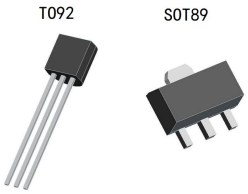
150mA Negative Voltage Regulators

79LXX

General Description

The 79LXX Series negative voltage regulators are cost - effective and user - friendly devices. They are well - suited for a wide range of applications that demand up to 150mA.One of the key features of this series is the inclusion of thermal overload protection and short - circuit protection. These protective mechanisms endow the regulators with remarkable ruggedness.In most cases, the operation of the 79LXX Series regulators does not require any external components.The 79LXX devices prove to be highly useful for on - card regulation or any application that calls for a regulated negative voltage at a moderate current level.



Features

- Built-in Short-Circuit Protection
- Output Current Up to 150mA
- Internal Thermal Overload Protection
- SOT89, TO92 package

Order Information

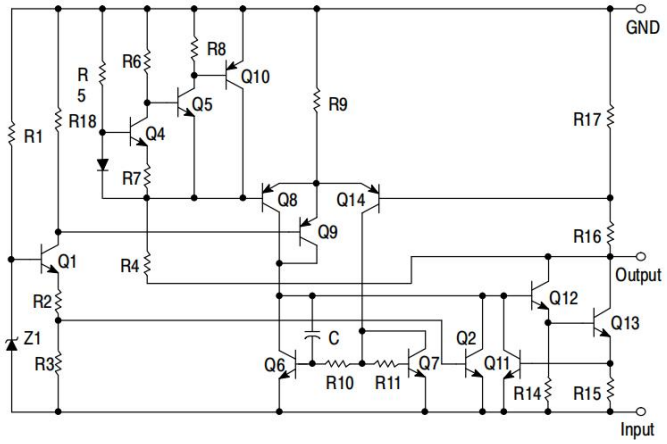
Product model	Package	Manner of packing	Minimum packing quantity
79LXXPX	SOT89-3	Reel	1000PCS/reel
79LXXTX	TO92	Bag	1000PCS/bag

Type selection guide

79L①②③④

Designator	Symbol	Description
①②	Integer	Output Voltage (-15 ~ -5V)
③	P	Package: SOT89-3
	T	Package: TO92
④	R	RoHS / Pb Free
	G	Halogen Free

Block Diagram and Pin Arrangement Diagram



Pin Assignment

SOT89-3 (Top View)

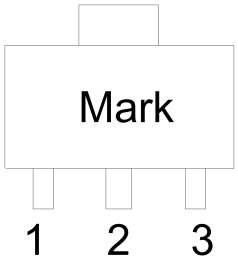


Table1: 79LXX series (SOT89-3 PKG)

PIN NO.	PIN NAME	FUNCTION
1	GND	GND pin
2	VIN	Input voltage pin
3	VOUT	Output voltage pin

TO92 (Top View)



Table2: 79LXX series (TO92 PKG)

PIN NO.	PIN NAME	FUNCTION
1	GND	GND pin
2	VIN	Input voltage pin
3	VOUT	Output voltage pin

Absolute Maximum Ratings

Parameter		Symbol	Value	Unit
Supply Voltage Input	Vo=-5V~-9V	V_{IN}	-30	V
	Vo=-12V~-15V		-35	
MAX. Output current		I_{OUT}	150	mA
MAX. Power SOT-89		P_{MAX}	0.5	W
MAX. Power TO-92		P_{MAX}	0.5	W
Operation temperature		Topr	-40~125	℃
Storage temperature		Tstr	-55~150	℃
Soldering temperature and time			+260(Recommended 10S)	℃

Note:The absolute maximum ratings are rated values exceeding which the product could suffer physical damage. These values must therefore not be exceeded under any conditions.

