

# 79LXX

# LINEAR INTEGRATED CIRCUIT

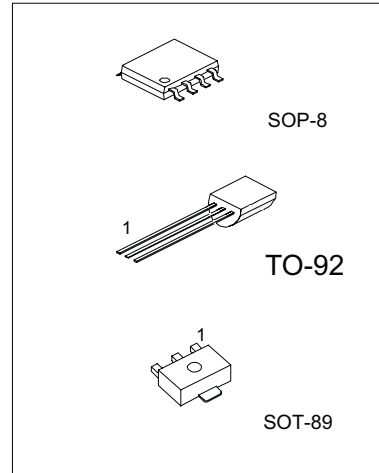
## 3-TERMINAL 0.1A NEGATIVE VOLTAGE REGULATOR

### DESCRIPTION

The Contek79LXX family is monolithic fixed voltage regulator integrated circuit. They are suitable for applications that required supply current up to 100mA.

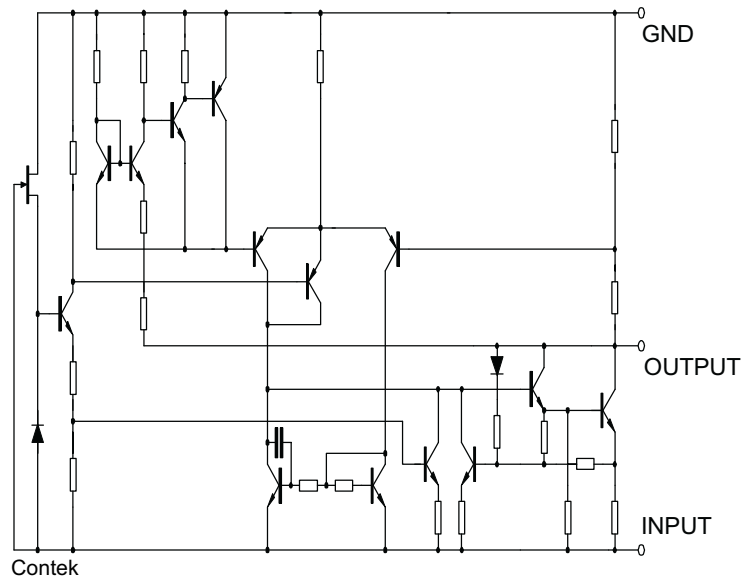
### FEATURES

- \*Output current up to 100mA
- \*Fixed output voltage of -5V, -6V, -8V, -9V, -12V,-15V ,-18V and -24V available
- \*Thermal overload shutdown protection
- \*Short circuit current limiting



TO-92, SOT-89: 1:GND 2:Input 3:Output  
SOP- 8 : 1. Vout ; 2,3,6,7 Vin ; 5. GND;  
4,8 NC

### TEST CIRCUIT



Contek Microelectronics Co.,Ltd.

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## ABSOLUTE MAXIMUM RATINGS ( Operating temperature range applies unless otherwise specified )

PARAMETER	SYMBOL	VALUE	UNIT
Input voltage(for Vo=-5~-9V) (for Vo=-12~-15V) (for Vo=-18~-24V)	V <sub>i</sub>	-30	V
	V <sub>i</sub>	-35	V
	V <sub>i</sub>		
Power Dissipation	P <sub>D</sub>	500	mW
Operating Junction Temperature Range	T <sub>OPR</sub>	-30 ~ +125	C
Storage Temperature Range	T <sub>STG</sub>	-40 ~ +125	C

## Contek79L05 ELECTRICAL CHARACTERISTICS

(T<sub>j</sub>=25 C, C<sub>1</sub>=0.33μF, C<sub>o</sub>=1.0 μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V <sub>o</sub>	V <sub>IN</sub> =-10V, I <sub>o</sub> =40mA	-4.8	-5.0	-5.2	V
Line Regulation	V <sub>o</sub> -V <sub>IN</sub>	V <sub>IN</sub> =-7~-20V, I <sub>o</sub> =40mA		15	150	mV
Load Regulation	V <sub>o</sub> -I <sub>o</sub>	V <sub>IN</sub> =-10V, I <sub>o</sub> =1~100mA		7	60	mV
Quiescent current	I <sub>Q</sub>	V <sub>IN</sub> =-10V, I <sub>o</sub> =40mA		3.5	6.0	mA
Ripple Rejection	RR	V <sub>IN</sub> =-8~-18V, I <sub>o</sub> =40mA, E <sub>in</sub> =1Vp-p, f=120Hz	41	71		dB
Output Noise Voltage	V <sub>NO</sub>	V <sub>IN</sub> =-10V, BW=10Hz~100kHz, I <sub>o</sub> =40mA		120		μV

