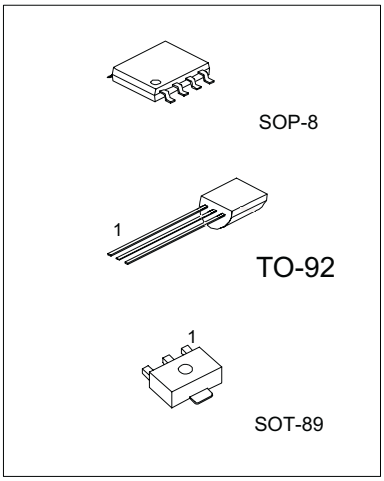
79LXX LINEAR INTEGRATED CIRCUIT

3-TERMINAL 0.1A NEGATIVE VOLTAGE REGULATOR



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

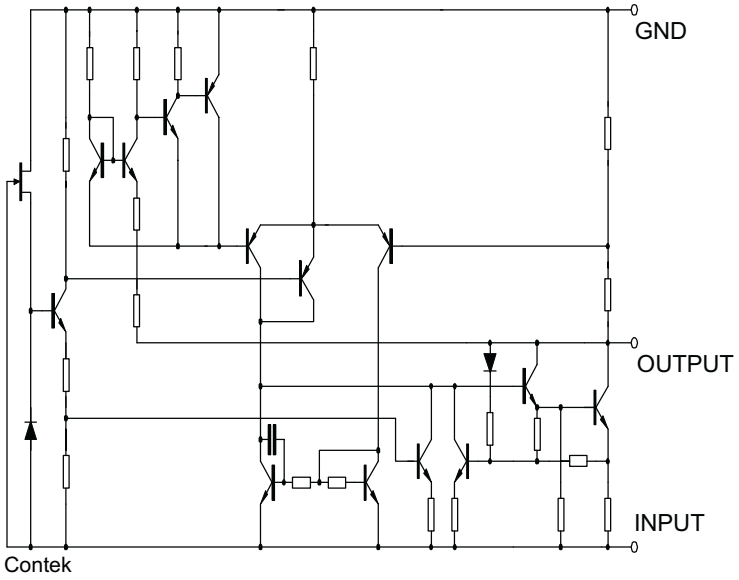
DESCRIPTION

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

TEST CIRCUIT



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_I V_I V_I	-30 -35	V V
Power Dissipation	P_D	500	mW
Operating Junction Temperature Range	T_{OPR}	-30 ~ +125	C
Storage Temperature Range	T_{STG}	-40 ~ +125	C

Contek79L05 ELECTRICAL CHARACTERISTICS

(Tj=25 C,C1=0.33μF,Co=1.0 μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	Vo	V_{IN}=-10V,Io=40mA	-4.8	-5.0	-5.2	V
Line Regulation	Vo-V_{IN}	V_{IN}=-7~-20V,Io=40mA		15	150	mV
Load Regulation	Vo-Io	V_{IN}=-10V,Io=1~100mA		7	60	mV
Quiescent current	I_Q	V_{IN}=-10V,Io=40mA		3.5	6.0	mA
Ripple Rejection	RR	V_{IN}=-8~-18V, Io=40mA, e_{in}=1Vp-p ,f=120Hz	41	71		dB
Output Noise Voltage	V_{NO}	V_{IN}=-10V, BW=10Hz~100kH,Io=40mA		120		μV

Contek79L06 ELECTRICAL CHARACTERISTICS

(Tj=25 C,C1=0.33μF,Co=1.0 μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	Vo	V_{IN}=-12V,Io=40mA	-5.76	-6.0	-5.2	V
Line Regulation	Vo-V_{IN}	V_{IN}=-8.5~-20V,Io=40mA		15	150	mV
Load Regulation	Vo-Io	V_{IN}=-12V,Io=1~100mA		7	60	mV
Quiescent current	I_Q	V_{IN}=-12V,Io=40mA		3.5	6.0	mA
Ripple Rejection	RR	V_{IN}=-9~ -19V, Io=40mA,e_{in}=1Vp-p ,f=120Hz	41	71		dB
Output Noise Voltage	V_{NO}	V_{IN}=-12V, BW=10Hz~100kH,Io=40mA		120		μV

