

DESCRIPTION

The EKL2018S is a digital echo audio processor IC using CMOS technology. The EKL2018S is equipped with an ADC and DAC, high sampling frequency and an internal memory of 48K. The IC features a VCO circuit in the system clock allowing easy adjustment to the frequency.

The EKL2018S has very low distortion (THD < 0.5%) and noise (No < -90dBV) thereby producing high quality audio output.

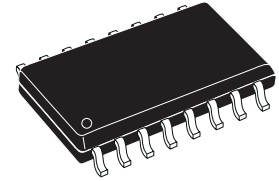
FEATURES

- Low Noise (No < -90dBV)
- Low Distortion (THD < 0.5%)
- Highly Integrated = Low External Component Count
- Auto Reset Feature
- External Adjustable VCO
- Low Idd

APPLICATION

- Communications Equipment
- Karaoke Mixer
- Audio Equipment / Sound Processing Equipment
- Television
- Car Stereo
- CD Player

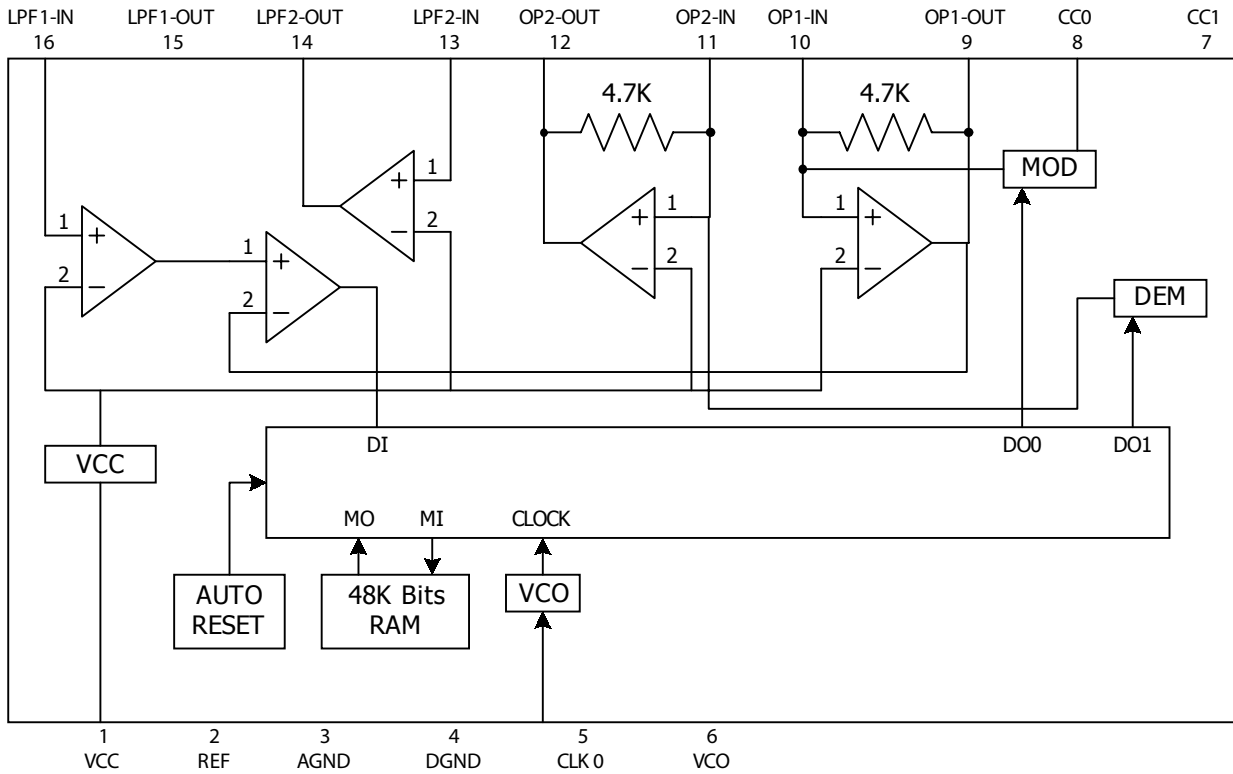
SO16 Wide Package



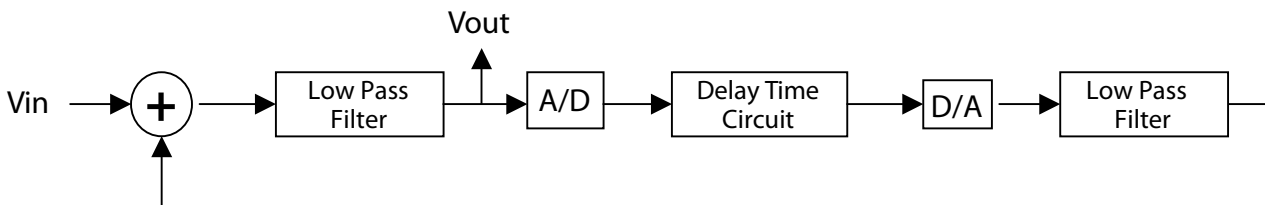
ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Ratings	Units
Vcc	Supply voltage	6.5	V
Icc	Supply current	100	mA
Pd	Power dissipation	1.7	W
Topr	Operating temperature	-20 ~ 75	°C
Tstg	Storage temperature	-25 ~ 125	°C

