



## Descriptions

Consisted of high voltage J-FET and bipolar transistors, the TL071CDR is a high speed J-FET single- channel operational amplifier, featured with high slew rate, low input offset and bias current and low offset voltage temperature rate. The TL071CDR provides SOP-8(SOIC-8) package forms.

## Feature

- Very Low Power Consumption
- Wide Common-Mode And Differential Voltage Ranges
- Low Input Bias And Offset Currents
- Output Short-Circuit Protection
- High Input Impedance
- Internal Frequency Compensation
- High Slew Rate
- High Gain-Bandwidth

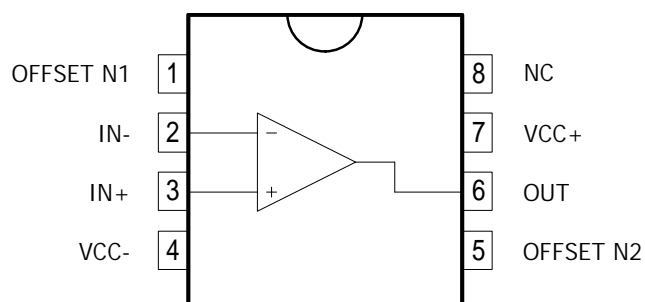
## Applications

- Battery test equipment
- Pro audio mixers
- Single phase online UPS
- Solar energy: string and central inverter
- Three phase UPS
- Motor drives: AC and servo drive control and power stage modules

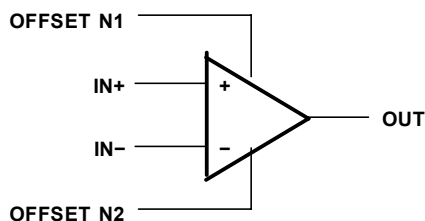
## Ordering Information

Product Model	Package Type	Packing	Packing Qty
TL071CDR	SOP-8(SOIC-8)	Tape	4000Pcs/Reel

## Pins Diagram

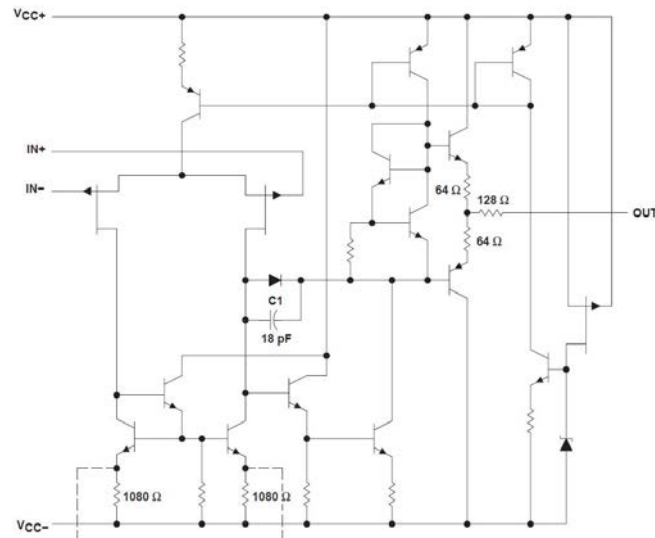


## Symbol





## Internal Diagram



## Absolute Maximum Ratings

Symbol	Description	Extreme Value	Unit
$V_{CC}$	Supply Voltage	$\pm 18$	V
$V_i$	Input Voltage	$\pm 15$	V
$V_{id}$	Differential Input Voltage	$\pm 30$	V
$P_{tot}$	Power Dissipation	680	mW
$T_{oper}$	Operating Temperature Range	-20~85	°C
$T_{stg}$	Storage Temperature Range	-65~+150	°C

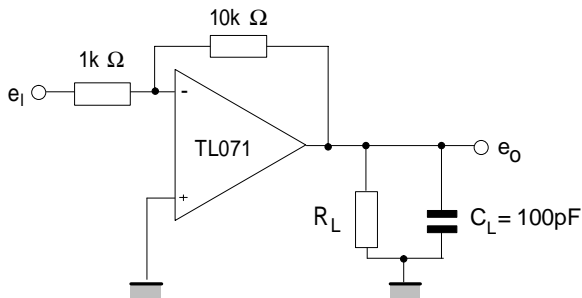
## Electrical Parameter Characteristics

(  $V_{CC}=\pm 15$ ,  $T_{amp}=25^\circ\text{C}$  , Unless otherwise specified )

