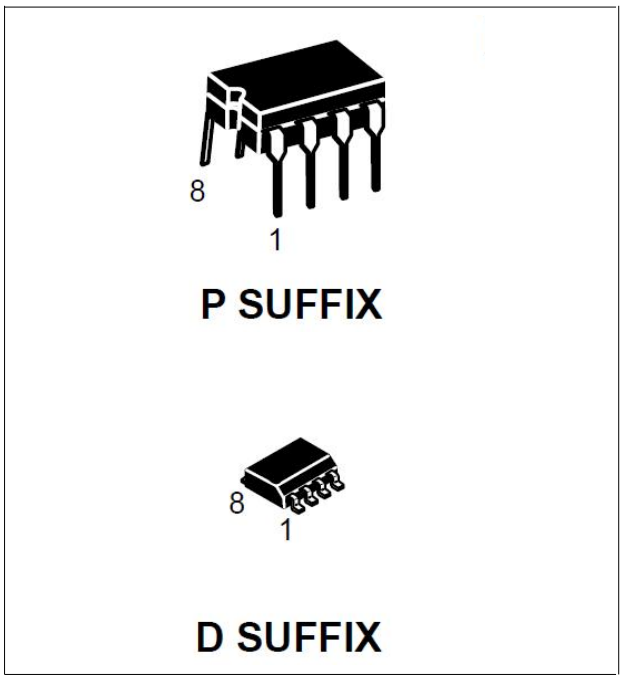
General J-FET input dual operational amplifier

summary

The TL072 is a high speed dual operational amplifier with J-FET input. It consists of a high voltage J-FET and a bipolar transistor. It features high switching rate, low input bias current and offset current, and very low offset voltage temperature coefficient. The operating range is 0 --70 .

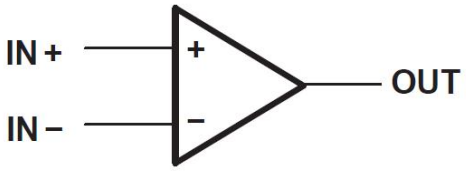
TL072 Provides DIP8 and SOP8, packaging forms.



main features

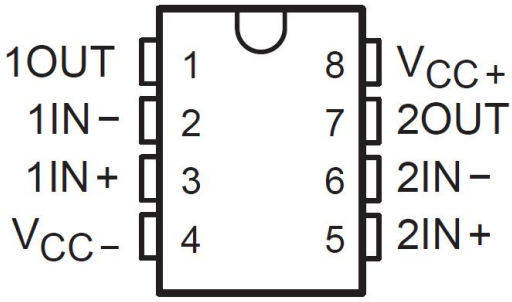
- Lower power consumption
- Wide common and differential mode input voltage range
- Low input bias current and offset current
- Output short circuit current protection
- high input impedance
- High conversion rate
- High gain bandwidth product, up to 4MHz

Symbols (per amplifier)