Recommended Operating Conditions

Parameter		Symbol	Min	Max	Unit
Supply Voltage Input	Vo=-5V	V_{IN}	-7	-22	V
	Vo=-6V		-8	-23	
	Vo=-8V		-10	-26	
	Vo=-9V		-11	-26	
	Vo=-12V		-14	-29	
	Vo=-15V		-17	-34	
Output current		I_{OUT}		150	mA

Electrical Characteristics

The following specifications are based on the 79L06, and under the condition of Cin = Cout = 1μF, Ta=25℃, unless specified otherwise.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V_{OUT}	Io=40mA, V_{IN}=-10V	0.98V_{OUT}	V_{OUT}	1.02V_{OUT}	V
		Io=1mA~40mA V_{IN}=-7V~-18V	0.96V_{OUT}	V_{OUT}	1.04V_{OUT}	V
		Io=1mA~100mA V_{IN}=-10V	0.95V_{OUT}	V_{OUT}	1.05V_{OUT}	V
Line Regulation	LNR	V_{IN}=-7V~-18V, Io=10mA	-50	-	50	mV
Load Regulation	LDR	V_{IN}=-10V, Io=1mA~100mA	-60	-	60	mV
Dropout Voltage	V_{DIF}	Ta=25℃，Io=100mA	-	1	-	V
Output noise Voltage	V_N	F=10Hz to 100KHz	-	200	-	μV/Vo
Ripple Rejection	PSRR	Tj=25℃，f=120Hz, Io=40mA, V_{IN}=-8V eIN=1Vpp	-	60	-	dB
Quiescent Current	I_Q	V_{IN}=-10V	-	3	-	mA

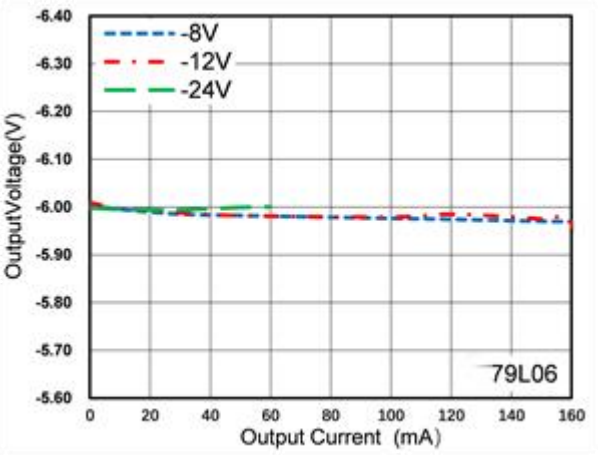
LNR: Line Regulation. The change in output voltage for a change in the input voltage. The measurement is made under conditions of low dissipation or by using pulse techniques such that the average chip temperature is not significantly affected.

LDR: Load Regulation. The change in output voltage for a change in load current at constant chip temperature.

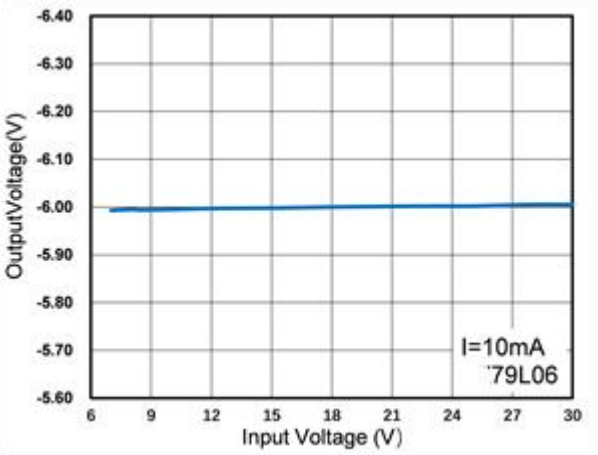
Typical Performance Characteristics

Note: C_{IN}=0.33μF C_{OUT}=0.1μF T=25℃ unless specified otherwise

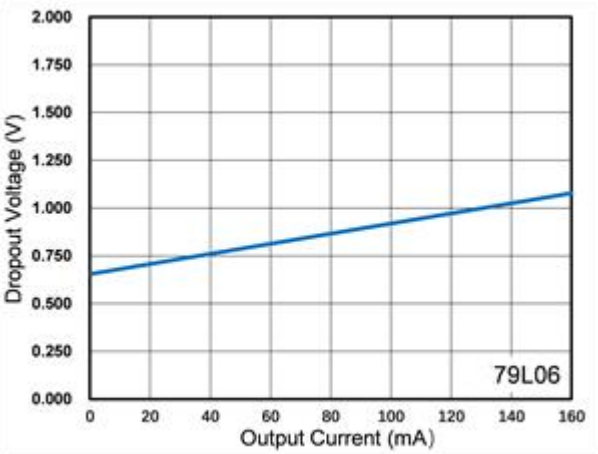
(1) Output Voltage VS Output Current (VOUT=-6.0V)



