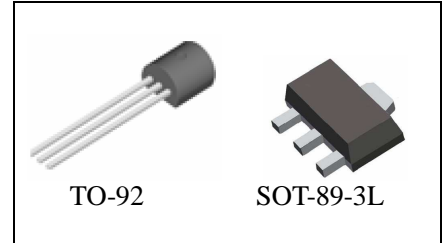


General Description

The W79Lxx family is monolithic fixed voltage regulator integrated circuit. They are suitable for applications that required supply current up to 100mA.

The W79LXX series is available in TO-92 and SOT-89-3L package.



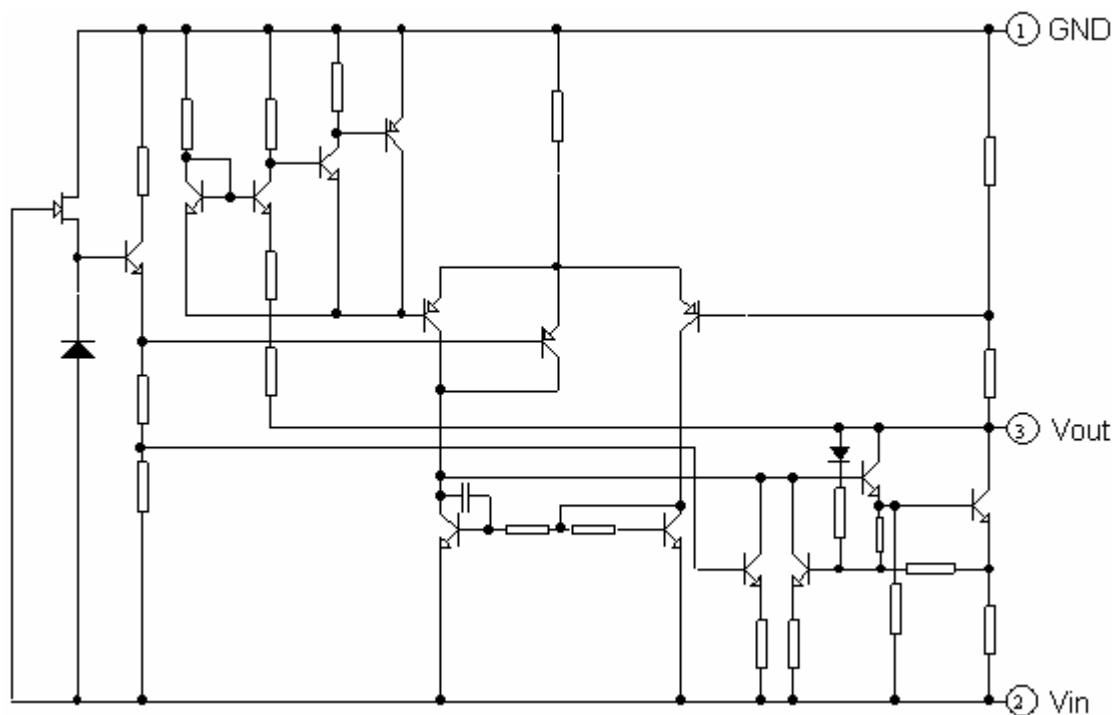
Features

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

Applications

- Linear Regulator Source
- Controller

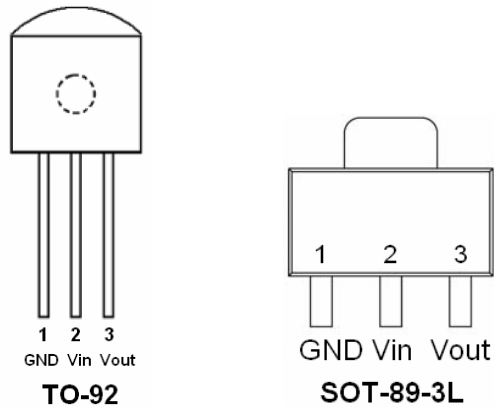
Functional Block Diagram



3-Terminals 100mA Negative Voltage Regulator

HS79LXX

Pin Configuration



Pin Description

Pin Number	Pin Name	Function Description
1	GND	Ground
2	Vin	Input pin
3	Vout	Output pin

Absolute Maximum Ratings (Ta=25°C)

Parameter Name	Symbol	Value	Unit
Input voltage	Vin	Vo=-5V~-9V	V
		Vo=-12V~-15V	
Power Dissipation	PD	TO-92	mW
		SOT-89-3L	
Operating Junction Temperature Range	Topr	-40~85	°C
Storage Temperature	Tstg	-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.