BLOCK DIAGRAM



ECHO MODE FUNCTION DIAGRAM



PIN CONFIGURATION

VCC	1	16	LPF1-IN
REF	2	15	LPF1-OUT
AGND	3	14	LPF2-OUT
DGND	4	13	LPF2-IN
CLK-O	5	12	OP2-OUT
VCO	6	11	OP2-IN
CC1	7	10	OP1-IN
CC0	8	9	OP1-OUT

PIN DESCRIPTION

Symbol	I/O	Name	No.
Vcc	-	Analog Supply voltage	1
REF	-	Reference (1/2Vcc)	2
AGND	-	Analog GND	3
DGND	-	Digital GND	4
CLK_O	O	clock	5
VCO	I	Shift clock	6
CC1	-	Current control 2	7
CC0	-	Current control 1	8
OP1-OUT	O	OP-AMP1 output	9
OP1-IN	I	OP-AMP1 input	10
OP2-IN	I	OP-AMP2 input	11
OP2-OUT	O	OP-AMP2 output	12
LPF2-IN	I	OP-AMP2 input	13
LPF2-OUT	O	OP-AMP2 output	14
LPF1-OUT	O	Low pass filter1 output	15
LPF1-IN	I	Low pass filter1 input	16

RECOMMENDED OPERATING CONDITIONS

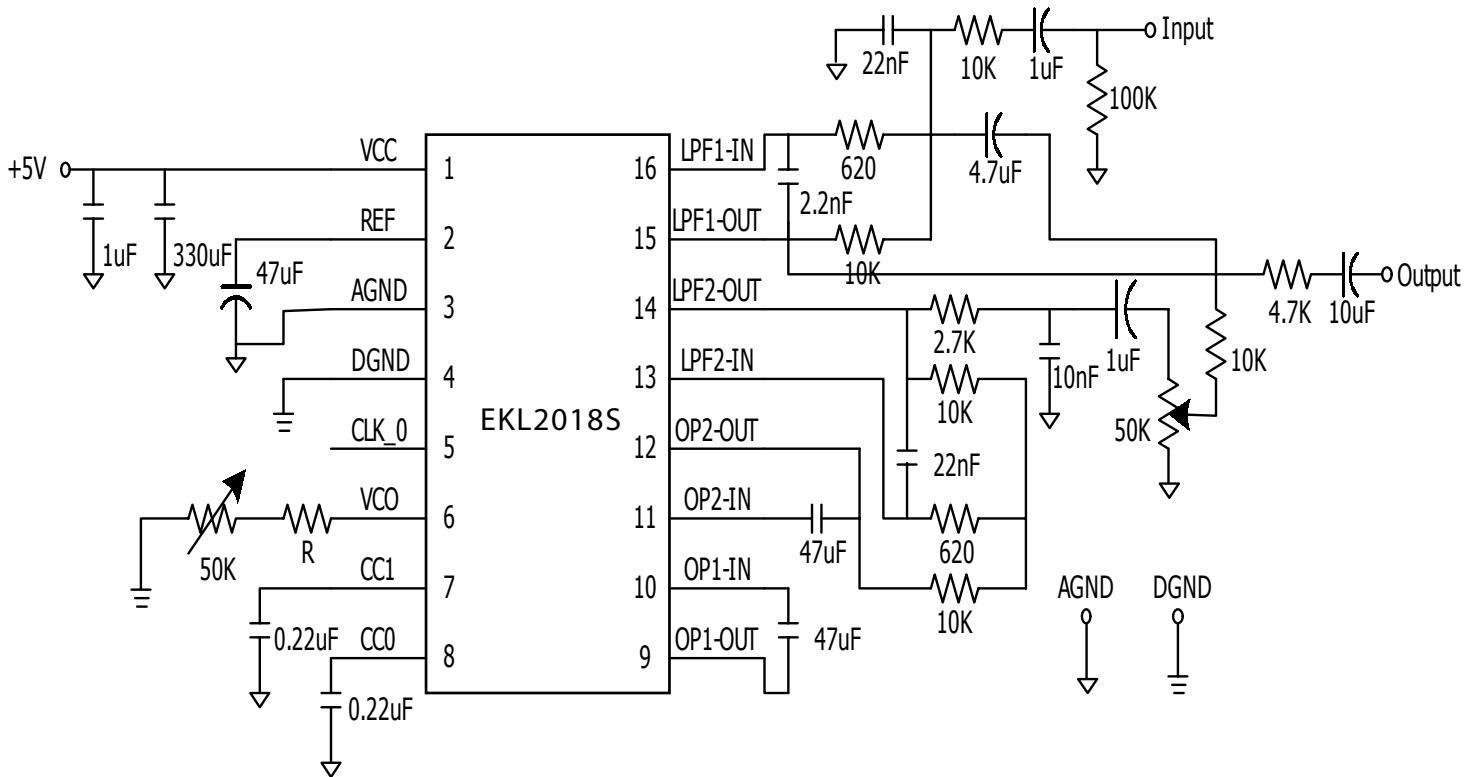
Symbol	Parameter	Limits			Units
		Min	Typ	Max	
Vcc	Supply voltage	4.5	5	5.5	V
fck	Clock frequency		4	5	MHz