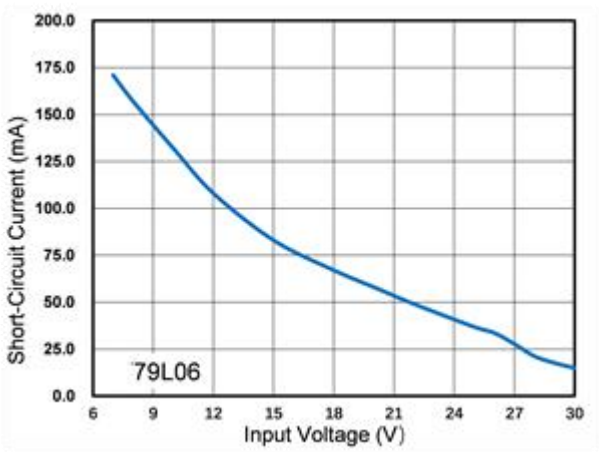
(2) Output Voltage VS Input Voltage (VOUT=-6.0V)



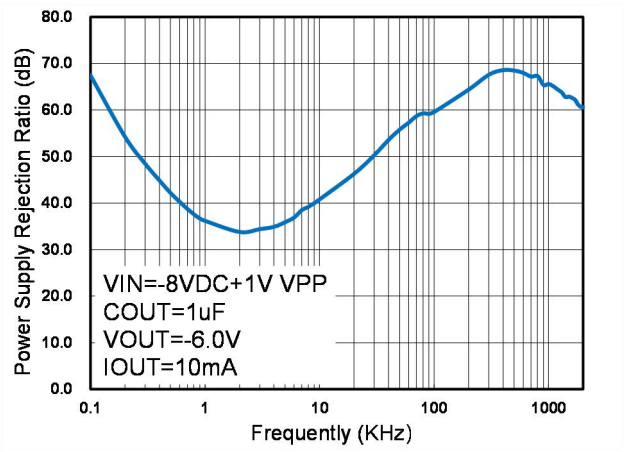
(3) Dropout Voltage VS Output Current (VOUT=-6.0V)



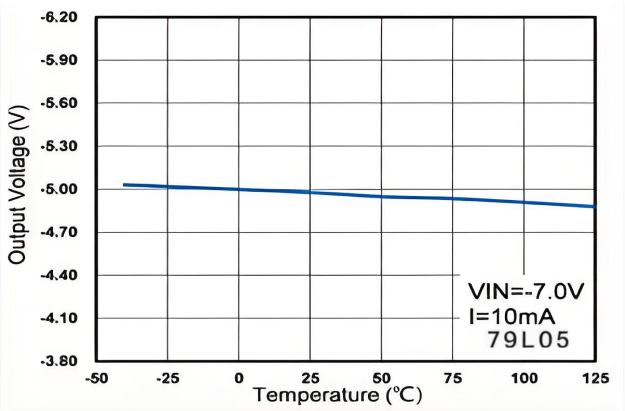
(4) Short-Circuit Current VS Input Voltage (VOUT=-6V)