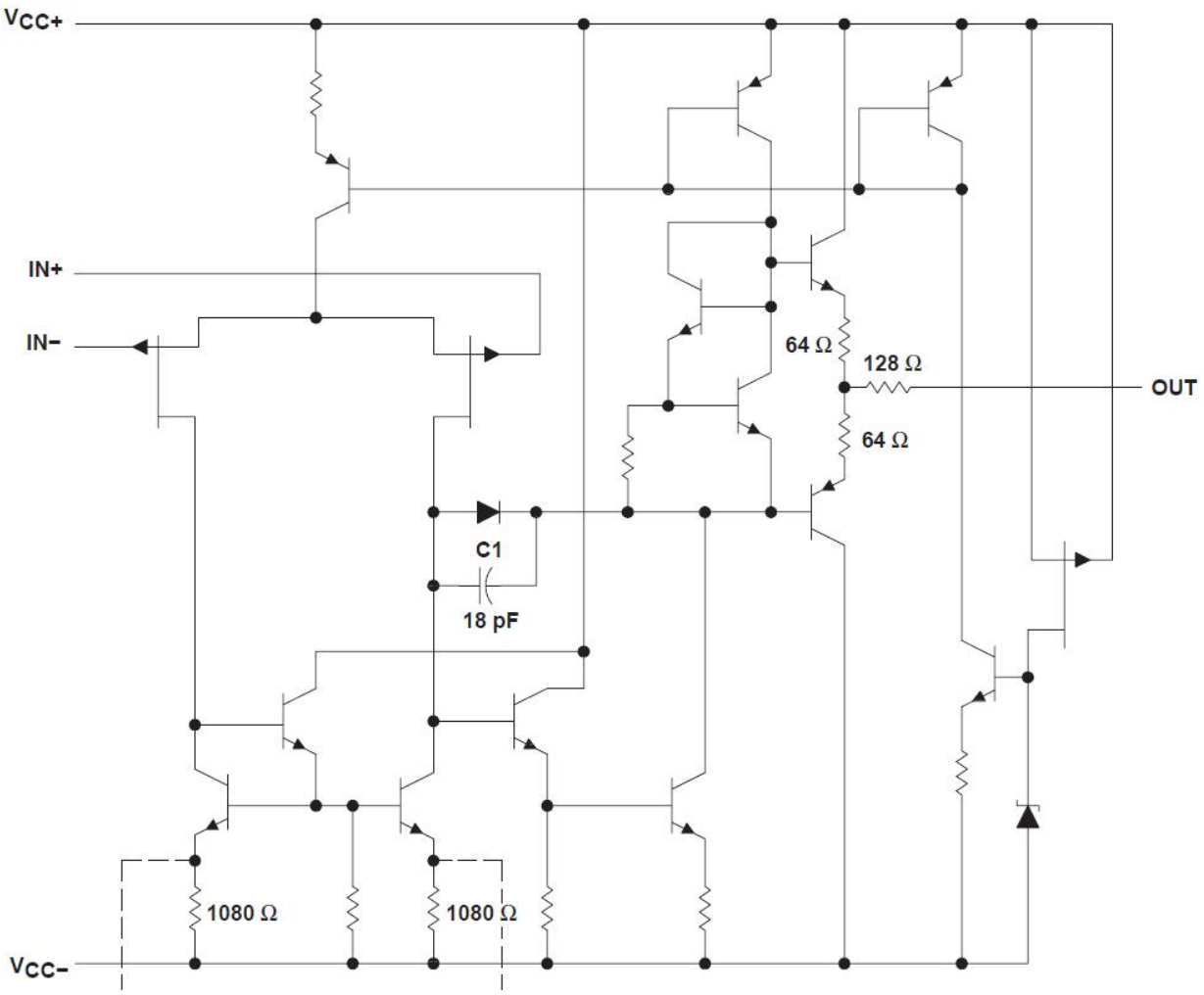


Pin diagram

(TOP VIEW)



Internal block diagram (each amplifier)



absolute rating

Symbol	Description	Extreme	Unit
Vcc	Supply voltage	± 18	V
Vi	Input voltage	± 14	V
Vid	Differential mode input voltage	± 28	V
Toper	Working temperature	0—70	℃
Tstg	Storage temperature	−65—150	℃

Electrical characteristics (Vcc= ± 15, Tamp=25 , special conditions are explained separately)

Symbol	Parameter name	Test condition	Test value			Unit
			Min	Typ	Max	
Vio	Offset voltage	Vo=0V		3	10	mV
Iio	Input offset curr-ent	Vo=0V			1.5	nA
Iib	Output bias current	Vo=0V			2.5	nA
Vicr	Enter the common mode voltage		−12	± 11	15	V
Vom	Output voltage peak	RL = 10 kΩ RL ⩾ 2 kΩ	± 11 ± 10	± 13.5 ± 12.5		V
AVD	Large signal volt-age gain	RL ⩾ 2 kΩ, VO = ± 10 V	80	95		dB
B1	Gain bandwidth pr-oduct			3		MHz
CMRR	Cmrr		70	85		dB
kSVR	Power supply reje-ction ratio	VCC = ± 15 V to ± 9 V Vo=0V	70	86		dB
ICC	Static current-per channel			1.4	2.8	mA
SR	Slew rate	VI = 10 V,	8	10		V/us
tr	Rise time			0.1		us
Ri	Input impedence			10^{12}		Ω

Application circuit diagram typical (one of the operational amplif-iers)