## Contek79L06 ELECTRICAL CHARACTERISTICS

(T<sub>j</sub>=25 C, C<sub>1</sub>=0.33μF, C<sub>o</sub>=1.0 μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V <sub>o</sub>	V <sub>IN</sub> =-12V, I <sub>o</sub> =40mA	-5.76	-6.0	-5.2	V
Line Regulation	V <sub>o</sub> -V <sub>IN</sub>	V <sub>IN</sub> =-8.5~-20V, I <sub>o</sub> =40mA		15	150	mV
Load Regulation	V <sub>o</sub> -I <sub>o</sub>	V <sub>IN</sub> =-12V, I <sub>o</sub> =1~100mA		7	60	mV
Quiescent current	I <sub>Q</sub>	V <sub>IN</sub> =-12V, I <sub>o</sub> =40mA		3.5	6.0	mA
Ripple Rejection	RR	V <sub>IN</sub> =-9~-19V, I <sub>o</sub> =40mA, E <sub>in</sub> =1Vp-p, f=120Hz	41	71		dB
Output Noise Voltage	V <sub>NO</sub>	V <sub>IN</sub> =-12V, BW=10Hz~100kHz, I <sub>o</sub> =40mA		120		μV

## Contek79L08 ELECTRICAL CHARACTERISTICS

(T<sub>j</sub>=25 C, C<sub>1</sub>=0.33μF, C<sub>o</sub>=1.0 μF, unless otherwise specified)

PARAMETER	SYMBOL	Test conditions	MIN	TYP	MAX	UNIT
Output Voltage	V <sub>o</sub>	V <sub>IN</sub> =-14V, I <sub>o</sub> =40mA	-7.68	-8.0	-8.32	V
Line Regulation	V <sub>o</sub> -V <sub>IN</sub>	V <sub>IN</sub> =-10.5~-23V, I <sub>o</sub> =40mA		24	175	mV
Load Regulation	V <sub>o</sub> -I <sub>o</sub>	V <sub>IN</sub> =-14V, I <sub>o</sub> =1~100mA		10	80	mV
Quiescent current	I <sub>Q</sub>	V <sub>IN</sub> =-14V, I <sub>o</sub> =40mA		3.5	6.0	mA
Ripple Rejection	RR	V <sub>IN</sub> =-11~-21V, I <sub>o</sub> =40mA, E <sub>in</sub> =1Vp-p, f=140Hz	39	68		dB
Output Noise Voltage	V <sub>NO</sub>	V <sub>IN</sub> =-14V, BW=10Hz~100kHz, I <sub>o</sub> =40mA		190		μV



## Contek79L09 ELECTRICAL CHARACTERISTICS

(T<sub>j</sub>=25 °C, C<sub>1</sub>=0.33μF, C<sub>o</sub>=1.0 μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V <sub>o</sub>	V <sub>IN</sub> =-15V, I <sub>o</sub> =40mA	-8.64	-9.0	-9.36	V
Line Regulation	V <sub>o</sub> -V <sub>IN</sub>	V <sub>IN</sub> =-12.5~-24V, I <sub>o</sub> =40mA		27	200	mV
Load Regulation	V <sub>o</sub> -I <sub>o</sub>	V <sub>IN</sub> =-15V, I <sub>o</sub> =1~100mA		12	90	mV
Quiescent current	I <sub>Q</sub>	V <sub>IN</sub> =-15V, I <sub>o</sub> =40mA		3.5	6.0	mA
Ripple Rejection	RR	V <sub>IN</sub> =-12~-22V, I <sub>o</sub> =40mA, E <sub>in</sub> =1Vp-p, f=150Hz	37	64		dB
Output Noise Voltage	V <sub>NO</sub>	V <sub>IN</sub> =-15V, BW=10Hz~100kHz, I <sub>o</sub> =40mA		210		μV

