



# 79LXX

## LINEAR INTEGRATED CIRCUIT

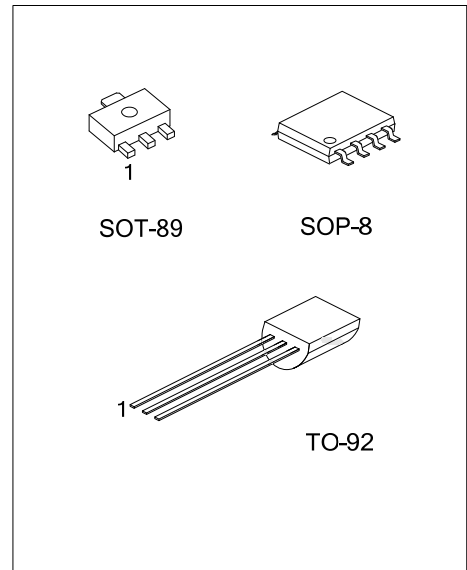
### 3-TERMINAL 0.1A NEGATIVE VOLTAGE REGULATOR

#### 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, -10V, -12V, -15V, -18V and -24V available.
- \* Thermal overload shutdown protection.
- \* Short circuit current limiting.



#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
79LXXL-AB3-R	79LXXG-AB3-R	SOT-89	G	I	O	-	-	-	-	-	Tape Reel
79LXXL-S08-R	79LXXG-S08-R	SOP-8	O	I	I	N	G	I	I	N	Tape Reel
79LXXL-T92-B	79LXXG-T92-B	TO-92	G	I	O	-	-	-	-	-	Tape Box
79LXXL-T92-K	79LXXG-T92-K	TO-92	G	I	O	-	-	-	-	-	Bulk

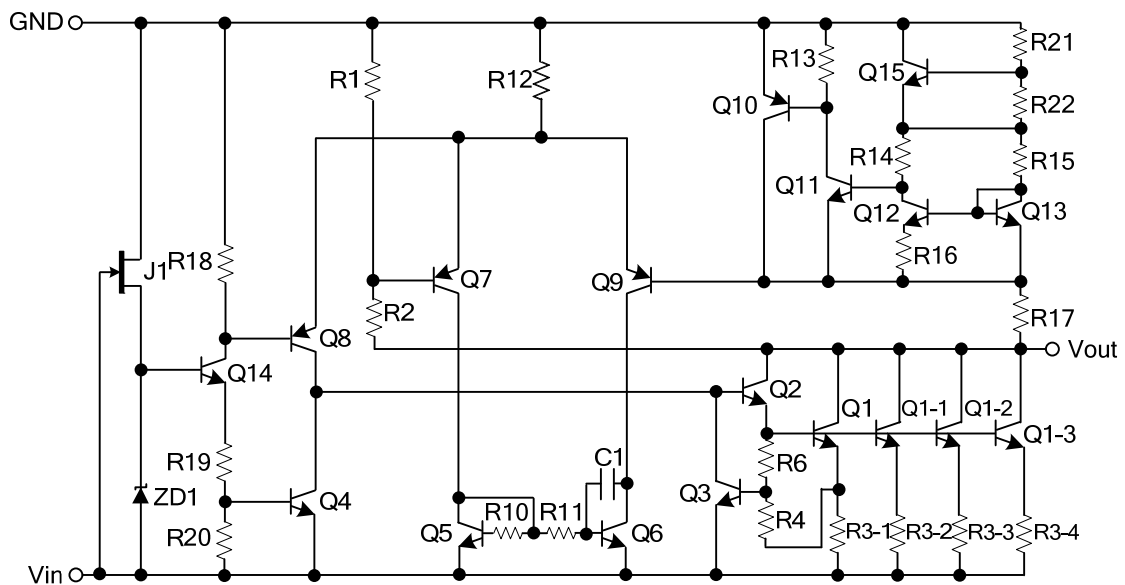
Notes: 1. XX: Output Voltage, refer to Marking Information  
 2. Note: Pin Assignment: I:V<sub>IN</sub> O:V<sub>OUT</sub> G:GND

