

Features

- 1.3V maximum dropout at full load current
- · Fast transient response
- · Output current limiting for each channel
- Built-in thermal shutdown each channel
- Good noise rejection
- Dual output ch1=3.3V, ch2=2.5V (1.8V for B version)
- Lead-Free Package: SOP-8L
- Lead Free Finish/RoHS Compliant for Lead Free products (Note 1)

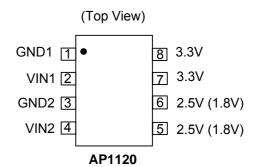
General Description

AP1120 series are low dropout positive regulator to provide 1A output current capability. The product is specifically designed to provide well-regulated supply for low voltage IC applications such as high-speed bus termination and low current 3.3V/2.5V or 3.3V/1.8V logic supply. AP1120 series are guaranteed to have <1.3V dropout at full load current making it ideal to provide well regulated outputs dual channels with up to 18V input supply.

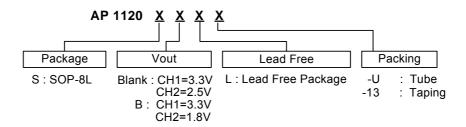
Applications

- PC peripheral
- Communication

Connection Diagram



Ordering Information



Note: 1. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.

		Backage	ackage Packaging Code (Note 2)	Tube		13" Tape and Reel		
	Device	_		Quantity	Part Number	Quantity	Part Number	
		Code	(NOLE 2)		Suffix		Suffix	
<u>@</u>	AP1120S	S	SOP-8L	100	-U	2500/Tape & Reel	-13	

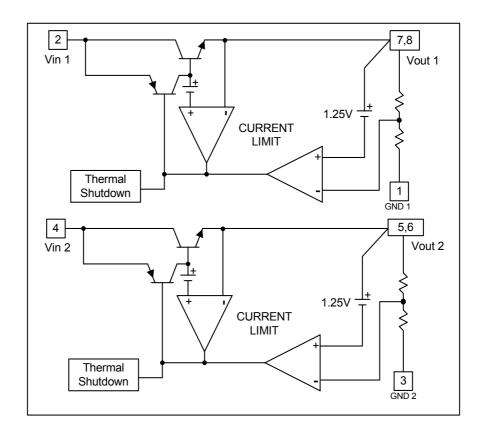
Note: 2. Pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.



Pin Descriptions

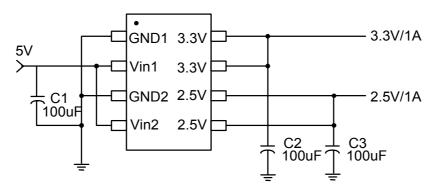
NAME	FUNCTION		
GND1/2	Ground		
3.3V(Vout1)	The output of the regulator. A minimum of 10uF capacitor $(0.15\Omega \le ESR \le 20\Omega)$ must be connected from this pin to ground to insure stability.		
2.5V/1.8V (Vout2)			
VIN1/2	The input pin of regulator. Typically a large storage capacitor $(0.15\Omega \le ESR \le 20\Omega)$ is connected from this pin to ground.		

Block Diagram





Typical Circuit



(3.3V/2.5V Dual output)

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
	AP1120(B) - V _{OUT1}	I_{OUT} = 10mA, T_A = 25°C, 4.8V \leq V _{IN} \leq 12V	3.235	3.300	3.365	V
Output Voltage	AP1120 - V _{OUT2}	I_{OUT} = 10mA, T_A = 25°C, 4V \leq V _{IN} \leq 12V	2.450	2.500	2.550	V
	AP1120B - V _{OUT2}	I_{OUT} = 10mA, T_A = 25°C, 4V \leq V _{IN} \leq 12V	1.764	1.800	1.836	V
Line Regulation	I_O =10mA, V_{OUT} +1.5V< V			0.2	%	
Load Regulation	AP1120 series V _{OUT1}	$V_{IN} = 5V, 0 \le I_{OUT} \le 1A,$ $T_A = 25^{\circ}C \text{ (Note 3, 4)}$		26	33	mV
Load Negulation	AP1120 series V _{OUT2}	V_{IN} =4V, 0mA <lo<1a, T_A =25°C (Note 3, 4)</lo<1a, 		20	25	mV
Dropout Voltage (V _{IN} -V _{OUT})	I _{OUT} = 1A,ΔV _{OUT} =0.1%\		1.3	1.4	V	
Current Limit	$(V_{IN}-V_{OUT}) = 5V$		1. 1			Α
Minimum Load Current	0°C≤Tj≤125°C (Note :	5)		5	10	mΑ
Thermal Regulation	T _A =25 °C, 30ms pulse			0.008	0.04	%/W
Ripple Rejection	F=120Hz,C _{OUT} =25uF Tantalum, I _{OUT} =1A			60	70	dB
Temperature Stability	I _O =10mA		0.5		%	
$\theta_{\rm JA}$ Thermal Resistance Junction-to-Ambient (No heat sink; No air flow)	SOP-8L: Control Circu (Note 6) CH1 or CH2 only CH1 & CH2 and PD1=		50 45		°C/W	
$\theta_{\rm JC}$ Thermal Resistance Junction-to-Case	SOP-8L: Control Circu (Note 6) CH1 or CH2 only CH1 & CH2 and PD1=		20 12		°C/W	

