



## 1.5A Low Dropout Voltage Regulator

Adjustable & Fix Output

## B1086

Advance Information

### Description

The Bay Linear B1086 is Monolithic low power 1.5A Adjustable and fixed NPN voltage regulator that are easy to use with minimum external components. It is suitable for applications requiring a well-regulated positive output voltage with low input-output differential voltage requirements and output voltage 3.3V, 2.9V, or 2.5V.

The B1086 Outstanding features include full power usage up to 1.5Amp of load current internal current limiting and thermal shutdown. Other fixed versions are also available  $V_{out}=2.0$  to 4.0V.

The B1086 is offered in a 3-pin TO-220, TO-263 & TO-252 packages compatible with other 3 terminal regulators. For 3A Low dropout Regulator refer to the B1085 data sheet.

### Features

- Adjustable Output Down to 1.2V
- Fixed Output Voltages 2.5V, 3.3V, and 5.0V
- Output Current of 1.5A
- Low Dropout Voltage 1.1V Typ.
- Current & Thermal Limiting
- Standard 3-Terminal Low Cost TO-220, D<sup>2</sup>, D Packages
- Similar to industry Standard LT1086/LT1586

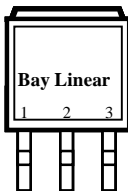
### Applications

- 3.3V to 2.5V for Pentium Processor
- SMPS Post Regulator
- High Efficiency "Green" Computer Systems
- High Efficiency Linear Power Supplies
- 5V to 3.XXV fro Pentium Processor
- Battery Charger

### Pin Connection

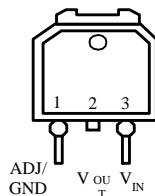


TO-263-3 (S)



Top View

TO-252 (D)



Front View

### Ordering Information

Devices	Package	Temp.
B1086T	TO-220	0 °C to 70 °C
B1086S	TO-263	0 °C to 70 °C
B1086D	TO-252	0 °C to 70 °C

### Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Maximum Input Voltage	$V_{IN}$	6	V
Power Dissipation	$P_O$	Internally Limited	W
Thermal Resistance Junction to Case	$\theta_{JC}$	3	°C/W
Thermal Resistance Junction to Ambient	$\theta_{JA}$	50	
Operating Junction Temperature Range Control Section Power Transistor	$T_J$	0 to 125 0 to 150	°C
Storage Temperature Range	$T_{STG}$	-65 to 150	
Lead Temperature (Soldering 10 Sec.)	$T_{LEAD}$	260	

### Electrical Characteristics

( $V_{IN} = 4.75V$  to  $5.25V$ ;  $I_O = 10mA$  to  $1.5Amp$ , unless otherwise specified)

Parameter	Symbol	Conditions	MIN	TYP	MAX	UNIT	
Output Voltage	$V_O$	$V_o = 3.3V, I_o = 10mA, V_{IN} = 5V, T = 25^\circ C$	3.267	3.3	3.333	V	
		$V_o = 3.3V, I_o = 10mA, V_{IN} = 5V, \text{Over Temp.}$	3.234		3.366		
		$V_o = 2.9V, I_o = 10mA, V_{IN} = 5V, T = 25^\circ C$	2.871	2.9	2.929		
		$V_o = 2.9V, I_o = 10mA, V_{IN} = 5V, \text{Over Temp.}$	2.842		2.958		
		$V_o = 2.5V, I_o = 10mA, V_{IN} = 5V, T = 25^\circ C$	2.475	2.5	2.525		
$V_o = 2.5V, I_o = 10mA, V_{IN} = 5V, \text{Over Temp.}$	2.450	2.550					
Line Regulation (1)	$REG_{(line)}$	$I_o = 10mA, V_{IN} = 5V, T = 25^\circ C$		0.015	0.2	%	
		$I_o = 10mA, V_{IN} = 5V, \text{Over Temperature}$		0.035			
Load Regulation (1)	$REG_{(LOAD)}$	$I_o = 10mA, V_{IN} = 5V, T = 25^\circ C$					
		$I_o = 10mA, V_{IN} = 5V, \text{Over Temperature}$					
Dropout Voltage	$V_D$	$T = 25^\circ C$		1.0		V	
		Over Temperature		1.1	1.3		
Current Surge Limit	$I_S$			2.5		A	
Quiescent Current	$I_Q$	$V_{IN} = 5V$		10	16	mA	
Temperature Coefficient	$T_C$	$V_{IN} = 5V$		0.005		%/°C	
Temperature Stability	$T_S$	$I_o = 10mA, V_{IN} = 5V$		0.5		%	
RMS Output Noise	$V_N$	$T = 25^\circ C, 10Hz \text{ to } 10kHz$		0.003		% $V_O$	
Ripple Rejection	$R_A$	$T = 25^\circ C, V_{IN} = 5V$	60	70		dB	
Thermal Resistance	-	TO-220	Junction to Tab		3.0	3.0	°C/W
			Junction to Ambient		60	60	
		DD Package	Junction to Tab		3.0	3.0	
			Junction to Ambient		60	60	

**Note:** Output Switch tests are performed under pulsed conditions to minimize power dissipation

**Advance Information-** These data sheets contain descriptions of products that are in development. The specifications are based on the engineering calculations, computer simulations and/ or initial prototype evaluation.

**Preliminary Information-** These data sheets contain minimum and maximum specifications that are based on the initial device characterizations. These limits are subject to change upon the completion of the full characterization over the specified temperature and supply voltage ranges.

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