<p>79LXXG-AB3-R</p> <ul style="list-style-type: none"> <li>(1) Packing Type</li> <li>(2) Package Type</li> <li>(3) Green Package</li> <li>(4) Output Voltage Code</li> </ul>	<ul style="list-style-type: none"> <li>(1) B: Tape Box, K: Bulk, R: Tape Reel</li> <li>(2) AB3: SOT-89, S08: SOP-8, T92: TO-92</li> <li>(3) G: Halogen Free and Lead Free, L: Lead Free</li> <li>(4) XX: refer to Marking Information</li> </ul>
--	--

### MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
SOT-89		
TO-92	05:-5.0V 06:-6.0V 08:-8.0V 09:-9.0V 10:-10V 12:-12V 15:-15V 18:-18V 24:-24V	
SOP-8		

### BLOCK DIAGRAM



### ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	VALUE	UNIT
Input Voltage	$V_{OUT} = -5 \sim -9V$	$V_{IN}$	-30	V
	$V_{OUT} = -12 \sim -15V$		-35	V
	$V_{OUT} = -18 \sim -24V$		-35	V
Power Dissipation	SOT-89	$P_D$	350	mW
	SOP-8		300	mW
	TO-92		625	mW
Operating Temperature		$T_{OPR}$	-40 ~ +85	°C
Storage Temperature		$T_{STG}$	-40 ~ +125	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

### ■ ELECTRICAL CHARACTERISTICS

**79L05**( $T_J=25^\circ\text{C}$ ,  $C_1=0.33\mu\text{F}$ ,  $C_{OUT}=1\mu\text{F}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=-10V$ , $I_{OUT}=40\text{mA}$	-4.8	-5.0	-5.2	V
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$V_{IN}=-7 \sim -20V$ , $I_{OUT}=40\text{mA}$		15	150	mV
Load Regulation	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$	$V_{IN}=-10V$ , $I_{OUT}=1 \sim 100\text{mA}$		7	60	mV
Quiescent current	$I_Q$	$V_{IN}=-10V$ , $I_{OUT}=40\text{mA}$		3.5	6.0	mA
Ripple Rejection	RR	$V_{IN}=-8 \sim -18V$ , $I_{OUT}=40\text{mA}$ , $e_{IN}=1V_{P-P}$ , $f=120\text{Hz}$	41	71		dB
Output Voltage Noise	eN	$V_{IN}=-10V$ , $I_{OUT}=40\text{mA}$ $BW=10\text{Hz} \sim 100\text{kHz}$		120		$\mu\text{V}$

**79L06**( $T_J=25^\circ\text{C}$ ,  $C_1=0.33\mu\text{F}$ ,  $C_{OUT}=1\mu\text{F}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=-12V$ , $I_{OUT}=40\text{mA}$	-5.76	-6.0	-6.24	V
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$V_{IN}=-8.5 \sim -20V$ , $I_{OUT}=40\text{mA}$		15	150	mV
Load Regulation	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$	$V_{IN}=-12V$ , $I_{OUT}=1 \sim 100\text{mA}$		7	60	mV
Quiescent current	$I_Q$	$V_{IN}=-12V$ , $I_{OUT}=40\text{mA}$		3.5	6.0	mA
Ripple Rejection	RR	$V_{IN}=-9 \sim -19V$ , $I_{OUT}=40\text{mA}$ $e_{IN}=1V_{P-P}$ , $f=120\text{Hz}$	41	71		dB
Output Voltage Noise	eN	$V_{IN}=-12V$ , $I_{OUT}=40\text{mA}$ $BW=10\text{Hz} \sim 100\text{kHz}$		120		$\mu\text{V}$