3-Terminals 100mA Negative Voltage Regulator
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W79L05 Electrical Characteristics

(unless otherwise specified: T_j=25°C, C_i=0.33μF, C_o=1.0μF)

Parameter Name	Test conditions	Symbol	Min	Typ	Max	Unit
Output Voltage	V _{in} =-10V, I _o =40mA	V _o	-4.8	-5.0	-5.2	V
Line Regulation	V _{in} =-7V~-20V, I _o =40mA	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$		15	150	mV
Load Regulation	V _{in} =-10V, I _o =1mA~100mA	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$		7	60	mV
Quiescent Current	V _{in} =-10V, I _o =40mA	I _Q		3.5	6.0	mA
Ripple Rejection	V _{in} =-8V~-18V, I _o =40mA, e _{in} =1V _{p-p} , f=120Hz	RR	41	71		dB
Output Noise Voltage	V _{in} =-10V, I _o =40mA, BW=10Hz~100kHz,	V _{NO}		120		μV

W79L06 Electrical Characteristics

(unless otherwise specified: T_j=25°C, C_i=0.33μF, C_o=1.0μF)

Parameter Name	Test conditions	Symbol	Min	Typ	Max	Unit
Output Voltage	V _{in} =-12V, I _o =40mA	V _o	-5.76	-6.0	-6.2	V
Line Regulation	V _{in} =-8.5V~-20V, I _o =40mA	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$		15	150	mV
Load Regulation	V _{in} =-12V, I _o =1mA~100mA	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$		7	60	mV
Quiescent Current	V _{in} =-12V, I _o =40mA	I _Q		3.5	6.0	mA
Ripple Rejection	V _{in} =-9V~-19V, I _o =40mA, e _{in} =1V _{p-p} , f=120Hz	RR	41	71		dB
Output Noise Voltage	V _{in} =-12V, I _o =40mA, BW=10Hz~100kHz,	V _{NO}		120		μV

3-Terminals 100mA Negative Voltage Regulator
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W79L08 Electrical Characteristics

(unless otherwise specified: T_j=25°C, C_i=0.33μF, C_o=1.0μF)

Parameter Name	Test conditions	Symbol	Min	Typ	Max	Unit
Output Voltage	V _{in} =-14V, I _o =40mA	V _o	-7.68	-8.0	-8.32	V
Line Regulation	V _{in} =-10.5V~-23V, I _o =40mA	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$		24	175	mV
Load Regulation	V _{in} =-14V, I _o =1mA~100mA	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$		10	80	mV
Quiescent Current	V _{in} =-14V, I _o =40mA	I _Q		3.5	6.0	mA
Ripple Rejection	V _{in} =-11V~-21V, I _o =40mA, e _{in} =1V _{p-p} , f=120Hz	RR	39	68		dB
Output Noise Voltage	V _{in} =-14V, I _o =40mA, BW=10Hz~100kHz,	V _{NO}		190		μV

W79L09 Electrical Characteristics

(unless otherwise specified: T_j=25°C, C_i=0.33μF, C_o=1.0μF)

Parameter Name	Test conditions	Symbol	Min	Typ	Max	Unit
Output Voltage	V _{in} =-15V, I _o =40mA	V _o	-8.64	-9.0	-9.36	V
Line Regulation	V _{in} =-12.5V~-24V, I _o =40mA	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$		27	200	mV
Load Regulation	V _{in} =-15V, I _o =1mA~100mA	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$		12	90	mV
Quiescent Current	V _{in} =-15V, I _o =40mA	I _Q		3.5	6.0	mA
Ripple Rejection	V _{in} =-12V~-22V, I _o =40mA, e _{in} =1V _{p-p} , f=120Hz	RR	37	64		dB
Output Noise Voltage	V _{in} =-15V, I _o =40mA, BW=10Hz~100kHz,	V _{NO}		210		μV

3-Terminals 100mA Negative Voltage Regulator
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W79L12 Electrical Characteristics

(unless otherwise specified: T_j=25°C, C_i=0.33μF, C_o=1.0μF)