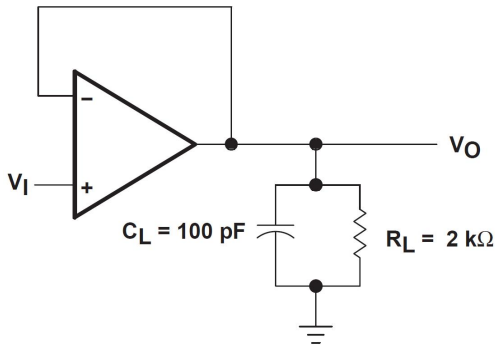


Figure 1. Unit gain circuit

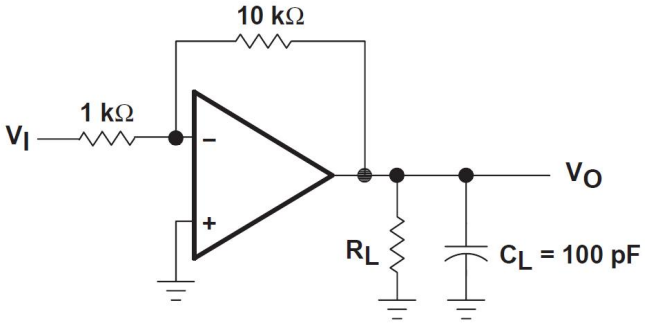


Figure 2. 10 times gain circuit

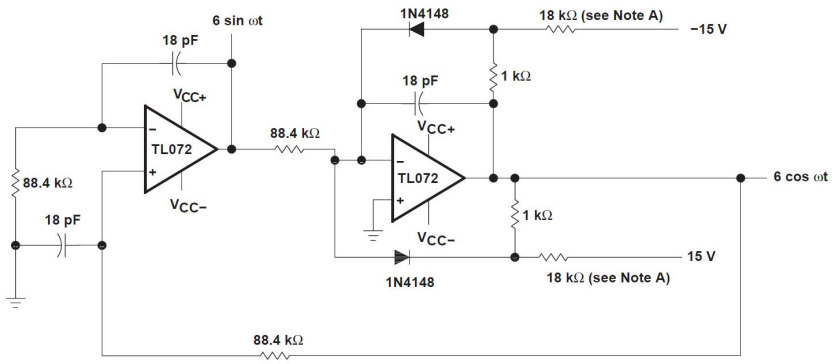


Figure 3. 100KHz oscillator

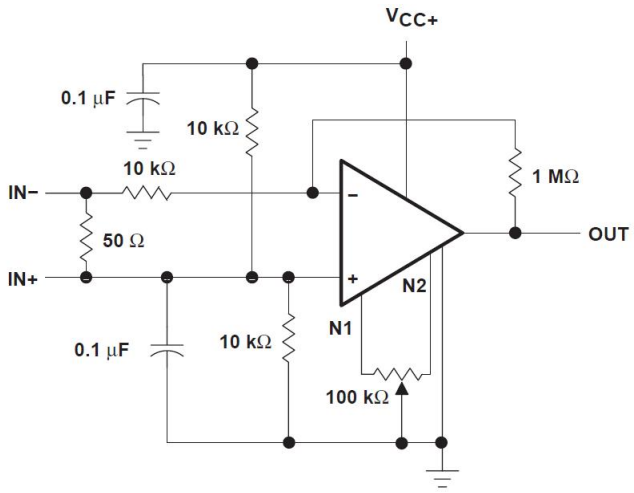


