



AP78LXX

(Preliminary)

0.15A Low Dropout Positive Regulator

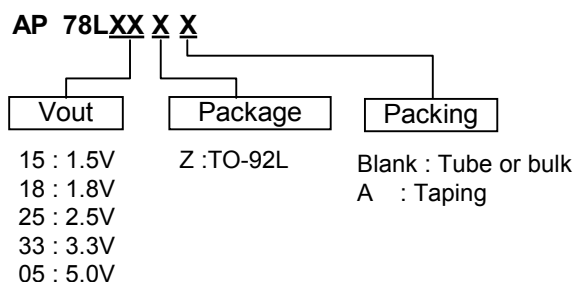
■ Features

- Output voltage tolerances of $\pm 3\%$ over temperature range.
- Fast transient response
- Output current of 150mA.
- Built-in thermal shutdown
- Packages: TO-92.
- Good noise rejection
- 3-Terminal Fixed output voltage: 1.5V, 1.8V, 2.5V, 3.3V, 5.0V

■ Applications

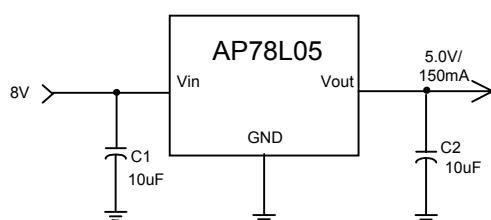
- PC peripheral
- Communication

■ Ordering Information

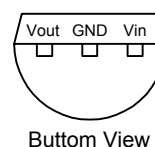


■ Typical Circuit

8V/5V output regulator



■ Connection Diagram



■ Pin Descriptions

NAME	I/O	PIN #	FUNCTION
GND	I	2	Ground.
Vout	O	1	The output of the regulator. A minimum of 10uF capacitor must be connected from this pin to ground to insure stability.
Vin	I	3	The input pin of regulator. Typically a large storage capacitor is connected from this pin to ground to insure that the input voltage does not sag below the minimum dropout voltage during the load transient response. This pin must always be 1.3V higher than Vout in order for the device to regulate properly.

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Rev. 00. May.07, 2003



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Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit
V_{IN}	DC Supply Voltage	-0.3 to 18 V	V
P_D	Power Dissipation	Internally Limited	
T_{ST}	Storage Temperature	-65 to +150	°C
T_{OP}	Operating Junction Temperature Range	0 to +150	°C

Electrical Characteristics (Under Operating Conditions)

PARAMETER	CONDITIONS		MIN	TYP	MAX	UNIT
Output Voltage	AP78L15	$I_{OUT} = 10mA, T_J = 25^{\circ}C, 3V \leq V_{IN} \leq 12V$	1.455	1.500	1.545	V
	AP78L18	$I_{OUT} = 10mA, T_J = 25^{\circ}C, 3.3V \leq V_{IN} \leq 12V$	1.746	1.800	1.854	V
	AP78L25	$I_{OUT} = 10mA, T_J = 25^{\circ}C, 4V \leq V_{IN} \leq 12V$	2.425	2.500	2.575	V
	AP78L33	$I_{OUT} = 10mA, T_J = 25^{\circ}C, 4.8V \leq V_{IN} \leq 12V$	3.200	3.300	3.4	V
	AP78L05	$I_{OUT} = 10mA, T_J = 25^{\circ}C, 6.5V \leq V_{IN} \leq 12V$	4.850	5.000	5.150	V
Line Regulation	AP78LXX	$I_O=10mA, V_{OUT}+1.5V < V_{IN} < 18V, T_J=25^{\circ}C$			0.2	%
Load Regulation	AP78LXX	$V_{IN}=V_{OUT}+2V, 0mA < I_O < 0.15A, T_J=25^{\circ}C$			1	%
Dropout Voltage ($V_{IN}-V_{OUT}$)	AP78LXX	$I_{OUT} = 0.15A, \Delta V_{OUT}=1\%V_{OUT}$			1.3	V
Minimum Load Current	AP78LXX	$0^{\circ}C \leq T_J \leq 125^{\circ}C$		5	10	mA
Thermal Regulation	$T_A=25^{\circ}C, 30ms$ pulse			0.008	0.04	%/W
Ripple Rejection	$F=120Hz, C_{OUT}=25\mu F$ Tantalum, $I_{OUT}=0.15A$					
	AP78LXX	$V_{IN}=V_{OUT}+3V$		60	70	dB
Temperature Stability	$I_O=10mA$			0.5		%
θ_{JA}	TO-92 Thermal Resistance Junction-to-Ambient(No heat sink ;No air flow)			230		°C/W
θ_{JC}	TO-92 : Control Circuitry/Power Transistor Thermal ResistanceJunction-to-Case			60		°C/W