Parameter Name	Test conditions	Symbol	Min	Typ	Max	Unit
Output Voltage	V _{in} =-19V, I _o =40mA	V _o	-11.5	-12	-12.5	V
Line Regulation	V _{in} =-14.57V~-27V, I _o =40mA	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$		36	250	mV
Load Regulation	V _{in} =-19V, I _o =1mA~100mA	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$		16	100	mV
Quiescent Current	V _{in} =-19V, I _o =40mA	I _Q		3.5	6.0	mA
Ripple Rejection	V _{in} =-15V~-25V, I _o =40mA, e _{in} =1Vp-p, f=120Hz	RR	37	64		dB
Output Noise Voltage	V _{in} =-19V, I _o =40mA, BW=10Hz~100kHz,	V _{NO}		210		μV

W79L15 Electrical Characteristics

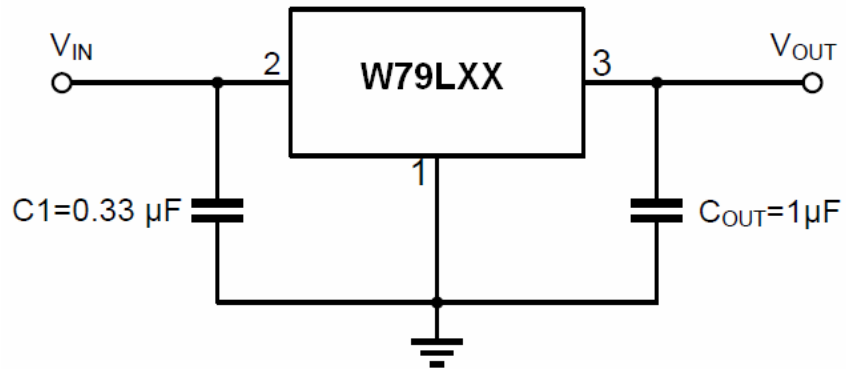
(unless otherwise specified: T_j=25°C, C_i=0.33μF, C_o=1.0μF)

Parameter Name	Test conditions	Symbol	Min	Typ	Max	Unit
Output Voltage	V _{in} =-23V, I _o =40mA	V _o	-14.4	-15	-15.6	V
Line Regulation	V _{in} =-17.5V~-30V, I _o =40mA	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$		45	300	mV
Load Regulation	V _{in} =-23V, I _o =1mA~100mA	$\frac{\Delta V_{OUT}}{\Delta I_{OUT} \times V_{OUT}}$		20	150	mV
Quiescent Current	V _{in} =-23V, I _o =40mA	I _Q		3.5	6.0	mA
Ripple Rejection	V _{in} =-18.5V~-28.5V, I _o =40mA, e _{in} =1Vp-p, f=120Hz	RR	34	63		dB
Output Noise Voltage	V _{in} =-23V, I _o =40mA, BW=10Hz~100kHz,	V _{NO}		340		μV

Typical Application

3-Terminals 100mA Negative Voltage Regulator

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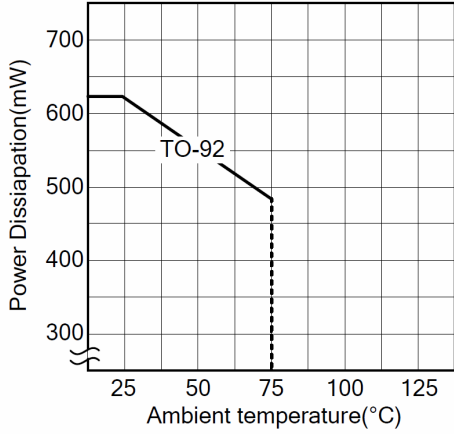


CHARACTERISTICS CURVES

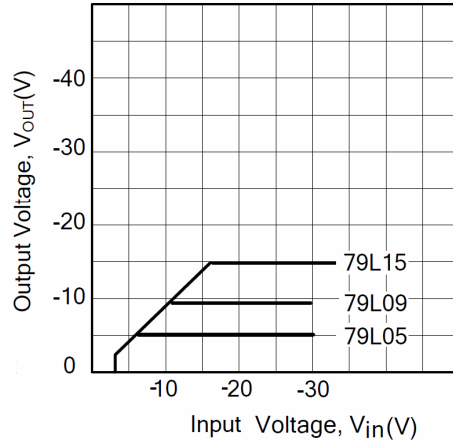
3-Terminals 100mA Negative Voltage Regulator