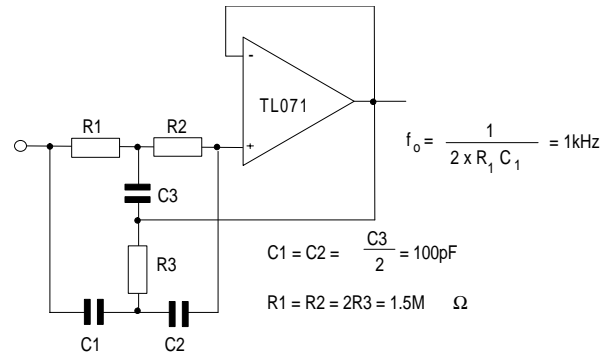
Symbol	Parameter Name	Test Conditions	Parameter			Unit
			Min.	Typ.	Max.	
$V_{IO}$	Input Offset Voltage	$V_o=0\text{V}$		3	10	mV
$I_{IO}$	Input Offset Current	$V_o=0\text{V}$			$\pm 100$	pA
$I_{IB}$	Input Bias Current	$V_o=0\text{V}$			$\pm 200$	nA
$V_{ICM}$	Input Common Mode Voltage Range		$(V_{CC-})+1.5$		$(V_{CC+})-0.5$	V
$V_{OM}$	Maximum Peak Output Voltage Swing	$R_L = 10\text{ k}\Omega$	$\pm 12$	$\pm 13.5$		V
$A_{VD}$	Large-signal differential voltage amplification	$R_L \geq 2\text{ k}\Omega$ , $V_o = \pm 10\text{ V}$	80	95		dB
GB	Gain Bandwidth			3		MHz
CMRR	Common Mode Rejection Ratio	$R_s=50\Omega$	70	85		dB
SVR	Supply Voltage Rejection Ratio	$V_{CC} = \pm 15\text{ V}$ to $\pm 9\text{ V}$ , $V_o=0\text{V}$	80	86		dB
$I_{CC}$	Static Supply Current	$V_{CC} = \pm 15\text{ V}$		$\pm 1.8$	$\pm 2.8$	mA
SR	Slew Rate	$V_i = 10\text{ V}$	8	20		V/us
tr	Rise time	$V_{in}=20\text{mV}$		0.1		us



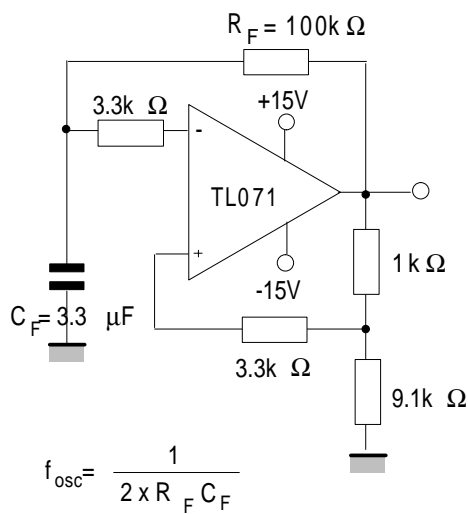
## Typical Application



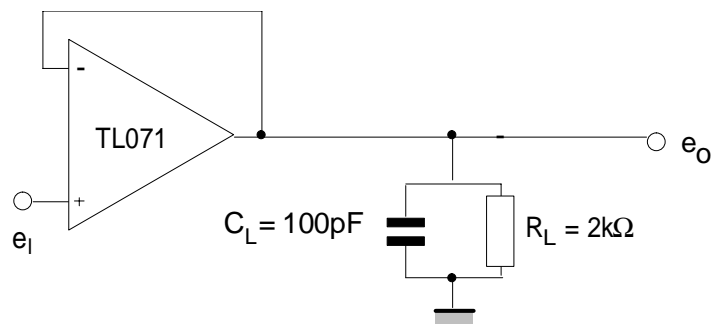
Gain-of-10 inverting amplifier



High Q notch filter



(0.5Hz) Square wave oscillator

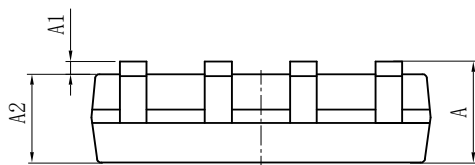
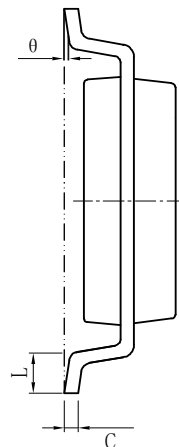
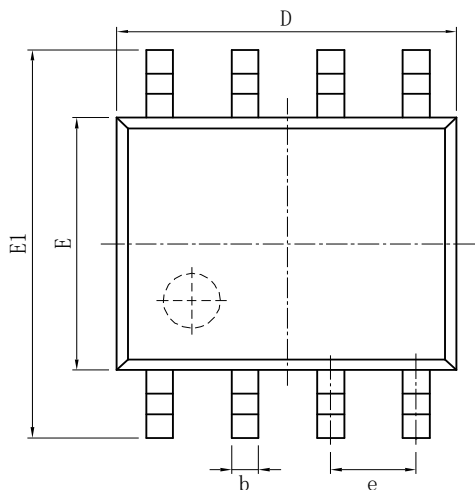


Voltage follower



## Package Information

### SOP-8(SOIC-8)



Symbol	Size	Dimensions In Millimeters		Symbol	Size	Dimensions In Inches	
		Min(mm)	Max(mm)			Min(in)	Max(in)
A		1.350	1.750	A		0.053	0.069
A1		0.100	0.250	A1		0.004	0.010
A2		1.350	1.550	A2		0.053	0.061
b		0.330	0.510	b		0.013	0.020
c		0.170	0.250	c		0.006	0.010
D		4.700	5.100	D		0.185	0.200
E		3.800	4.000	E		0.150	0.157
E1		5.800	6.200	E1		0.228	0.224
e		1.270(BSC)		e		0.050(BSC)	
L		0.400	1.270	L		0.016	0.050
θ		0°	8°	θ		0°	8°



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