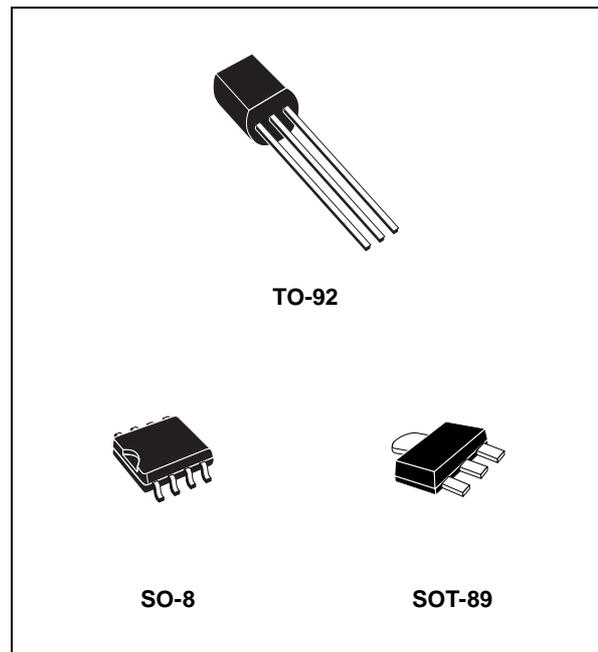


## POSITIVE VOLTAGE REGULATORS

- OUTPUT CURRENT UP TO 100 mA
- OUTPUT VOLTAGES OF 3.3; 5; 6; 8; 9; 10; 12; 15; 18; 20; 24V
- THERMAL OVERLOAD PROTECTION
- SHORT CIRCUIT PROTECTION
- NO EXTERNAL COMPONENTS ARE REQUIRED
- AVAILABLE IN EITHER  $\pm 5\%$  (AC) OR  $\pm 10\%$  (C) SELECTION

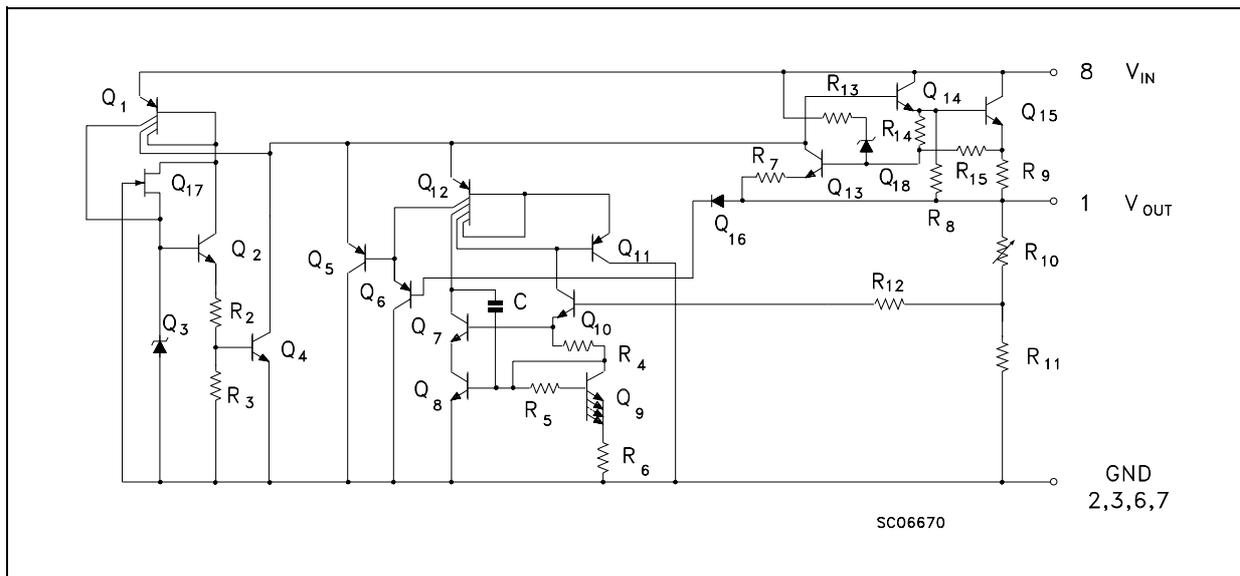
### DESCRIPTION

The L78L00 series of three-terminal positive regulators employ internal current limiting and thermal shutdown, making them essentially indestructible. If adequate heat-sink is provided, they can deliver up to 100 mA output current. They are intended as fixed voltage regulators in a wide range of applications including local or on-card regulation for elimination of noise and distribution problems associated with single-point regulation. In addition, they can be used with power pass elements to make high-current voltage regulators. The L78L00 series used as Zener diode/resistor combination replacement, offers an effective output impedance improvement of typically two



orders of magnitude, along with lower quiescent current and lower noise.

