

UTC 79LXX LINEAR INTEGRATED CIRCUIT

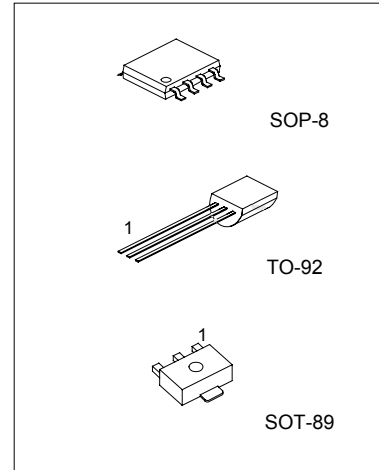
3-TERMINAL 0.1A NEGATIVE VOLTAGE REGULATOR

DESCRIPTION

The UTC 79LXX 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



SOP-8 : 1. Vout ; 2,3,6,7 Vin ; 5. GND; 4,8 NC

TO-92 : 1: GND 2: Input 3: Output

SOT-89: 1: GND 2: Input 3: Output

*Pb-free plating product number: 79LXXL

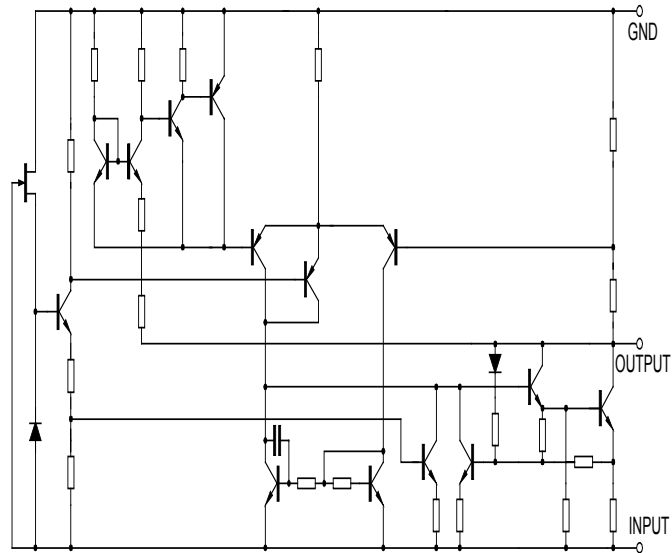
ORDERING INFORMATION

Order Number		Package	Packing
Normal	Lead free		
79Lxx-S08-R	79LxxL-S08-R	SOP-8	Tape Reel
79Lxx-S08-T	79LxxL-S08-T	SOP-8	Tube
79Lxx-AB3-R	79LxxL-AB3-R	SOT-89	Tape Reel
79Lxx-T92-B	79LxxL-T92-B	TO-92	Tape Box
79Lxx-T92-K	79LxxL-T92-K	TO-92	Bulk

Note:1. xx: Output Voltage, refer to Marking Information.

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TEST CIRCUIT



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

PARAMETER	SYMBOL	VALUE	UNIT
Input voltage(for $V_o = -5 \sim -9V$) (for $V_o = -12 \sim -15V$) (for $V_o = -18 \sim -24V$)	V_i	-30	V
	V_i	-35	V
	V_i		
Power Dissipation	P_D	350 (SOT-89) 300 (SOP-8) 625 (TO-92)	mW
Operating Junction Temperature Range	T_{OPR}	-30 ~ +125	°C
Storage Temperature Range	T_{STG}	-40 ~ +125	°C

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UTC79L05 ELECTRICAL CHARACTERISTICS

(T_J=25°C, C₁=0.33μF, C_o=0.1μF, unless otherwise specified)

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

UTC79L06 ELECTRICAL CHARACTERISTICS

(T_J=25°C, C₁=0.33μF, C_o=0.1μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V _o	V _{IN} =-12V, I _o =40mA	-5.76	-6.0	-6.24	V
Line Regulation	V _o -V _{IN}	V _{IN} =-8.5~-20V, I _o =40mA		15	150	mV
Load Regulation	V _o -I _o	V _{IN} =-12V, I _o =1~100mA		7	60	mV
Quiescent current	I _q	V _{IN} =-12V, I _o =40mA		3.5	6.0	mA
Ripple Rejection	RR	V _{IN} =-9~-19V, I _o =40mA, E _{in} =1Vp-p, f=120Hz	41	71		dB
Output Noise Voltage	V _{NO}	V _{IN} =-12V, BW=10Hz~100kHz, I _o =40mA		120		μV

UTC79L08 ELECTRICAL CHARACTERISTICS

(T_J=25°C, C₁=0.33μF, C_o=0.1μF, unless otherwise specified)

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

UTC79L09 ELECTRICAL CHARACTERISTICS

(T_J=25°C, C₁=0.33μF, C_o=0.1μF, unless otherwise specified)

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

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UTC79L12 ELECTRICAL CHARACTERISTICS

(T_j=25°C, C₁=0.33μF, C_o=0.1μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V _o	V _{IN} =-19V, I _o =40mA	-11.52	-12.0	-12.48	V
Line Regulation	V _o -V _{IN}	V _{IN} =-14.5~-27V, I _o =40mA		36	250	mV
Load Regulation	V _o -I _o	V _{IN} =-19V, I _o =1~100mA		16	100	mV
Quiescent current	I _q	V _{IN} =-19V, I _o =40mA		3.5	6.0	mA
Ripple Rejection	RR	V _{IN} =-15~-25V, I _o =40mA, E _{in} =1Vp-p, f=190Hz	37	64		dB
Output Noise Voltage	V _{NO}	V _{IN} =-19V, BW=10Hz~100kHz, I _o =40mA		210		μV