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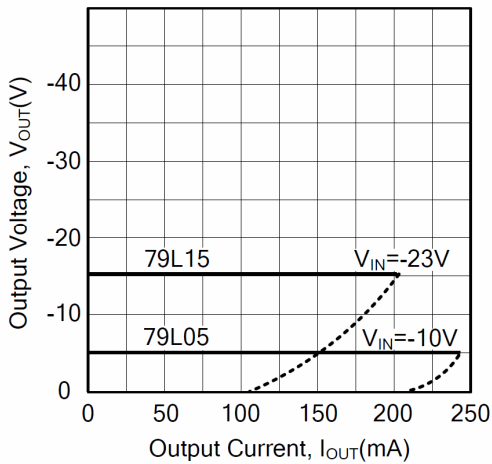
Power dissipation vs. ambient temperature



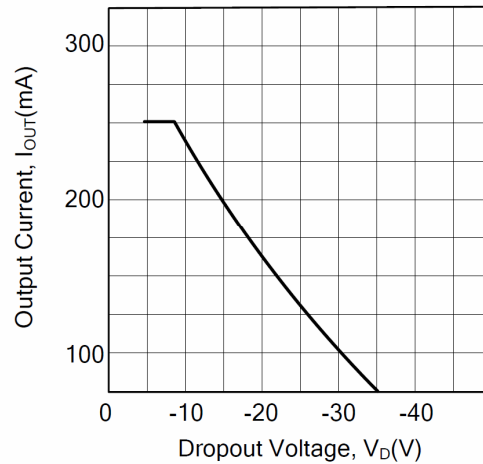
Input Voltage vs. Output Voltage



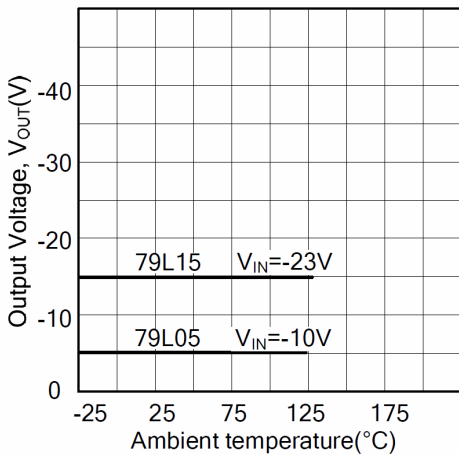
Load Characteristics ($T_J=25^\circ\text{C}$)



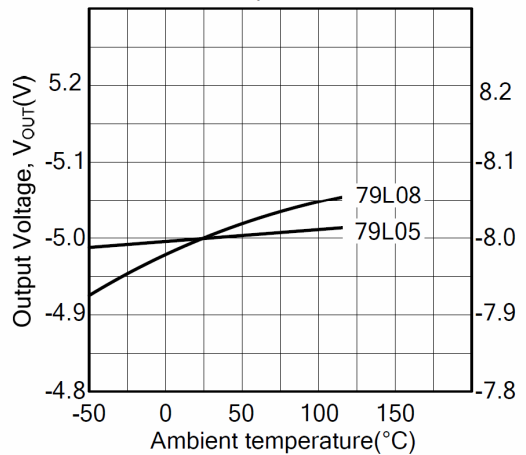
Short Circuit Current ($T_J=25^\circ\text{C}$)