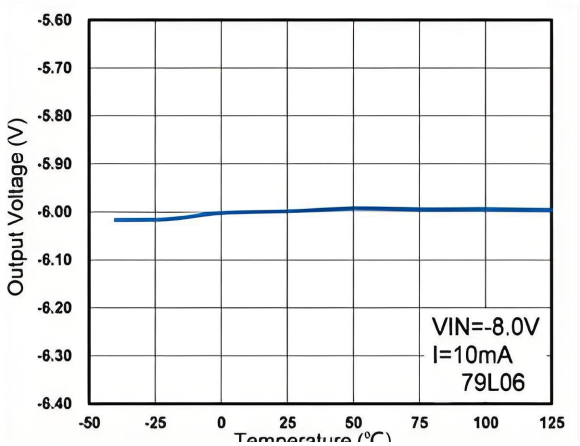
(5) PSRR



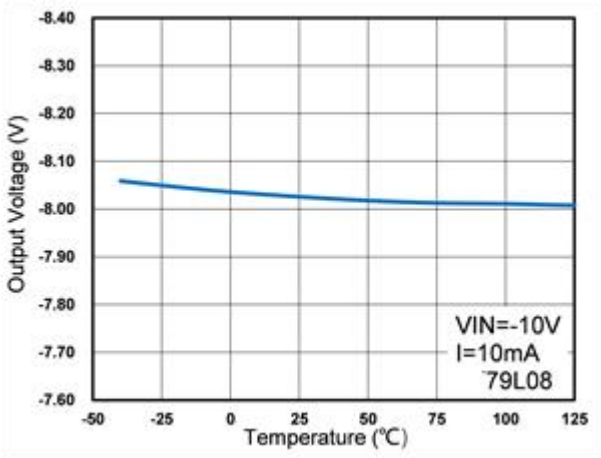
(6) Output Voltage VS Temperature (VOUT=-5.0V)



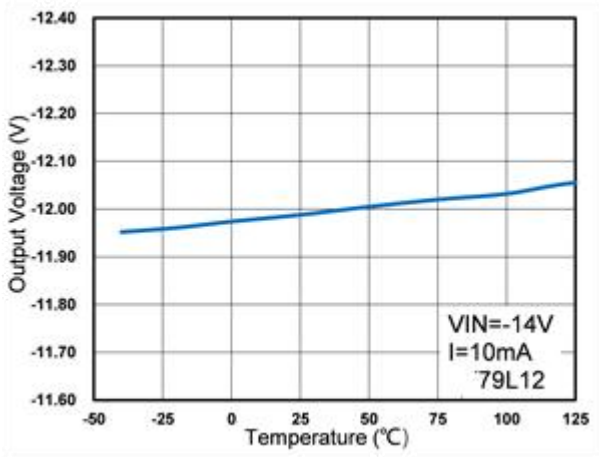
(7) Output Voltage VS Temperature (VOUT=-6.0V)



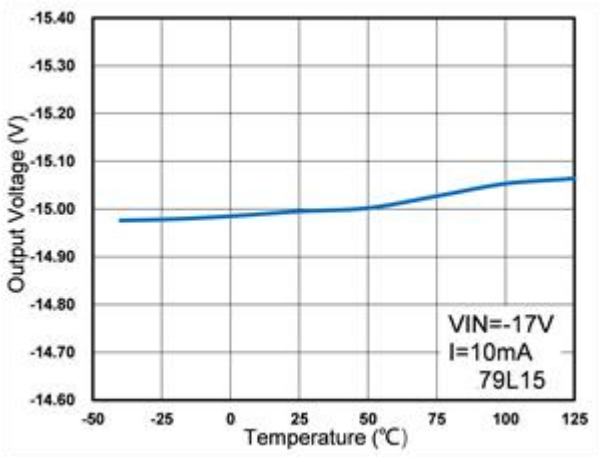
(8) Output Voltage VS Temperature (VOUT=-8.0V)



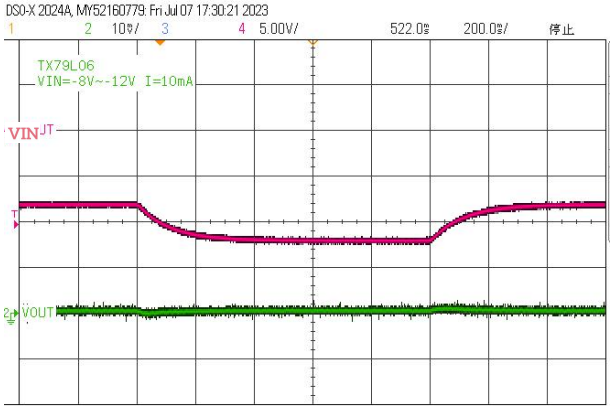
(9) Output Voltage VS Temperature (VOUT=-12.0V)