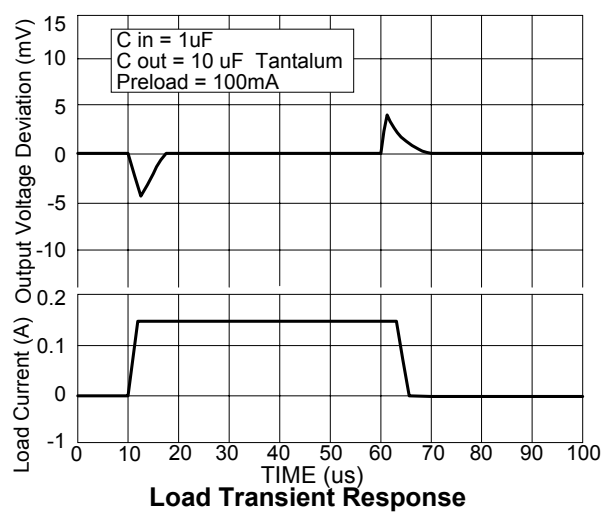
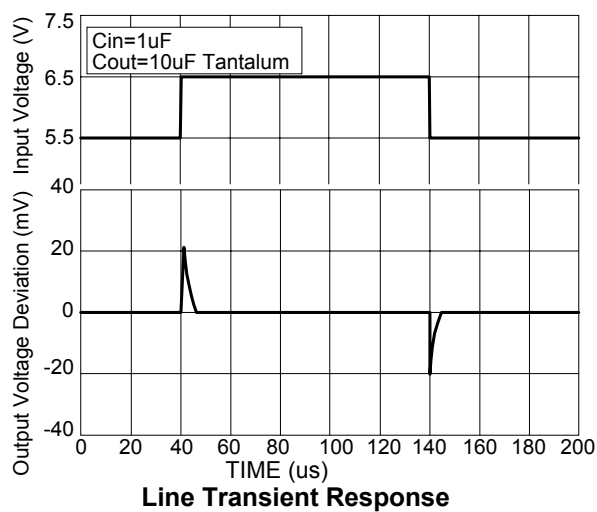
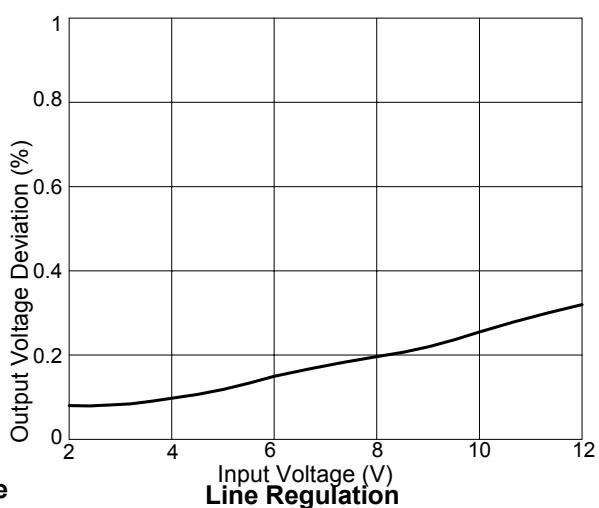
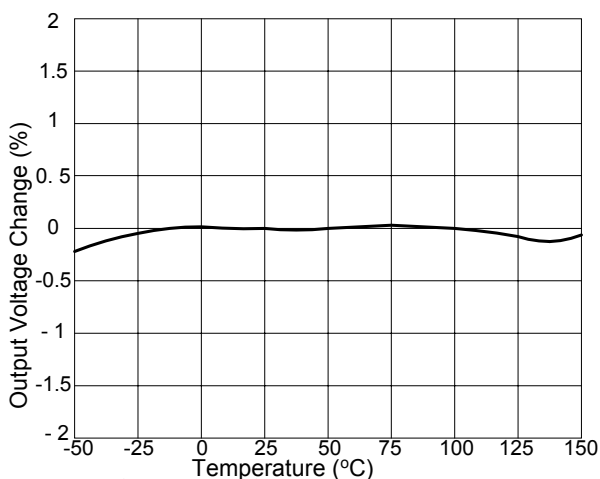
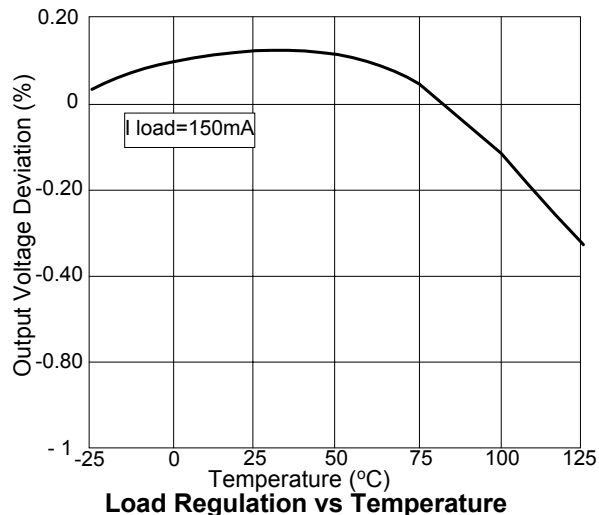
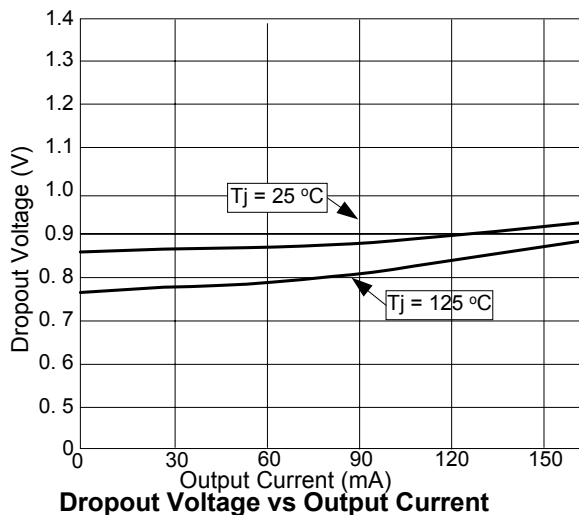
Note1: Quiescent current is defined as the minimum output current required to maintain regulation. At 12V input/output differential the device is guaranteed to regulate if the output current is greater than 10mA.