UTC79L15 ELECTRICAL CHARACTERISTICS

(T_j=25°C, C₁=0.33μF, C_o=0.1μF, unless otherwise specified)

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

UTC79L18 ELECTRICAL CHARACTERISTICS

(T_j=25°C, C₁=0.33μF, C_o=0.1μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V _o	V _{IN} =-27V, I _o =40mA	-17.28	-18.0	-18.72	V
Line Regulation	V _o -V _{IN}	V _{IN} =-20.5~-33V, I _o =40mA		54	300	mV
Load Regulation	V _o -I _o	V _{IN} =-27V, I _o =1~100mA		23	170	mV
Quiescent current	I _q	V _{IN} =-27V, I _o =40mA		3.5	6.0	mA
Ripple Rejection	RR	V _{IN} =-23~-33V, I _o =40mA, E _{in} =1Vp-p, f=270Hz	33	60		dB
Output Noise Voltage	V _{NO}	V _{IN} =-27V, BW=10Hz~100kHz, I _o =40mA		410		μV

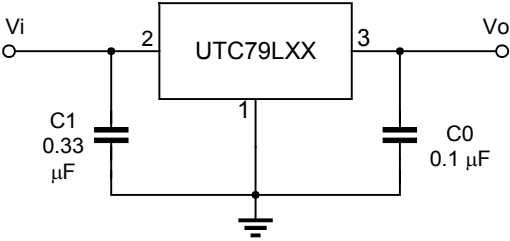
UTC79L24 ELECTRICAL CHARACTERISTICS

(T_j=25°C, C₁=0.33μF, C_o=0.1μF, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V _o	V _{IN} =-33V, I _o =40mA	-23.04	-24.0	-24.96	V
Line Regulation	V _o -V _{IN}	V _{IN} =-27~-38V, I _o =40mA		72	350	mV
Load Regulation	V _o -I _o	V _{IN} =-33V, I _o =1~100mA		30	200	mV
Quiescent current	I _q	V _{IN} =-33V, I _o =40mA		3.5	6.0	mA
Ripple Rejection	RR	V _{IN} =-29~-35V, I _o =40mA, E _{in} =1Vp-p, f=330Hz	31	55		dB
Output Noise Voltage	V _{NO}	V _{IN} =-33V, BW=10Hz~100kHz, I _o =40mA		550		μV

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APPLICATION CIRCUIT



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TYPICAL PERFORMANCE CHARACTERISTICS

Fig.1 Power dissipation vs. ambient temperature

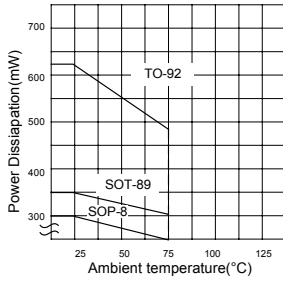


Fig.2 Input Voltage vs. Output Voltage

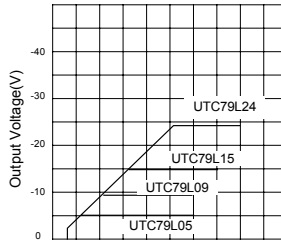


Fig.3 Load Characteristics (Tj=25°C)

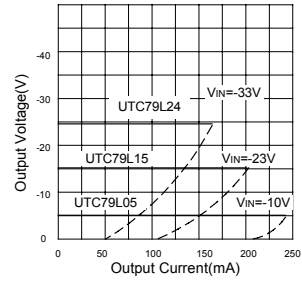


Fig.4 Short Circuit Current (Tj=25°C)

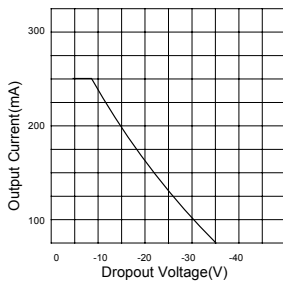


Fig.5 Output Voltage vs. Junction temperature

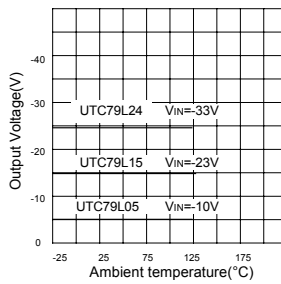


Fig.6 Output Voltage vs. ambient temperature

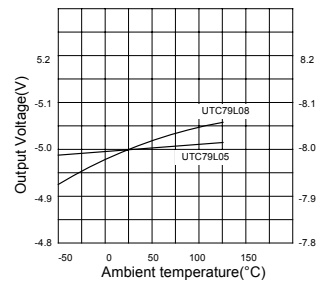


Fig.7 UTC79L05 Dropout Characteristics (Tj=25°C)

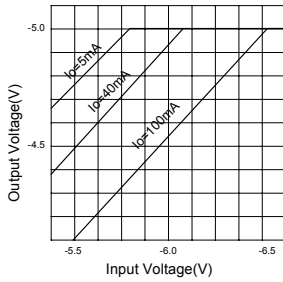


Fig.8 UTC79L08 Dropout Characteristics (Tj=25°C)

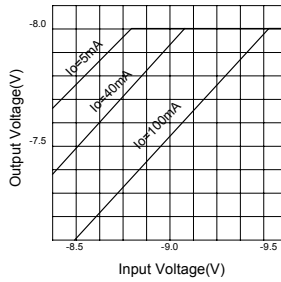
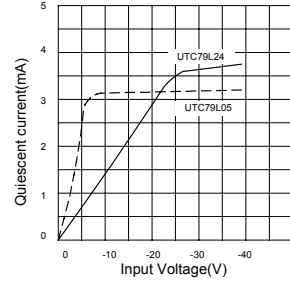


Fig.9 Current vs. Input Voltage (Io=0mA, Tj=25°C)



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