Output Voltage vs. Junction temperature



Output Voltage vs. ambient temperature

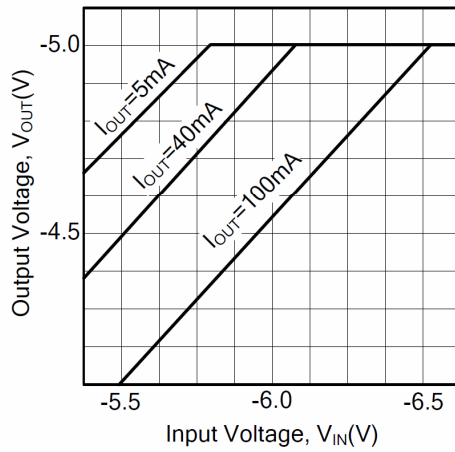


3-Terminals 100mA Negative Voltage Regulator

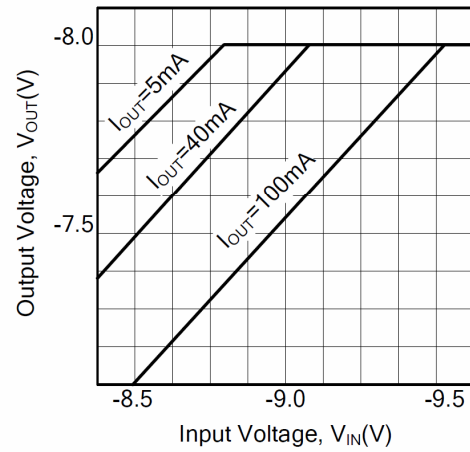
HS79LXX

CHARACTERISTICS CURVES (Cont.)

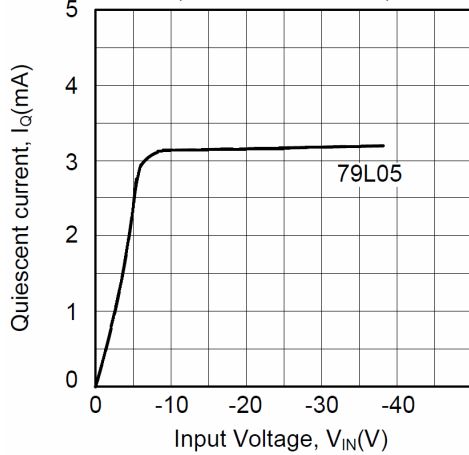
79L05 Dropout Characteristics
($T_J=25^\circ\text{C}$)



79L08 Dropout Characteristics
($T_J=25^\circ\text{C}$)