Figure 4. AC amplifier

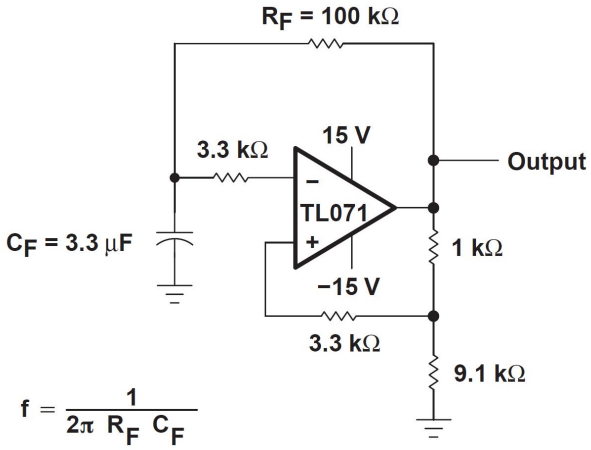
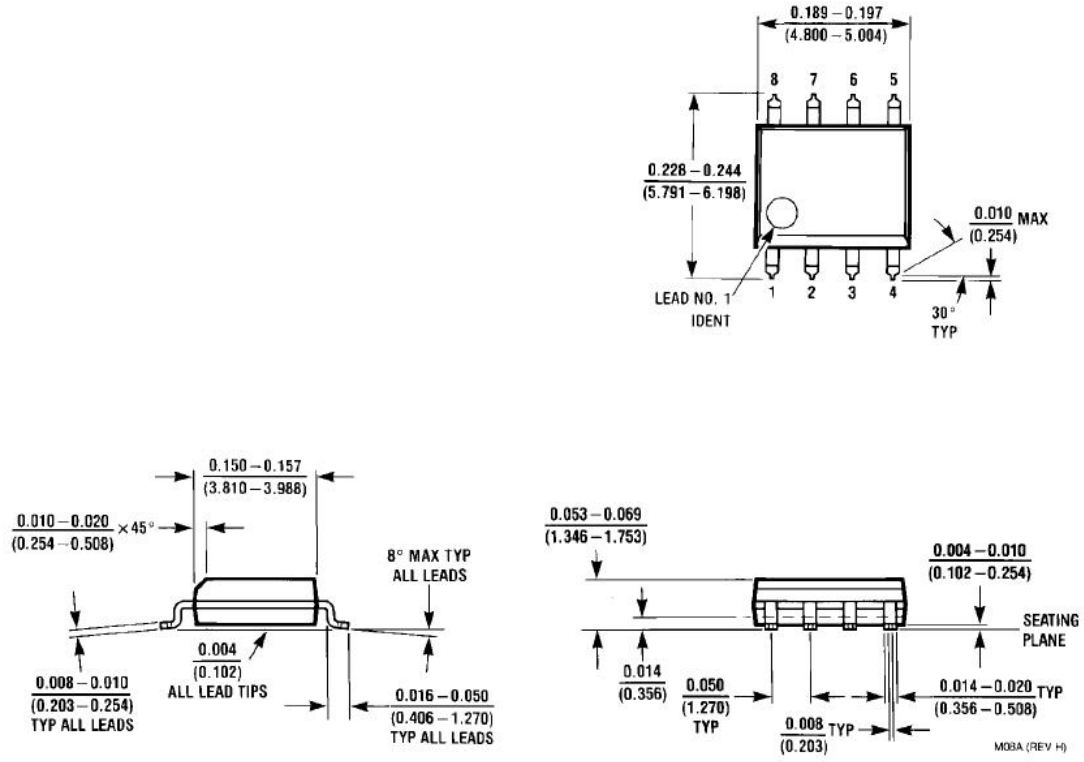
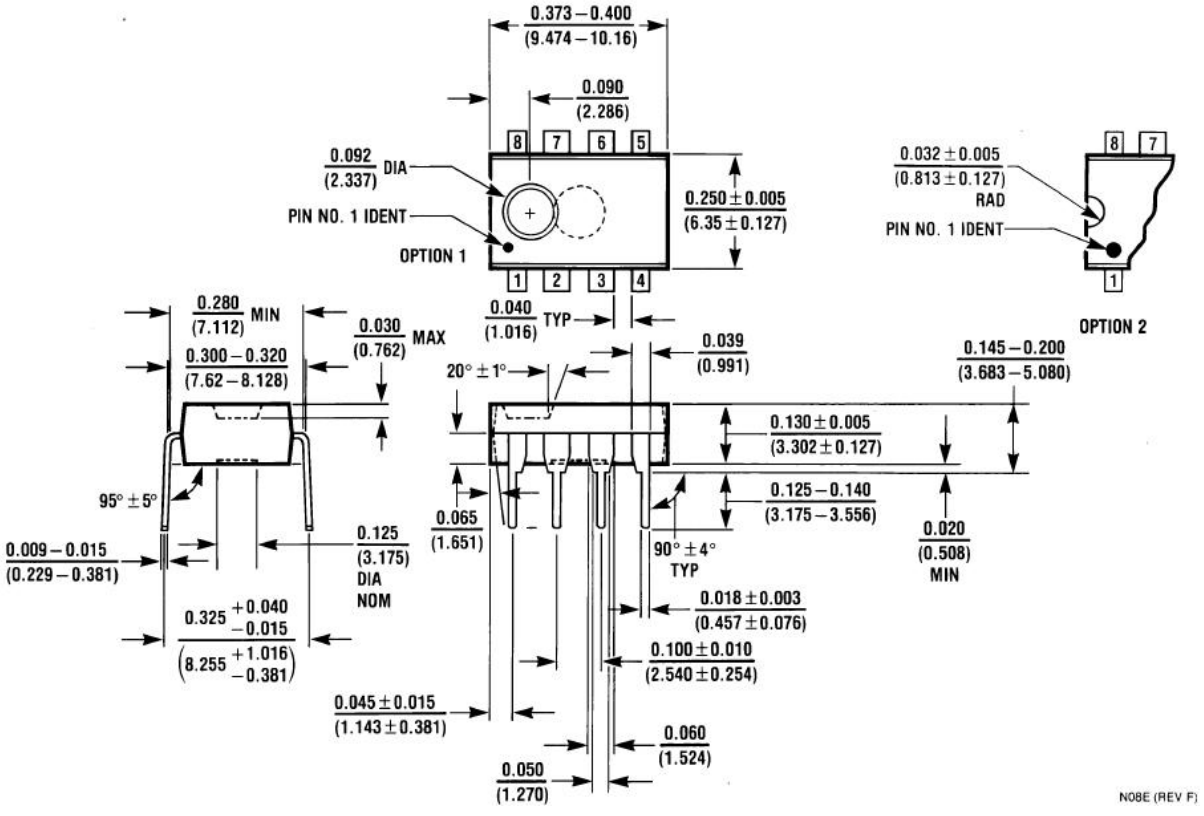


Figure 5 0. 5Hz square wave oscillator

Package information



SOP8



DIP8