Contek79L08 ELECTRICAL CHARACTERISTICS

(Tj=25 C,C1=0.33μF,Co=1.0 μF, unless otherwise specified)

PARAMETER	SYMBOL	Test conditions	MIN	TYP	MAX	UNIT
Output Voltage	Vo	V_{IN}=-14V,Io=40mA	-7.68	-8.0	-8.32	V
Line Regulation	Vo-V_{IN}	V_{IN}=-10.5~-23V,Io=40mA		24	175	mV
Load Regulation	Vo-Io	V_{IN}=-14V,Io=1~100mA		10	80	mV
Quiescent current	I_Q	V_{IN}=-14V,Io=40mA		3.5	6.0	mA
Ripple Rejection	RR	V_{IN}=-11~ -21V, Io=40mA,e_{in}=1Vp-p ,f=140Hz	39	68		dB
Output Noise Voltage	V_{NO}	V_{IN}=-14V, BW=10Hz~100kH,Io=40mA		190		μV

Contek79L09 ELECTRICAL CHARACTERISTICS

(Tj=25 C,C1=0.33μF,Co=1.0 μF,unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	Vo	VIN=-15V,Io=40mA	-8.64	-9.0	-9.36	V
Line Regulation	Vo-VIN	VIN=-12.5~-24V,Io=40mA		27	200	mV
Load Regulation	Vo-Io	VIN=-15V,Io=1~100mA		12	90	mV
Quiescent current	IQ	VIN=-15V,Io=40mA		3.5	6.0	mA
Ripple Rejection	RR	VIN=-12~ -22V, Io=40mA,ein=1Vp-p ,f=150Hz	37	64		dB
Output Noise Voltage	VNO	VIN=-15V, BW=10Hz~100kH,Io=40mA		210		μV

Contek79L12 ELECTRICAL CHARACTERISTICS

(Tj=25 C,C1=0.33μF,Co=1.0 μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	Vo	VIN=-19V,Io=40mA	-11.5	-12.0	-12.5	V
Line Regulation	Vo-VIN	VIN=-14.5~-27V,Io=40mA		36	250	mV
Load Regulation	Vo-Io	VIN=-19V,Io=1~100mA		16	100	mV
Quiescent current	IQ	VIN=-19V,Io=40mA		3.5	6.0	mA
Ripple Rejection	RR	VIN=-15~ -25V, Io=40mA,ein=1Vp-p ,f=190Hz	37	64		dB
Output Noise Voltage	VNO	VIN=-19V, BW=10Hz~100kH,Io=40mA		210		μV

Contek79L15 ELECTRICAL CHARACTERISTICS

(Tj=25 C,C1=0.33μF,Co=1.0 μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	Vo	VIN=-23V,Io=40mA	-14.4	-15.0	-15.6	V
Line Regulation	Vo-VIN	VIN=-17.5~-30V,Io=40mA		45	300	mV
Load Regulation	Vo-Io	VIN=-23V,Io=1~100mA		20	150	mV
Quiescent current	IQ	VIN=-23V,Io=40mA		3.5	6.0	mA
Ripple Rejection	RR	VIN=-18.5~ -28.5V, Io=40mA,ein=1Vp-p ,f=230Hz	34	63		dB
Output Noise Voltage	VNO	VIN=-23V, BW=10Hz~100kH,Io=40mA		340		μV

Contek79L18 ELECTRICAL CHARACTERISTICS

(Tj=25 C,C1=0.33μF,Co=1.0 μF, unless otherwise specified)

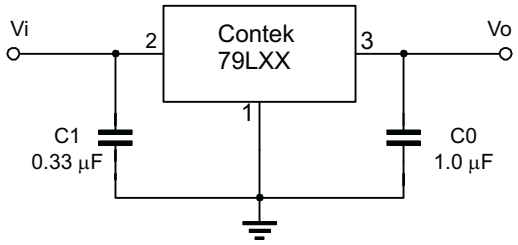
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	Vo	VIN=-27V,Io=40mA	-17.3	-18.0	-18.7	V
Line Regulation	Vo-VIN	VIN=-20.5~-33V,Io=40mA		54	300	mV
Load Regulation	Vo-Io	VIN=-27V,Io=1~100mA		23	170	mV
Quiescent current	IQ	VIN=-27V,Io=40mA		3.5	6.0	mA
Ripple Rejection	RR	VIN=-23~ -33V, Io=40mA,ein=1Vp-p ,f=270Hz	33	60		dB
Output Noise Voltage	VNO	VIN=-27V, BW=10Hz~100kH,Io=40mA		410		μV