**79L08**( $T_J=25^\circ\text{C}$ ,  $C_1=0.33\mu\text{F}$ ,  $C_{OUT}=1\mu\text{F}$ , unless otherwise specified)

PARAMETER	SYMBOL	Test conditions	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=-14V$ , $I_{OUT}=40\text{mA}$	-7.68	-8.0	-8.32	V
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$V_{IN}=-10.5 \sim -23V$ , $I_{OUT}=40\text{mA}$		24	175	mV
Load Regulation	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$	$V_{IN}=-14V$ , $I_{OUT}=1 \sim 100\text{mA}$		10	80	mV
Quiescent current	$I_Q$	$V_{IN}=-14V$ , $I_{OUT}=40\text{mA}$		3.5	6.0	mA
Ripple Rejection	RR	$V_{IN}=-11 \sim -21V$ , $I_{OUT}=40\text{mA}$ $e_{IN}=1V_{P-P}$ , $f=140\text{Hz}$	39	68		dB
Output Voltage Noise	eN	$V_{IN}=-14V$ , $I_{OUT}=40\text{mA}$ $BW=10\text{Hz} \sim 100\text{kHz}$		190		$\mu\text{V}$

### ■ ELECTRICAL CHARACTERISTICS(Cont.)

79L09( $T_J=25^\circ\text{C}$ ,  $C_1=0.33\mu\text{F}$ ,  $C_{OUT}=1\mu\text{F}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=-15\text{V}$ , $I_{OUT}=40\text{mA}$	-8.64	-9.0	-9.36	V
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$V_{IN}=-12.5\sim-24\text{V}$ , $I_{OUT}=40\text{mA}$		27	200	mV
Load Regulation	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$	$V_{IN}=-15\text{V}$ , $I_{OUT}=1\sim 100\text{mA}$		12	90	mV
Quiescent current	$I_Q$	$V_{IN}=-15\text{V}$ , $I_{OUT}=40\text{mA}$		3.5	6.0	mA
Ripple Rejection	RR	$V_{IN}=-12\sim-22\text{V}$ , $I_{OUT}=40\text{mA}$ $e_{IN}=1\text{V}_{P-P}$ , $f=150\text{Hz}$	37	64		dB
Output Voltage Noise	eN	$V_{IN}=-15\text{V}$ , $I_{OUT}=40\text{mA}$ $BW=10\text{Hz}\sim 100\text{kHz}$		210		$\mu\text{V}$

79L10( $T_J=25^\circ\text{C}$ ,  $C_1=0.33\mu\text{F}$ ,  $C_{OUT}=1\mu\text{F}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=-16\text{V}$ , $I_{OUT}=40\text{mA}$	-9.6	-10	-10.4	V
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$V_{IN}=-13\sim-24\text{V}$ , $I_{OUT}=40\text{mA}$		30	220	mV
Load Regulation	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$	$V_{IN}=-16\text{V}$ , $I_{OUT}=1\sim 100\text{mA}$		15	95	mV
Quiescent current	$I_Q$	$V_{IN}=-16\text{V}$ , $I_{OUT}=40\text{mA}$		3.5	6.0	mA
Ripple Rejection	RR	$V_{IN}=-13\sim-23\text{V}$ , $I_{OUT}=40\text{mA}$ $e_{IN}=1\text{V}_{P-P}$ , $f=150\text{Hz}$	37	64		dB
Output Voltage Noise	eN	$V_{IN}=-16\text{V}$ , $I_{OUT}=40\text{mA}$ $BW=10\text{Hz}\sim 100\text{kHz}$		210		$\mu\text{V}$

79L12( $T_J=25^\circ\text{C}$ ,  $C_1=0.33\mu\text{F}$ ,  $C_{OUT}=1\mu\text{F}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=-19\text{V}$ , $I_{OUT}=40\text{mA}$	-11.52	-12.0	-12.48	V
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$V_{IN}=-14.5\sim-27\text{V}$ , $I_{OUT}=40\text{mA}$		36	250	mV
Load Regulation	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$	$V_{IN}=-19\text{V}$ , $I_{OUT}=1\sim 100\text{mA}$		16	100	mV
Quiescent current	$I_Q$	$V_{IN}=-19\text{V}$ , $I_{OUT}=40\text{mA}$		3.5	6.0	mA
Ripple Rejection	RR	$V_{IN}=-15\sim-25\text{V}$ , $I_{OUT}=40\text{mA}$ $e_{IN}=1\text{V}_{P-P}$ , $f=190\text{Hz}$	37	64		dB
Output Voltage Noise	eN	$V_{IN}=-19\text{V}$ , $I_{OUT}=40\text{mA}$ $BW=10\text{Hz}\sim 100\text{kHz}$		210		$\mu\text{V}$