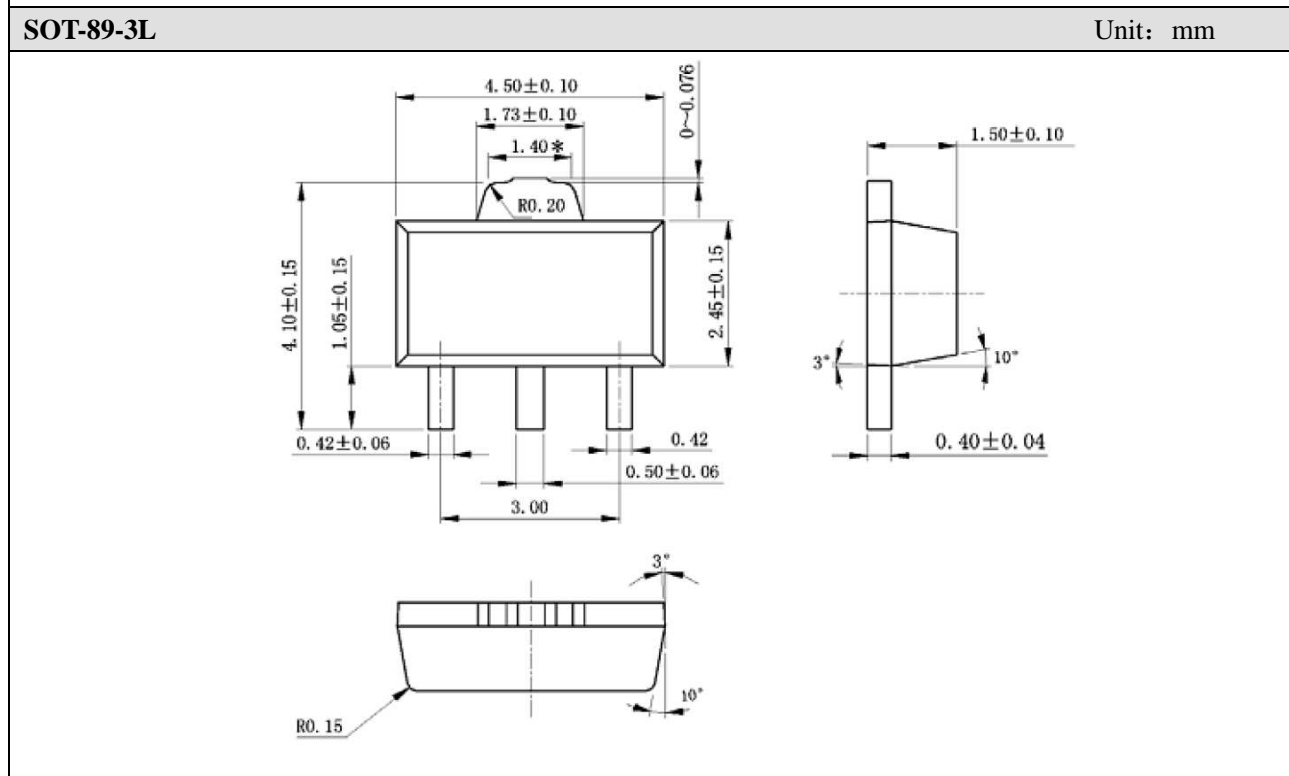
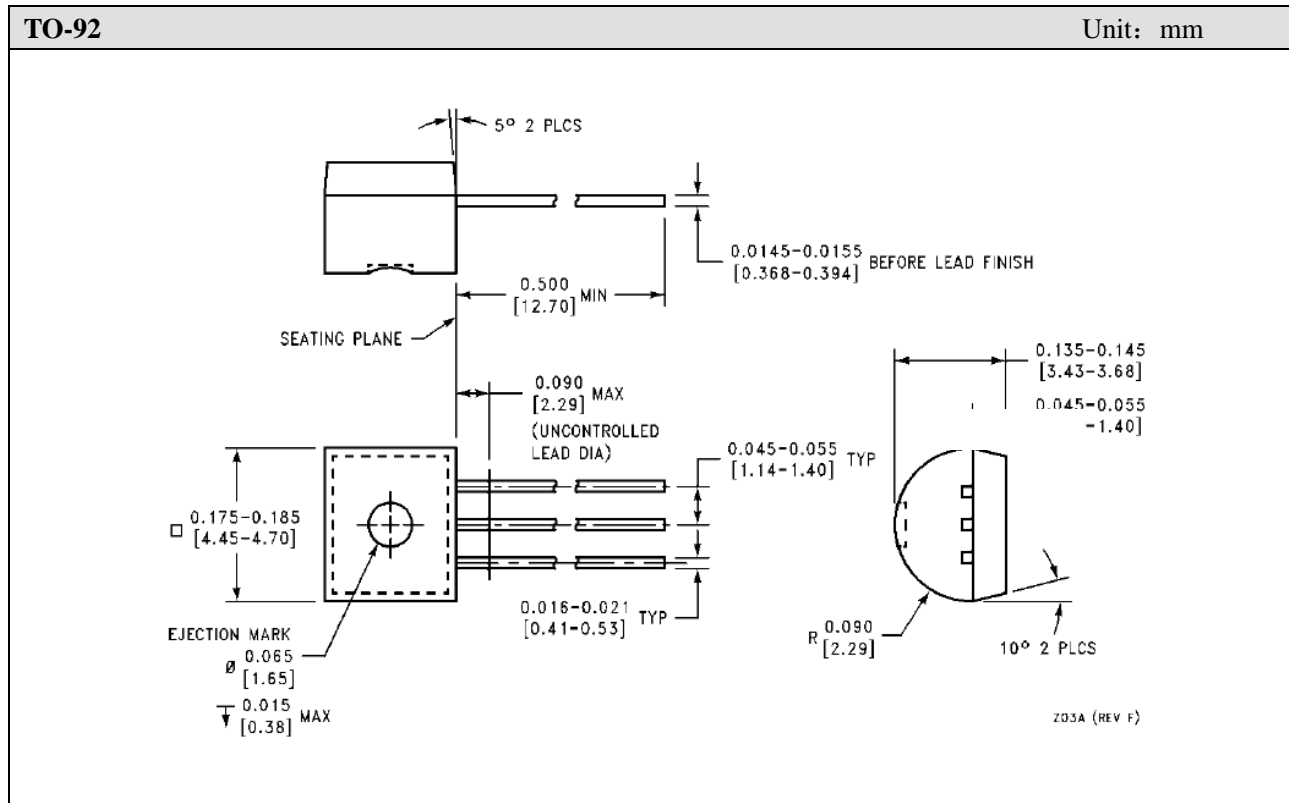
Current vs. Input Voltage
($I_{OUT}=0\text{mA}$, $T_J=25^\circ\text{C}$)



3-Terminals 100mA Negative Voltage Regulator

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Outline Dimensions



3-Terminals 100mA Negative Voltage Regulator

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Statements

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