Contek79L24 ELECTRICAL CHARACTERISTICS

(Tj=25 C,C1=0.33μF,Co=1.0 μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	Vo	V_{IN}=-33V,Io=40mA	-23.0	-24.0	-25.0	V
Line Regulation	Vo-V_{IN}	V_{IN}=-27~-38V,Io=40mA		72	350	mV
Load Regulation	Vo-Io	V_{IN}=-33V,Io=1~100mA		30	200	mV
Quiescent current	I_Q	V_{IN}=-33V,Io=40mA		3.5	6.0	mA
Ripple Rejection	RR	V_{IN}=-29~ -35V, Io=40mA,e_{in}=1Vp-p ,f=330Hz	31	55		dB
Output Noise Voltage	V_{NO}	V_{IN}=-33V, BW=10Hz~100kH,Io=40mA		550		μV

APPLICATION CIRCUIT



TYPICAL PERFORMANCE CHARACTERISTICS

Fig.1 Power dissipation vs. ambient temperature

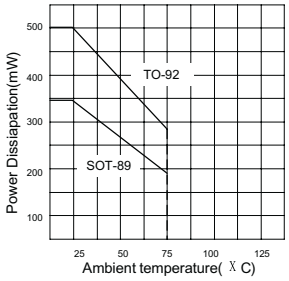


Fig.2 Input Voltage vs. Output Voltage

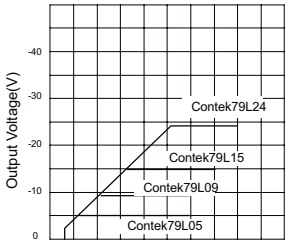


Fig.3 Load Characteristics (Tj=25 ℃)

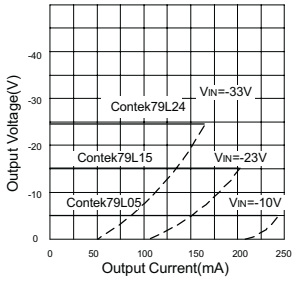


Fig.4 Short Circuit Current (Tj=25 ℃)

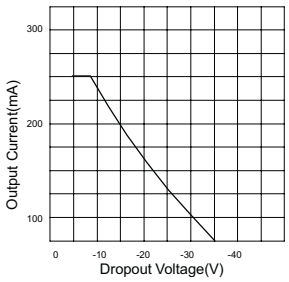


Fig.5 Output Voltage vs. Junction temperature

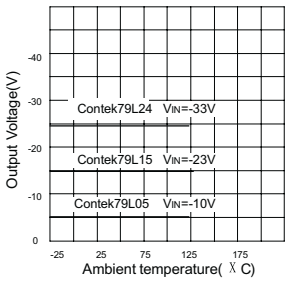


Fig.6 Output Voltage vs. ambient temperature

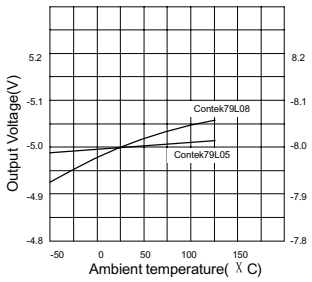


Fig.7 Contek79L05 Dropout Characteristics (Tj=25 ℃)

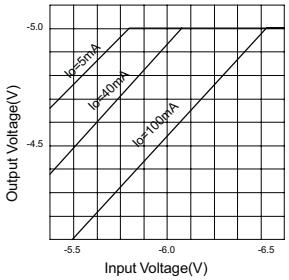


Fig.8 Contek79L08 Dropout Characteristics (Tj=25 ℃)

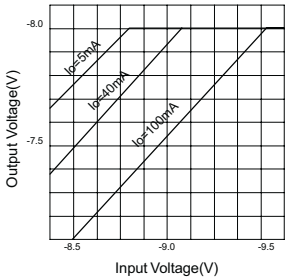


Fig.9 Current vs. Input Voltage(Io=0mA,Tj=25 ℃)