3. See thermal regulation specifications for changes in output voltage due to heating effects. Line and load regulation are Note: measured at a constant junction temperature by low duty cycle pulse testing. Load regulation is measured at the output lead = 1/18" from the package.

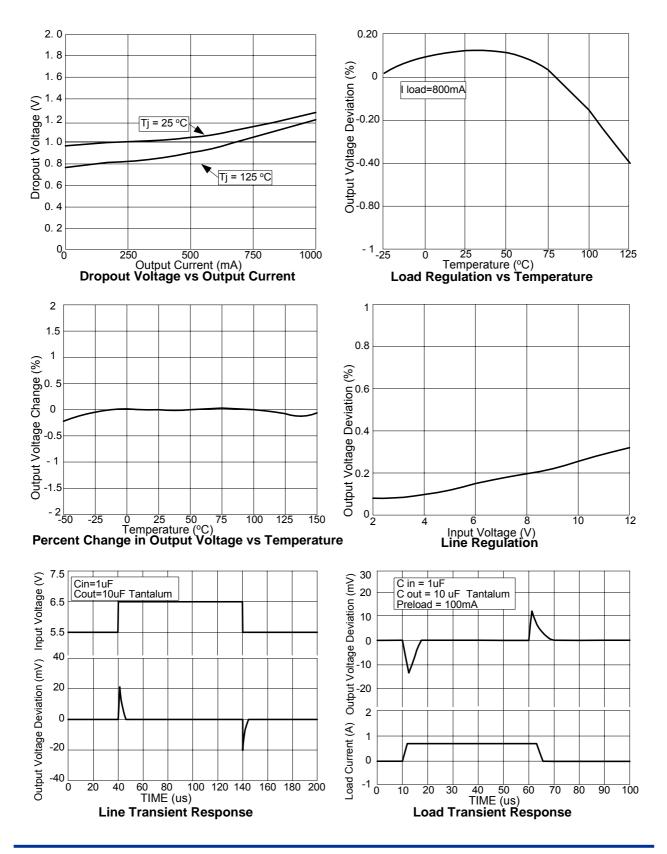
Line and load regulation are guaranteed up to the maximum power dissipation of 15W. Power dissipation is determined by the input/output differentially and the output current. Guaranteed maximum power dissipation will not be available over the

Quiescent current is defined as the minimum output current that requires maintaining regulation. At 12V input/output

differential the device is guaranteed to regulate if the output current is greater than 10mA. Vout1 and Vout2 are connected to the PCB copper area 5.5mm*5.5mm separately. If you need large PD or lower Tc & Tj, please connect to the large copper area >> 5.5mm*5.5mm (like 10mm*10mm).

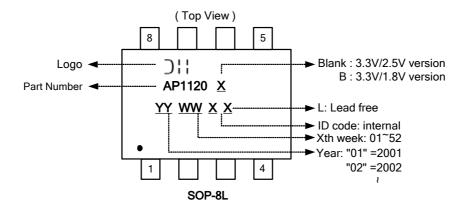


Typical Performance Characteristics



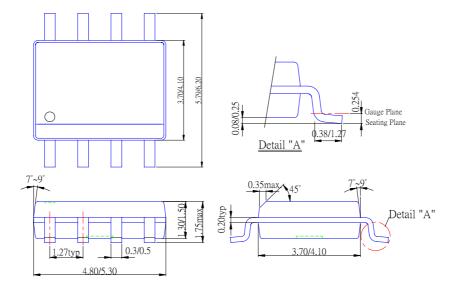


Marking Information



Package Information

Package Type: SOP-8L





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