79L15( $T_J=25^\circ\text{C}$ ,  $C_1=0.33\mu\text{F}$ ,  $C_{OUT}=1\mu\text{F}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=-23\text{V}$ , $I_{OUT}=40\text{mA}$	-14.4	-15.0	-15.6	V
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$V_{IN}=-17.5\sim-30\text{V}$ , $I_{OUT}=40\text{mA}$		45	300	mV
Load Regulation	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$	$V_{IN}=-23\text{V}$ , $I_{OUT}=1\sim 100\text{mA}$		20	150	mV
Quiescent current	$I_Q$	$V_{IN}=-23\text{V}$ , $I_{OUT}=40\text{mA}$		3.5	6.0	mA
Ripple Rejection	RR	$V_{IN}=-18.5\sim-28.5\text{V}$ , $I_{OUT}=40\text{mA}$ $e_{IN}=1\text{V}_{P-P}$ , $f=230\text{Hz}$	34	63		dB
Output Voltage Noise	eN	$V_{IN}=-23\text{V}$ , $I_{OUT}=40\text{mA}$ $BW=10\text{Hz}\sim 100\text{kHz}$		340		$\mu\text{V}$

### ■ ELECTRICAL CHARACTERISTICS(Cont.)

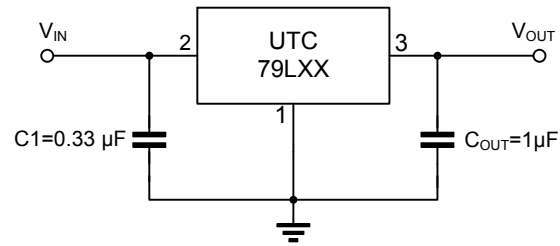
**79L18**( $T_J=25^\circ\text{C}$ ,  $C_1=0.33\mu\text{F}$ ,  $C_{OUT}=1\mu\text{F}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=-27\text{V}$ , $I_{OUT}=40\text{mA}$	-17.28	-18.0	-18.72	V
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$V_{IN}=-20.5\sim-33\text{V}$ , $I_{OUT}=40\text{mA}$		54	300	mV
Load Regulation	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$	$V_{IN}=-27\text{V}$ , $I_{OUT}=1\sim 100\text{mA}$		23	170	mV
Quiescent current	$I_Q$	$V_{IN}=-27\text{V}$ , $I_{OUT}=40\text{mA}$		3.5	6.0	mA
Ripple Rejection	RR	$V_{IN}=-23\sim-33\text{V}$ , $I_{OUT}=40\text{mA}$ $e_{IN}=1\text{V}_{P-P}$ , $f=270\text{Hz}$	33	60		dB
Output Voltage Noise	eN	$V_{IN}=-27\text{V}$ , $I_{OUT}=40\text{mA}$ $BW=10\text{Hz}\sim 100\text{kHz}$		410		$\mu\text{V}$