### SCHEMATIC DIAGRAM



# L78L00 SERIES

## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter <sup>2</sup>		Value	Unit
$V_I$	DC Input Voltage	$V_O = 3.3$ to $9$ V	30	V
		$V_O = 12$ to $15$ V	35	
		$V_O = 18$ to $24$ V	40	
$I_O$	Output Current		100	mA
$P_{tot}$	Power Dissipation		Internally Limited (*)	
$T_{stg}$	Storage Temperature Range		-40 to 150	°C
$T_{op}$	Operating Junction Temperature Range	for L78L00C, L78L00AC	0 to 125	°C
		for L78L00AB	-40 to 125	

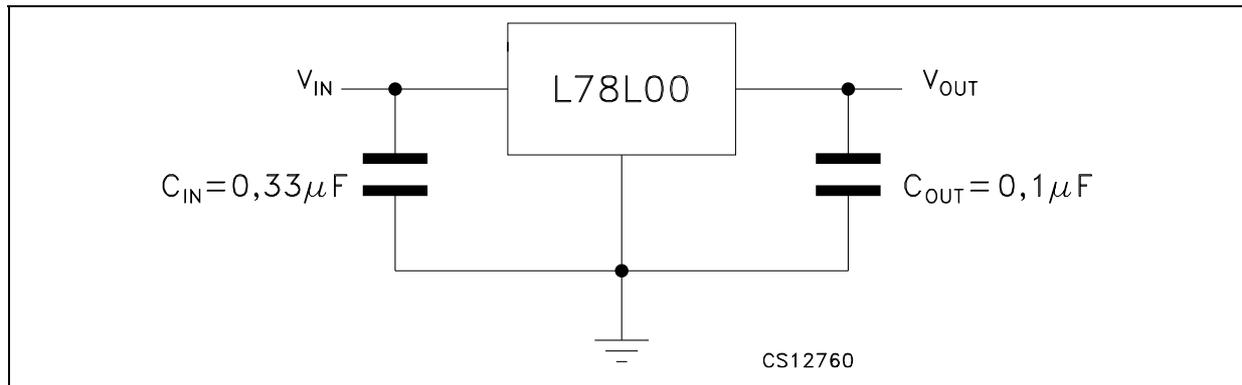
(\*) Our SO-8 package used for Voltage Regulators is modified internally to have pins 2, 3, 6 and 7 electrically communed to the die attach flag. This particular frame decreases the total thermal resistance of the package and increases its ability to dissipate power when an appropriate area of copper on the printed circuit board is available for heat-sinking. The external dimensions are the same as for the standard SO-8.

## THERMAL DATA

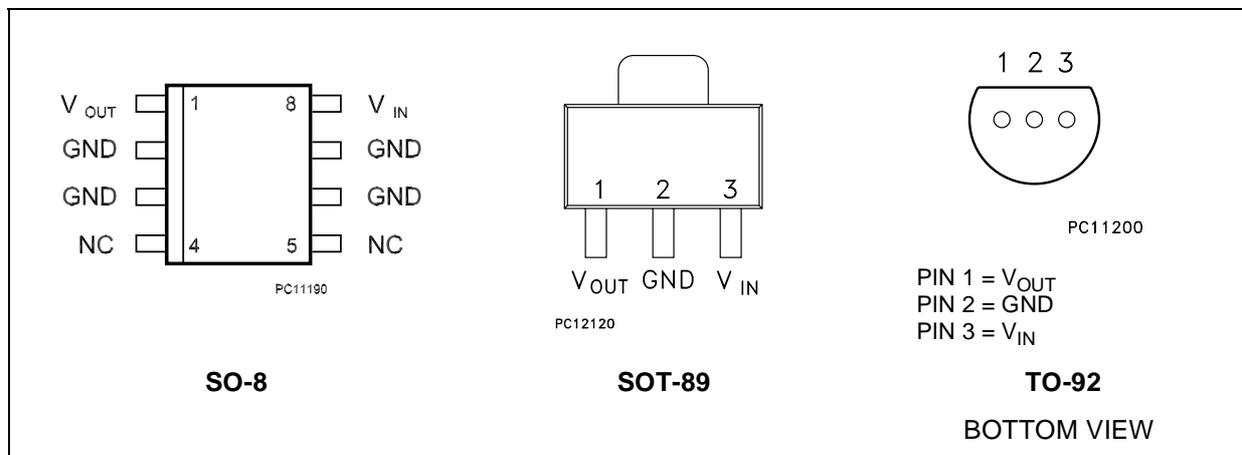
Symbol	Parameter		SO-8	TO-92	SOT-89	Unit
$R_{thj-case}$	Thermal Resistance Junction-case	Max	20		15	°C/W
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	55 (*)	200		°C/W