ELECTRICAL CHARACTERISTICS

Vcc=5.0V , fin=1KHz , Vi=100mVrms , fck=4MHz , Ta=25°C

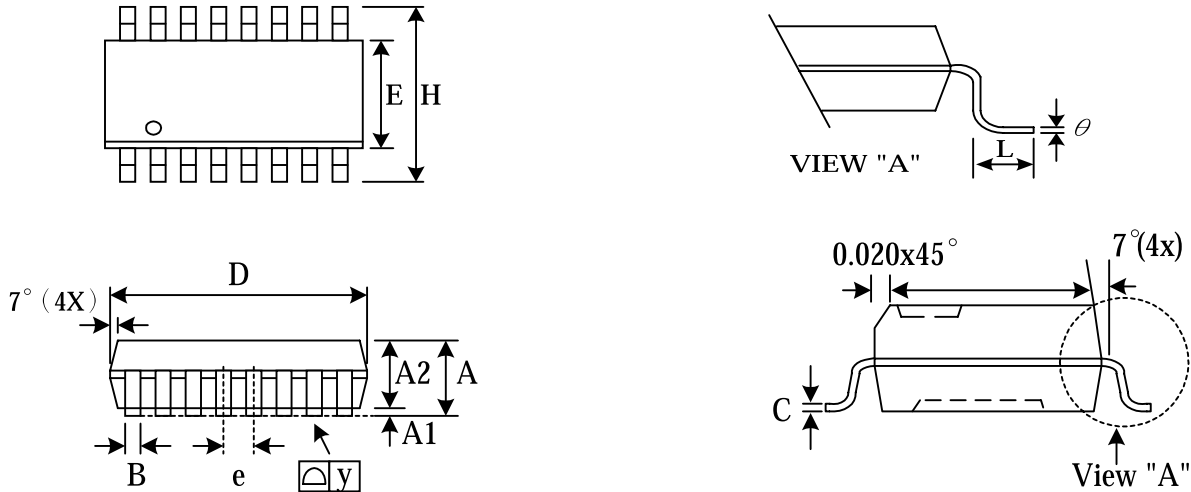
Symbol	Parameter	Test conditions	Min	Typ	Max	Unite
Vcc	Supply voltage		4.5	5.0	5.5	V
Icc	Circuit current	No signal		30	40	mA
Gv	Voltage gain	RL=47Kohms		-0.5	2.5	dB
Vomax	Maximum output voltage	THD=10%	1.5	2	2.8	Vrms
THD	Output distortion	Filter=Audio		0.3	1.0	%
No	Output noise voltage	Filter=A-Weighting		-90	-80	dBV
PSRR	power supply rejection ratio	Vcc=-20dBV(0.1Vrms) f=100Hz		-40	-30	dB

EKL2018S ECHO APPLICATION CIRCUIT EXAMPLE



NOTE: Increasing the value of external resistor (R) increases the delay time range. A resistor value range between 10K ohms and 50K ohms is recommended.

SO16 Wide Mechanical Data and Package Dimensions



Symbol	mm			Inch		
	Min	Ratings	Max	Min	Ratings	Max
A	2.36	2.49	2.64	0.093	0.098	0.104
A1	0.10	-	0.30	0.004	-	0.012
A2	-	2.31	-	-	0.091	-
B	0.33	0.41	0.51	0.13	0.016	0.020
C	0.18	0.23	0.28	0.007	0.009	0.011
D	12.60	10.31	10.49	0.397	0.406	0.413
E	7.39	7.49	7.59	0.291	0.295	0.299
E	-	1.27	-	-	0.050	-
H	10.01	10.31	10.64	0.394	0.406	0.419
L	0.38	0.81	1.27	0.015	0.032	0.050
Y	-	-	0.10	-	-	0.004
θ	0°	-	8°	0°	-	8°