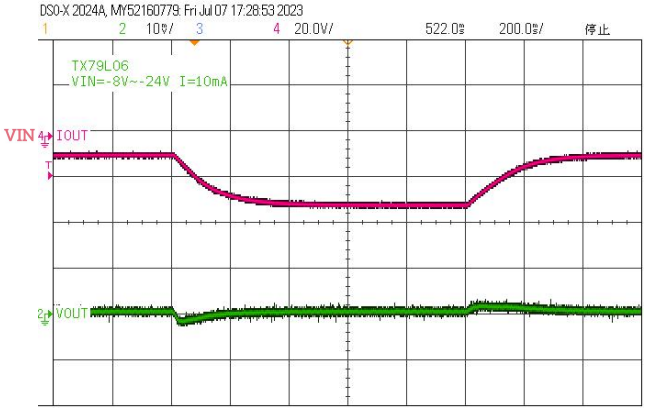
(10) Output Voltage VS Temperature (VOUT=-15.0V)



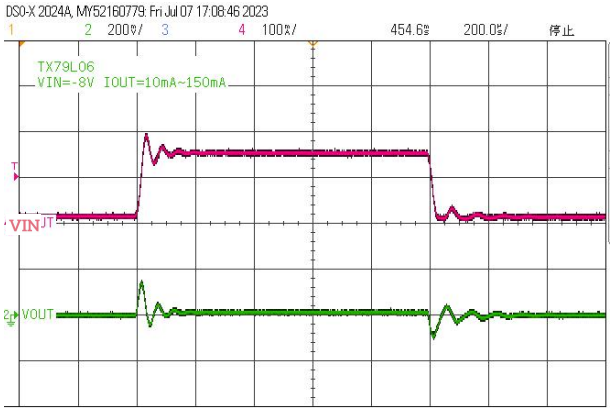
(11) Input Transient Response (VIN=-8V ~ -12V)



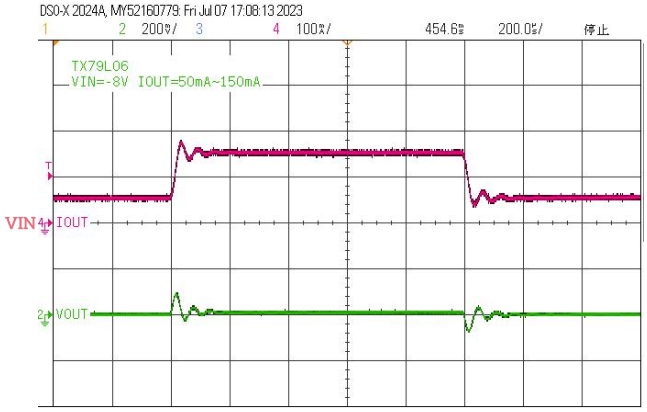
(12) Input Transient Response (VIN=-8V ~ -24V)



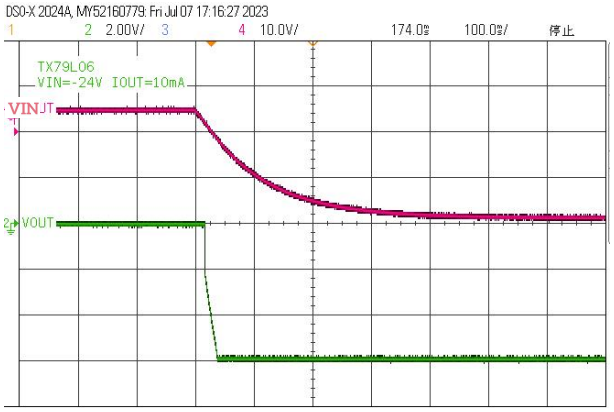
(13) Load Transient Response (IOUT=10mA-150mA)