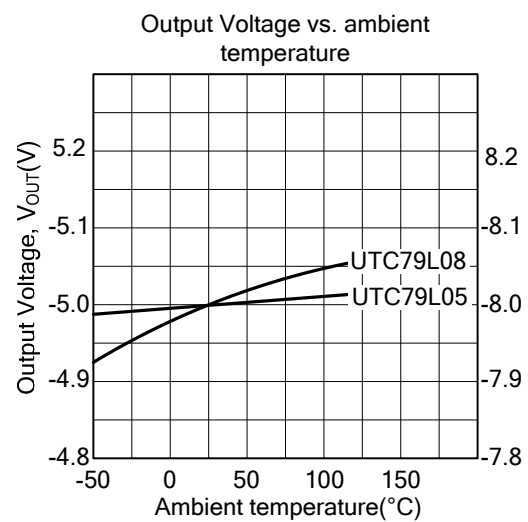
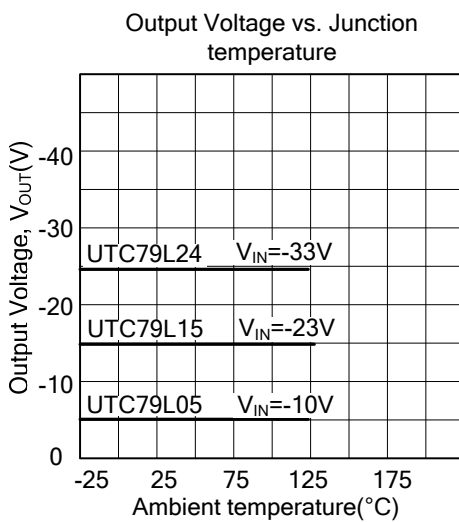
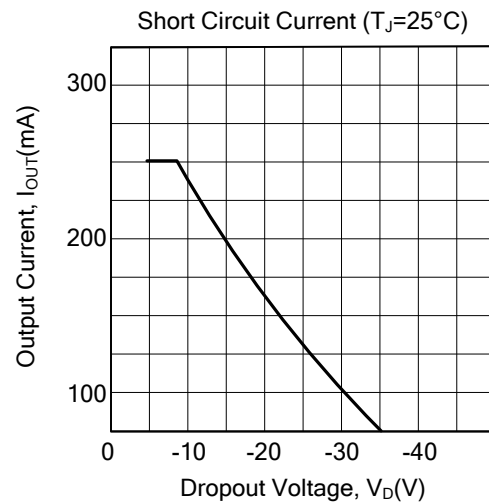
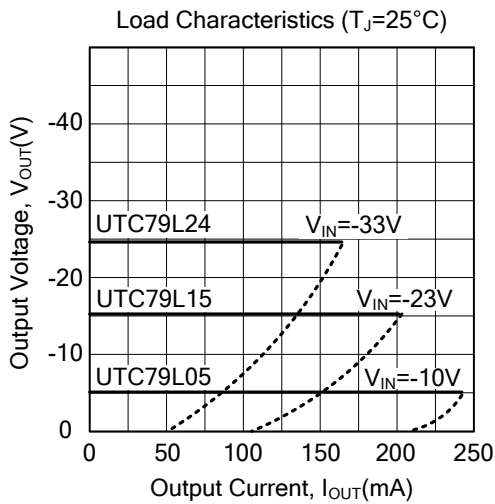
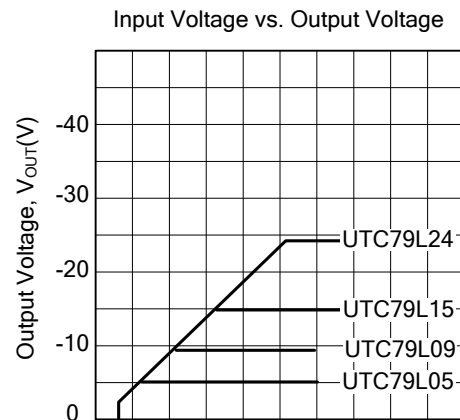
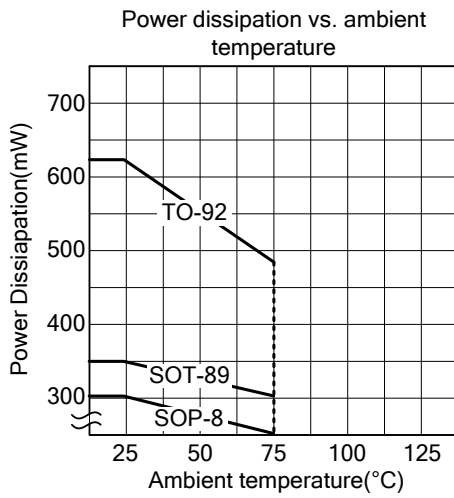
**79L24**( $T_J=25^\circ\text{C}$ ,  $C_1=0.33\mu\text{F}$ ,  $C_{OUT}=1\mu\text{F}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	$V_{IN}=-33\text{V}$ , $I_{OUT}=40\text{mA}$	-23.04	-24.0	-24.96	V
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$V_{IN}=-27\sim-38\text{V}$ , $I_{O}=40\text{mA}$		72	350	mV
Load Regulation	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$	$V_{IN}=-33\text{V}$ , $I_{OUT}=1\sim 100\text{mA}$		30	200	mV
Quiescent current	$I_Q$	$V_{IN}=-33\text{V}$ , $I_{OUT}=40\text{mA}$		3.5	6.0	mA
Ripple Rejection	RR	$V_{IN}=-29\sim-35\text{V}$ , $I_{OUT}=40\text{mA}$ $e_{IN}=1\text{V}_{P-P}$ , $f=330\text{Hz}$	31	55		dB
Output Voltage Noise	eN	$V_{IN}=-33\text{V}$ , $I_{OUT}=40\text{mA}$ $BW=10\text{Hz}\sim 100\text{kHz}$		550		$\mu\text{V}$

