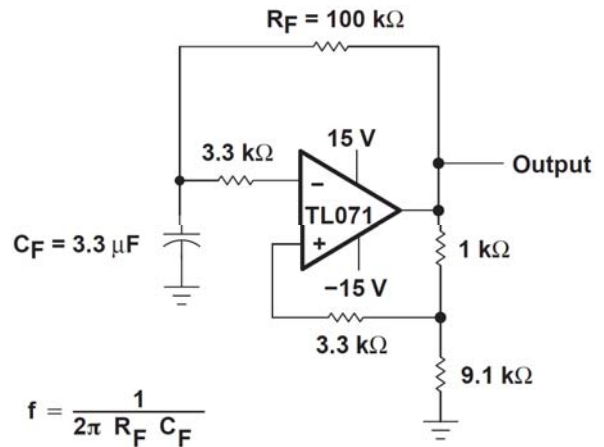
Fig. 5 0.5Hz square wave oscillator

PACKAGE OUTLINE DIMENSIONS

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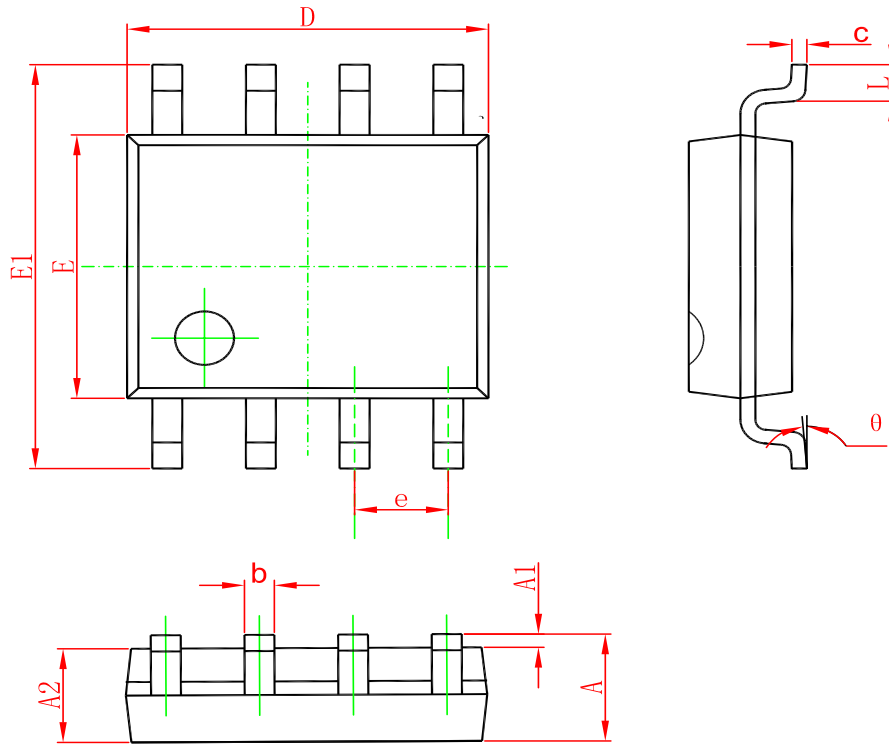
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)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

Marking
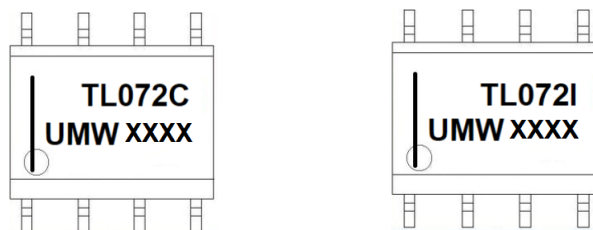
Ordering information

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