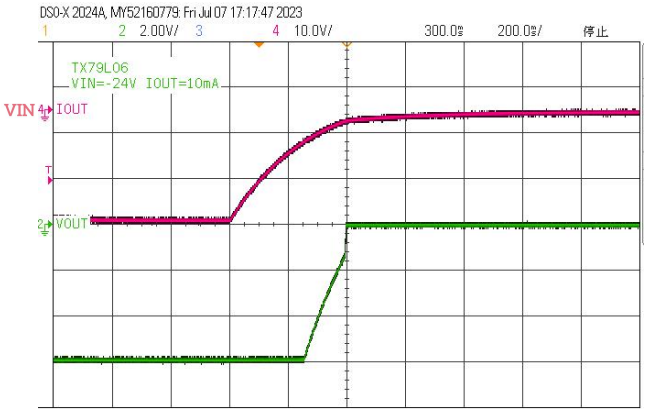
(14) Load Transient Response (IOUT=50mA-150mA)



(15) Power ON (VIN=-24V I=10mA)



(16) Power OFF (VIN=-24V I=10mA)



Application Circuits

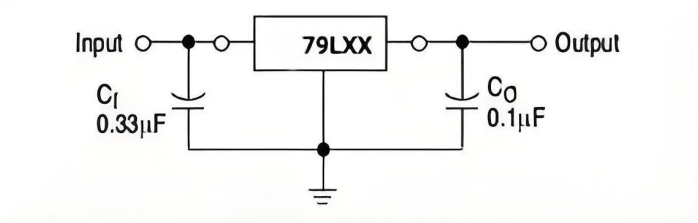
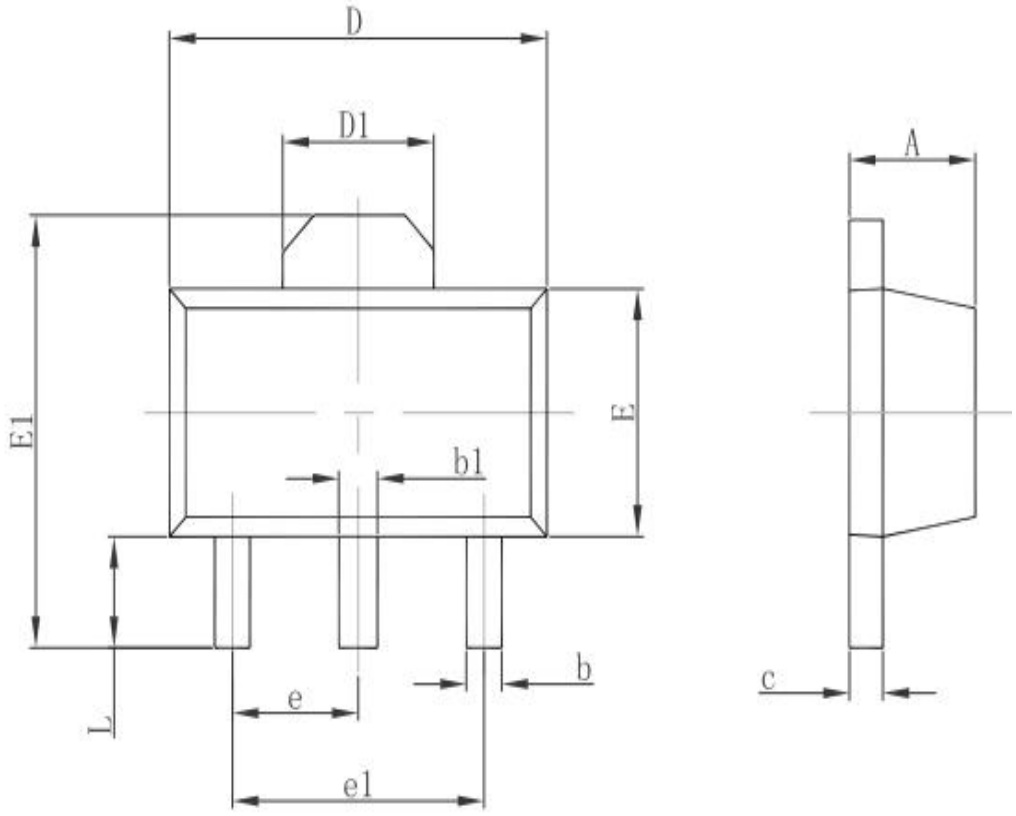


