

FEATURES

- Low dropout performance
1.2V max. for EZ1584A
1.3V max. for EZ1584
- Full current rating over line and temperature
- Fast transient response
- $\pm 2\%$ total output regulation over line, load, and temperature
- Adjust pin current max. $90\mu\text{A}$ over temperature
- Fixed/adjustable output voltage
- Line regulation typically 0.015%
- Load regulation typically 0.05%
- TO-220 package

APPLICATIONS

- Pentium Processor™ supplies
- PowerPC™ supplies
- Other 2.5V to 3.6V microprocessor supplies
- Low voltage logic supplies
- Battery-powered circuitry
- Post regulator for switching supply

DESCRIPTION

The EZ1584 Series are high performance positive voltage regulators designed for use in applications requiring low dropout performance at full rated current. Additionally, the EZ1584 Series provides excellent regulation over variations due to changes in line, load and temperature. Outstanding features include low dropout performance at rated current, fast transient response, internal current limiting and thermal shutdown protection of the output device. The EZ1584 Series are three terminal regulators with fixed and adjustable voltage options available in popular packages.

DEVICE SELECTION GUIDE

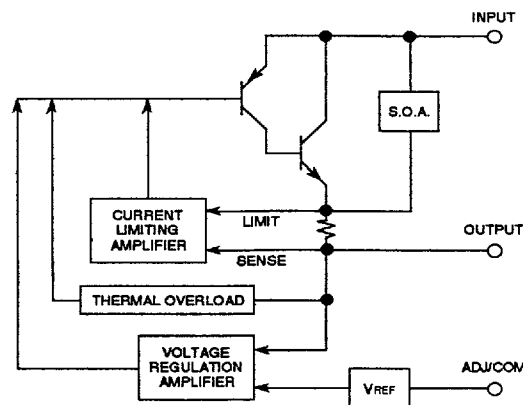
DEVICE	V _{OUT} VOLTS	PACKAGE
EZ1584ACT	1.3 to 4.0	TO-220
EZ1584CT	1.3 to 4.0	
EZ1584CT-1.5	1.5	
EZ1584CT-2.5	2.5	
EZ1584CT-3.3	3.3	

NOTE: Contact factory for additional voltage options.

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Maximum	Units
Input Voltage	V_{IN}	7	V
Power Dissipation	P_D	Internally Limited	W
Thermal Resistance Junction to Case TO-220	θ_{JC}	2	°C/W
Thermal Resistance Junction to Ambient TO-220	θ_{JA}	50	
Operating Junction Temperature Range	T_J	0 to 125	
Storage Temperature Range	T_{STG}	-65 to 150	°C
Lead Temperature (Soldering) 10 Sec.	T_{LEAD}	260	

BLOCK DIAGRAM



ELECTRICAL CHARACTERISTICS

Unless otherwise specified, Adj $V_{IN} = 2.75V$ to $7.0V$ and Adj $I_O = 10mA$ to $7.0A$;
Fixed $V_{IN} = 4.75V$ to $7.0V$ and Fixed $I_O = 0mA$ to $7.0A$

		Test Conditions			Test Limits					
PARAMETER	SYMBOL	V _{IN}	I _O	T _J (⁴)	MIN	TYP	MAX	UNITS		
Output Voltage(¹) Fixed Voltage	V _O	5V	10mA	25	0.99 V _O	V _O	1.01 V _O	V		
				Over Temp.	0.98 V _O		1.02 V _O			
Reference Voltage(¹)	V _{REF}	5V	10mA	25	1.238	1.250	1.262			
Adj Voltage				Over Temp.	1.225		1.275			
Line Regulation(¹) Fixed Model Adj Model	REG _(LINE)			25		0.015	0.2			
			0mA	Over Temp.		0.035				
			10mA							
Load Regulation(¹)	REG _(LOAD)	5V		25		0.05	0.3			
				Over Temp.		0.2	0.4			
Dropout Voltage ΔV _{OUT} , ΔV _{REF} = 1% EZ1584 EZ1584A	V _D			25		1		V		
				Over Temp.						
						1.1	1.3			
						1.0	1.2			
						Current Limit	I _{CL}			7.1
Quiescent Current Fixed Model	I _Q	5V					10	13	mA	
Temperature Coefficient	T _C						0.005		%/°C	
Adjust Pin Current	I _{ADJ}					25	55		μA	
Adjust Pin Current Change	ΔI _{ADJ}					Over Temp.		90		
Temperature Stability	T _S						5V	0.5A		0.2
Minimum Load Current Adj Model	I _O		5V					0.5		%
RMS Output Noise(²)	V _N			25		5	10	mA		
Ripple Rejection Ratio(³)	R _A	5V	7.0A	Over Temp.	60	72		dB		

(1) Low duty cycle pulse testing with Kelvin connections required.

(2) Bandwidth of 10Hz to 10kHz.

(3) 120Hz input ripple (C_{ADJ} for ADJ) = 25 μF .

(4) Over Temp. = over specified operating junction temperature range.