## ■ APPLICATION CIRCUIT

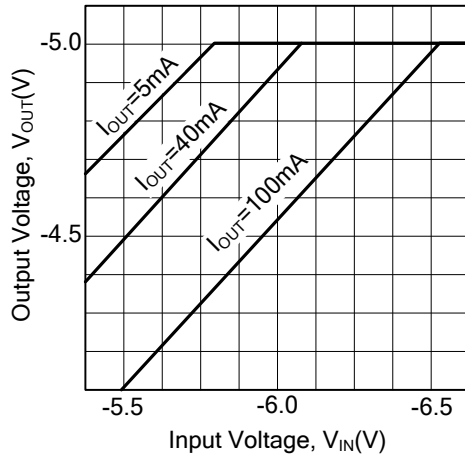


## ■ TYPICAL CHARACTERISTICS

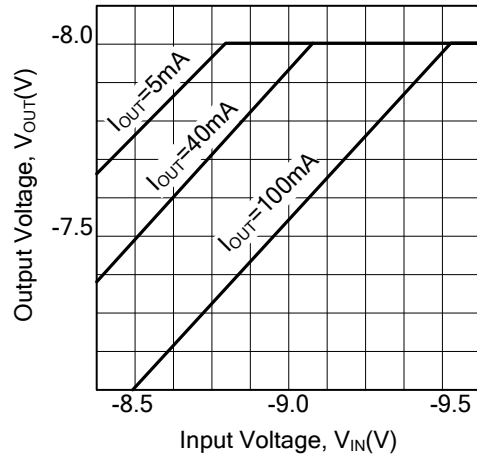


## ■ TYPICAL CHARACTERISTICS(Cont.)

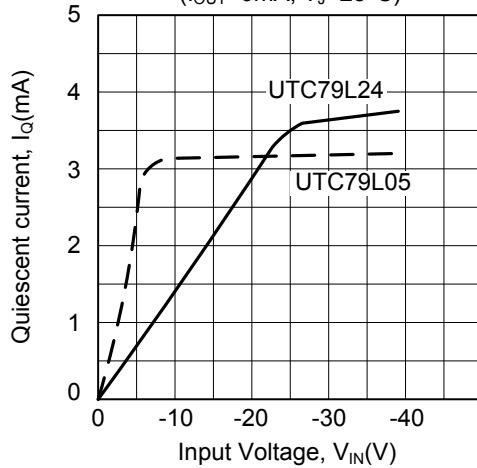
UTC79L05 Dropout Characteristics  
( $T_J=25^\circ\text{C}$ )



UTC79L08 Dropout Characteristics  
( $T_J=25^\circ\text{C}$ )



Current vs. Input Voltage  
( $I_{OUT}=0\text{mA}$ ,  $T_J=25^\circ\text{C}$ )



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.