Fig.1 Standard Application

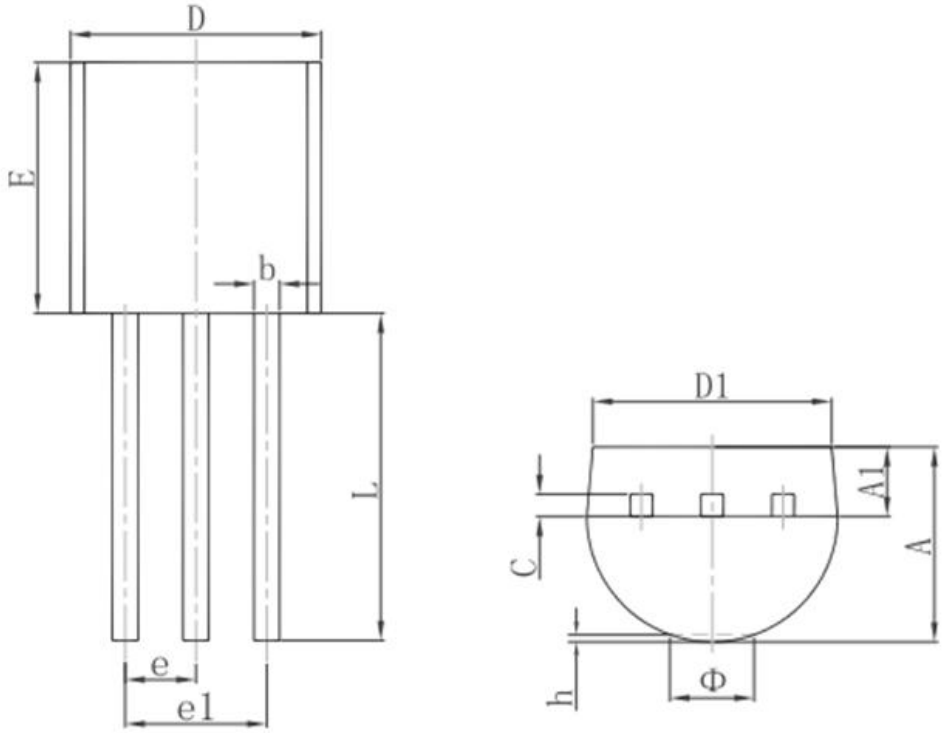
The 79LXX Series of fixed voltage regulators are designed with Thermal Overload Protections that shut down the circuit when subjected to an excessive power overload condition, Internal Short Circuit Protection that limits the maximum current the circuit will pass. In many low current applications, compensation capacitors are not required. However, it is recommended that the regulator input be bypassed with a capacitor if the regulator is connected to the power supply filter with long wire length, or if the output load capacitance is large. An input bypass capacitor should be selected to provide good high−frequency characteristics to insure stable operation under all load conditions. A 0.33μF or larger tantalum, mylar, or other capacitor having low internal impedance at high frequencies should be chosen. The bypass capacitor should be mounted with the shortest possible leads directly across the regulator's input terminals. Normally good construction techniques should be used to minimize ground loops and lead resistance drops since the regulator has no external sense lead. Bypassing the output is also recommended.

Package Information（SOT89）



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550REF.		0.061REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP.		0.060TYP.	
e1	3.000TYP.		0.118TYP.	
L	0.900	1.200	0.035	0.047

Package Information（TO92）



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270TYP.		0.050TYP.	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

Special Instructions

The company reserves the right of final interpretation of this specification.

Version Change Description

Version：V1.0 Author：Yang Time：2025.12.18

Modify the record：

1. Editio princeps

Statement

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