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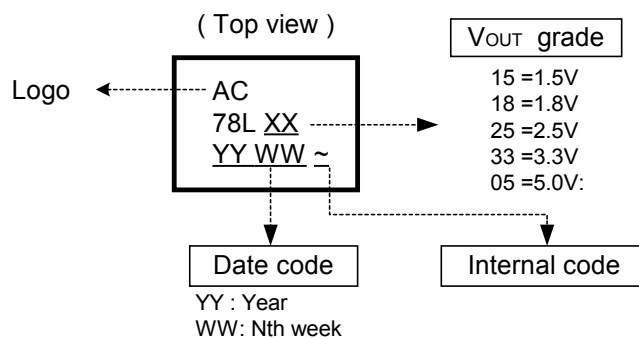
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■ Typical Performance Characteristics



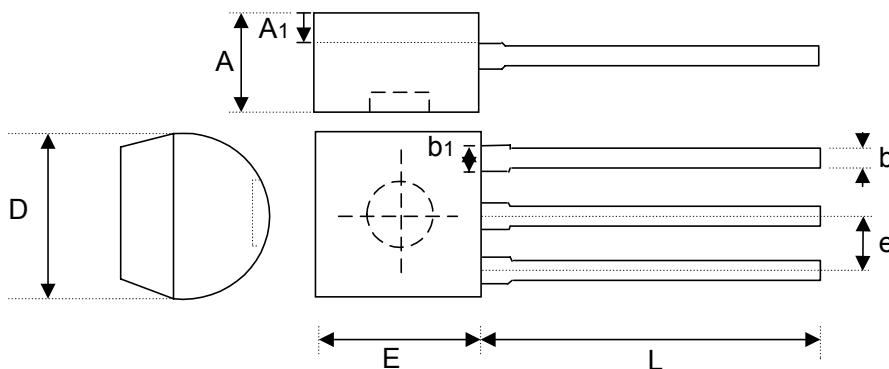
0.15A Low Dropout Positive Regulator

■ Marking Information



■ Package Dimension

TO92-3L Package Outline Dimension



SYMBLOS	DIMENSIONS IN MILLMETER			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	3.302	3.556	3.810	0.130	0.140	0.150
A1	1.016	-----	-----	0.040	-----	-----
b	0.330	0.381	0.432	0.013	0.015	0.017
b1	0.406	0.457	0.506	0.016	0.018	0.020
D	4.445	4.572	4.699	0.175	0.180	0.185
E	4.445	4.572	4.699	0.175	0.180	0.185
L	13.00	-----	15.50	0.512	-----	0.610
e	1.150	-----	1.390	0.045	-----	0.055