(\*) Considering 6 cm<sup>2</sup> of copper Board heat-sink

## TEST CIRCUITS



## CONNECTION DIAGRAM (top view)



## ORDERING CODES

TYPE	SO-8 (TUBE)*	TO-92 (TUBE)**	SOT-89 (T&R)	OUTPUT VOLTAGE
L78L33C	L78L33CD	L78L33CZ		3.3 V
L78L33AC	L78L33ACD	L78L33ACZ	L78L33ACUTR	3.3 V
L78L33AB	L78L33ABD	L78L33ABZ	L78L33ABUTR	3.3 V
L78L05C	L78L05CD	L78L05CZ		5 V
L78L05AC	L78L05ACD	L78L05ACZ	L78L05ACUTR	5 V
L78L05AB	L78L05ABD	L78L05ABZ	L78L05ABUTR	5 V
L78L06C	L78L06CD	L78L06CZ		6 V
L78L06AC	L78L06ACD	L78L06ACZ	L78L06ACUTR	6 V
L78L06AB	L78L06ABD	L78L06ABZ	L78L06ABUTR	6 V
L78L08C	L78L08CD	L78L08CZ		8 V
L78L08AC	L78L08ACD	L78L08ACZ	L78L08ACUTR	8 V
L78L08AB	L78L08ABD	L78L08ABZ	L78L08ABUTR	8 V
L78L09C	L78L09CD	L78L09CZ		9 V
L78L09AC	L78L09ACD	L78L09ACZ	L78L09ACUTR	9 V
L78L09AB	L78L09ABD	L78L09ABZ	L78L09ABUTR	9 V
L78L10C	L78L10CD	L78L10CZ		10 V
L78L10AC	L78L10ACD	L78L10ACZ	L78L10ACUTR	10 V
L78L10AB	L78L10ABD	L78L10ABZ	L78L10ABUTR	10 V
L78L12C	L78L12CD	L78L12CZ		12 V
L78L12AC	L78L12ACD	L78L12ACZ	L78L12ACUTR	12 V
L78L12AB	L78L12ABD	L78L12ABZ	L78L12ABUTR	12 V
L78L15C	L78L15CD	L78L15CZ		15 V
L78L15AC	L78L15ACD	L78L15ACZ	L78L15ACUTR	15 V
L78L15AB	L78L15ABD	L78L15ABZ	L78L15ABUTR	15 V
L78L18C	L78L18CD	L78L18CZ		18 V
L78L18AC	L78L18ACD	L78L18ACZ	L78L18ACUTR	18 V
L78L18AB	L78L18ABD	L78L18ABZ	L78L18ABUTR	18 V
L78L20C	L78L20CD	L78L20CZ		20 V
L78L20AC	L78L20ACD	L78L20ACZ	L78L20ACUTR	20 V
L78L20AB	L78L20ABD	L78L20ABZ	L78L20ABUTR	20 V
L78L24C	L78L24CD	L78L24CZ		24 V
L78L24AC	L78L24ACD	L78L24ACZ	L78L24ACUTR	24 V
L78L24AB	L78L24ABD	L78L24ABZ	L78L24ABUTR	24 V

(\*) Available in Tape & Reel with the suffix "13TR".

(\*\*) Available in Ammopak with the suffix "-AP" or in Tape & Reel with the suffix "TR".