## Contek79L12 ELECTRICAL CHARACTERISTICS

(T<sub>j</sub>=25 °C, C<sub>1</sub>=0.33μF, C<sub>o</sub>=1.0 μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V <sub>o</sub>	V <sub>IN</sub> =-19V, I <sub>o</sub> =40mA	-11.5	-12.0	-12.5	V
Line Regulation	V <sub>o</sub> -V <sub>IN</sub>	V <sub>IN</sub> =-14.5~-27V, I <sub>o</sub> =40mA		36	250	mV
Load Regulation	V <sub>o</sub> -I <sub>o</sub>	V <sub>IN</sub> =-19V, I <sub>o</sub> =1~100mA		16	100	mV
Quiescent current	I <sub>Q</sub>	V <sub>IN</sub> =-19V, I <sub>o</sub> =40mA		3.5	6.0	mA
Ripple Rejection	RR	V <sub>IN</sub> =-15~-25V, I <sub>o</sub> =40mA, E <sub>in</sub> =1Vp-p, f=190Hz	37	64		dB
Output Noise Voltage	V <sub>NO</sub>	V <sub>IN</sub> =-19V, BW=10Hz~100kHz, I <sub>o</sub> =40mA		210		μV

## Contek79L15 ELECTRICAL CHARACTERISTICS

(T<sub>j</sub>=25 °C, C<sub>1</sub>=0.33μF, C<sub>o</sub>=1.0 μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V <sub>o</sub>	V <sub>IN</sub> =-23V, I <sub>o</sub> =40mA	-14.4	-15.0	-15.6	V
Line Regulation	V <sub>o</sub> -V <sub>IN</sub>	V <sub>IN</sub> =-17.5~-30V, I <sub>o</sub> =40mA		45	300	mV
Load Regulation	V <sub>o</sub> -I <sub>o</sub>	V <sub>IN</sub> =-23V, I <sub>o</sub> =1~100mA		20	150	mV
Quiescent current	I <sub>Q</sub>	V <sub>IN</sub> =-23V, I <sub>o</sub> =40mA		3.5	6.0	mA
Ripple Rejection	RR	V <sub>IN</sub> =-18.5~-28.5V, I <sub>o</sub> =40mA, E <sub>in</sub> =1Vp-p, f=230Hz	34	63		dB
Output Noise Voltage	V <sub>NO</sub>	V <sub>IN</sub> =-23V, BW=10Hz~100kHz, I <sub>o</sub> =40mA		340		μV

## Contek79L18 ELECTRICAL CHARACTERISTICS

(T<sub>j</sub>=25 °C, C<sub>1</sub>=0.33μF, C<sub>o</sub>=1.0 μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V <sub>o</sub>	V <sub>IN</sub> =-27V, I <sub>o</sub> =40mA	-17.3	-18.0	-18.7	V
Line Regulation	V <sub>o</sub> -V <sub>IN</sub>	V <sub>IN</sub> =-20.5~-33V, I <sub>o</sub> =40mA		54	300	mV
Load Regulation	V <sub>o</sub> -I <sub>o</sub>	V <sub>IN</sub> =-27V, I <sub>o</sub> =1~100mA		23	170	mV
Quiescent current	I <sub>Q</sub>	V <sub>IN</sub> =-27V, I <sub>o</sub> =40mA		3.5	6.0	mA
Ripple Rejection	RR	V <sub>IN</sub> =-23~-33V, I <sub>o</sub> =40mA, E <sub>in</sub> =1Vp-p, f=270Hz	33	60		dB
Output Noise Voltage	V <sub>NO</sub>	V <sub>IN</sub> =-27V, BW=10Hz~100kHz, I <sub>o</sub> =40mA		410		μV



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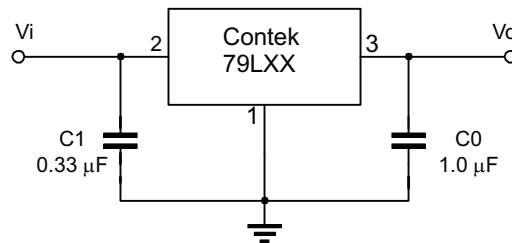
# LINEAR INTEGRATED CIRCUIT

