

1.1 Scope.

This specification covers the detail requirements for a pin programmable precision voltage reference.

1.2 Part Number.

The complete part number per Table 1 of this specification is as follows:

Device	Part Number ¹
- 1	AD584S(X)/883B
- 2	AD584T(X)/883B

NOTE

¹See paragraph 1.2.3 for package identifier.

1.2.3 Case Outline.

See Appendix 1 of General Specification ADI-M-1000: package outline:

(X)	Package	Description
H	H-08A	8-Pin Metal Package
E	E-20A	20-Pin LCC

1.3 Absolute Maximum Ratings. ($T_A = +25^\circ\text{C}$ unless otherwise noted)

Input Voltage V_{CC} to Ground	40V
Power Dissipation (25°C)	600mW
Storage Temperature Range	-65°C to $+150^\circ\text{C}$
Lead Temperature Range (Soldering 10sec)	$+300^\circ\text{C}$

1.5 Thermal Characteristics.

Thermal Resistance θ_{JC} =	$40^\circ\text{C}/\text{W}$ for H-08A
θ_{JA} =	$150^\circ\text{C}/\text{W}$ for H-08A
θ_{JC} =	$35^\circ\text{C}/\text{W}$ for E-20A
θ_{JA} =	$120^\circ\text{C}/\text{W}$ for E-20A

AD584—SPECIFICATIONS

Table 1.

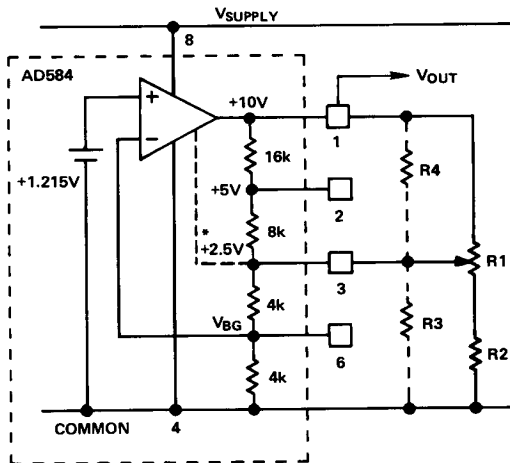
Test	Symbol	Device	Design Limit @ +25°C	Sub Group 1	Sub Group 2, 3	Sub Group 4	Test Condition ¹	Units
Quiescent Current	I _{CC}	–1, 2	1.0	1.0				mA max
Output Voltage Error	V _{OUT1}	–1	30	30				± mV max
		–2	10	30		10		
Output Voltage Error	V _{OUT2}	–1	20	20			7.5V Output	± mV max
		–2	8	20		8		
Output Voltage Error	V _{OUT3}	–1	15	15			5.0V Output	± mV max
		–2	6	15		6		
Output Voltage Error	V _{OUT4}	–1	7.5	7.5			2.5V Output	± mV max
		–2	3.5	7.5		3.5		
Line Regulation	VR _{LINE1}	–1, 2	0.005	0.005	0.010 ²		V _{OUT} = 2.5V, 5.0V, 7.5V, 10.0V, V _{OUT} + 2.5V ≤ V _{CC} < 15V	± %/V max
Line Regulation	VR _{LINE2}	–1, 2	0.002	0.002	0.005 ²		V _{OUT} = 2.5V, 5.0V, 7.5V, 10.0V, 15V ≤ V _{CC} ≤ 30V	± %/V max
Load Regulation	VR _{LOAD1}	–1, 2	50	50	100		I _L = 0 to 5mA	± ppm/mA max
Load Regulation	VR _{LOAD2}	–1, 2	50	50	100		I _L = 0 to 5mA, 7.5V Output	± ppm/mA max
Load Regulation	VR _{LOAD3}	–1, 2	50	50	100		I _L = 0 to 5mA, 5.0V Output	± ppm/mA max
Load Regulation	VR _{LOAD4}	–1, 2	50	50	100		I _L = 0 to 5mA, 2.5V Output	± ppm/mA max
Output Short Circuit Current	I _{OS}	–1, 2	55	55			10V Output Grounded	– mA max
Output Voltage Temperature Coefficient	DV _{OUT1} /dT	–1			30		T _A = 25°C to 125°C	± ppm/°C max
		–2			15		T _A = 25°C to –55°C	
Output Voltage Temperature Coefficient	DV _{OUT2} /dT	–1			30		T _A = 25°C to 125°C	± ppm/°C max
		–2			15		T _A = 25°C to –55°C 7.5V Output	
Output Voltage Temperature Coefficient	DV _{OUT3} /dT	–1			30		T _A = 25°C to 125°C	± ppm/°C max
		–2			15		T _A = 25°C to –55°C 5.0V Output	
Output Voltage Temperature Coefficient	DV _{OUT4} /dT	–1			30		T _A = 25°C to 125°C	± ppm/°C max
		–2			20		T _A = 25°C to –55°C 2.5V Output	
Output Current Source @ 25°C	I _{OUT}		10	10				mA min
Source T _{min} to T _{max}	I _{OUT}		5		5			mA min
Sink T _{min} to T _{max}	I _{OUT}		200					μA min

NOTES

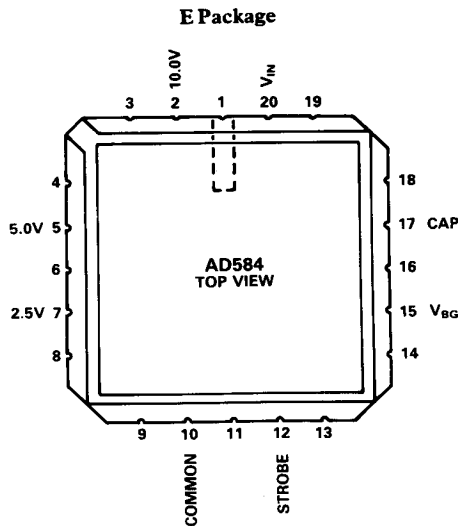
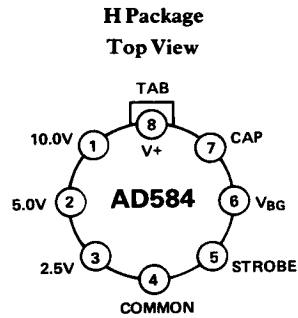
¹V_{CC} = +15V, 10V output, no load unless otherwise indicated.

²10V output only.

3.2.1 Functional Block Diagram and Terminal Assignments.



*THE 2.5V TAP IS USED INTERNALLY AS A BIAS POINT AND SHOULD NOT BE CHANGED BY MORE THAN 100mV IN ANY TRIM CONFIGURATION.



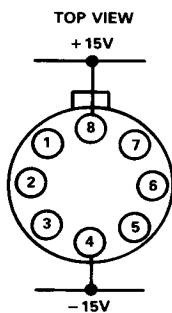
3.2.4 Microcircuit Technology Group.

This microcircuit is covered by technology group (59).

AD584

4.2.1 Life Test/Burn-In Circuit.

Steady state life test is per MIL-STD-883 Method 1005. Burn-in is per MIL-STD-883 Method 1015 test condition (B).



NOTES

1. DECOUPLE ONCE PER BOARD WITH $1\mu\text{F}$, 50V CAPACITORS FROM $\pm 15\text{V}$ TO GROUND.
2. $I_{\text{TYPICAL}} = 0.6\text{mA/DEVICE}$
 $\text{SUPPLY MAXIMUM} = 1.0\text{mA/DEVICE}$.