## Contek79L24 ELECTRICAL CHARACTERISTICS

(T<sub>j</sub>=25 °C, C<sub>1</sub>=0.33μF, C<sub>o</sub>=1.0 μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V <sub>o</sub>	V <sub>IN</sub> =-33V, I <sub>o</sub> =40mA	-23.0	-24.0	-25.0	V
Line Regulation	V <sub>o</sub> -V <sub>IN</sub>	V <sub>IN</sub> =-27~-38V, I <sub>o</sub> =40mA		72	350	mV
Load Regulation	V <sub>o</sub> -I <sub>o</sub>	V <sub>IN</sub> =-33V, I <sub>o</sub> =1~100mA		30	200	mV
Quiescent current	I <sub>q</sub>	V <sub>IN</sub> =-33V, I <sub>o</sub> =40mA		3.5	6.0	mA
Ripple Rejection	RR	V <sub>IN</sub> =-29~-35V, I <sub>o</sub> =40mA, E <sub>in</sub> =1Vp-p, f=330Hz	31	55		dB
Output Noise Voltage	V <sub>NO</sub>	V <sub>IN</sub> =-33V, BW=10Hz~100kHz, I <sub>o</sub> =40mA		550		μV

## APPLICATION CIRCUIT



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## TYPICAL PERFORMANCE CHARACTERISTICS

Fig.1 Power dissipation vs. ambient temperature

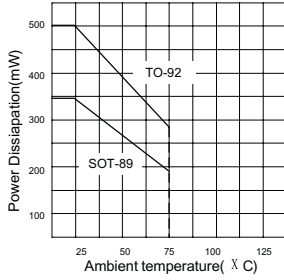


Fig.2 Input Voltage vs. Output Voltage

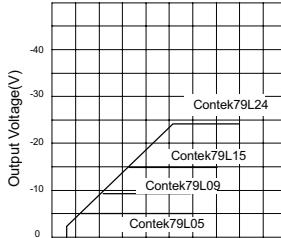


Fig.3 Load Characteristics (Tj=25 °C)

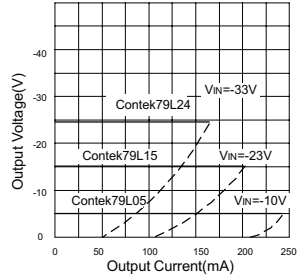


Fig.4 Short Circuit Current (Tj=25 °C)

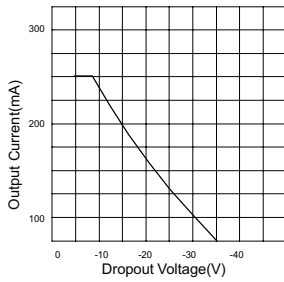


Fig.5 Output Voltage vs. Junction temperature

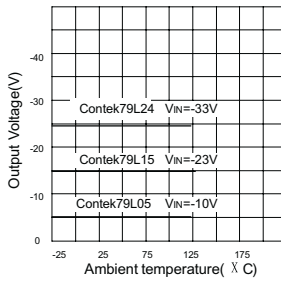


Fig.6 Output Voltage vs. ambient temperature

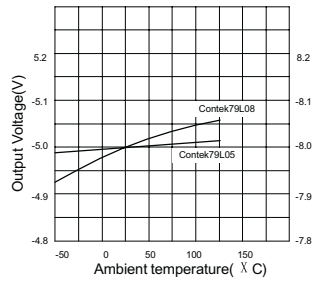


Fig.7 Contek79L05 Dropout Characteristics (Tj=25 °C)

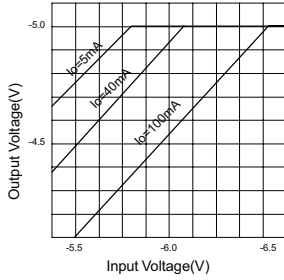


Fig.8 Contek79L08 Dropout Characteristics (Tj=25 °C)

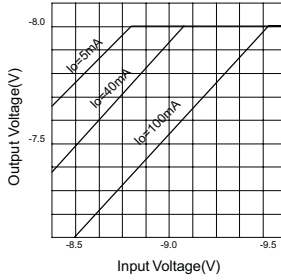
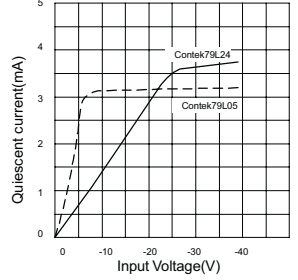


Fig.9 Current vs. Input Voltage (Io=0mA, Tj=25 °C)



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