

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

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Table 1.

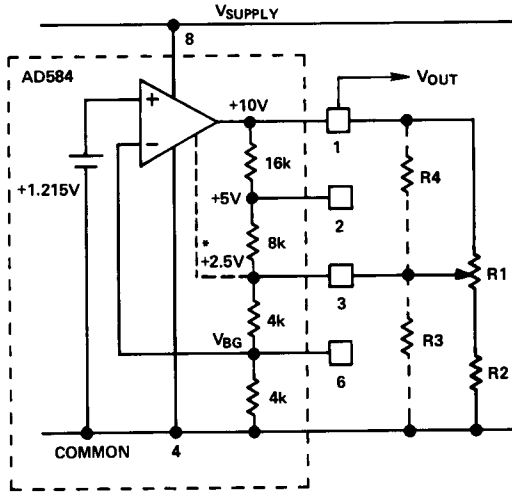
Test	Symbol	Device	Design Limit @ +25°C	Sub Group 1	Sub Group 2, 3	Sub Group 4	Test Condition ¹	Units
Quiescent Current	I _{CC}	-1, 2	1.0	1.0				mA max
Output Voltage Error	V _{OUT1}	-1	30	30				± mV max
		-2	10	30		10		
Output Voltage Error	V _{OUT2}	-1	20	20			7.5V Output	± mV max
		-2	8	20		8		
Output 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 Source T _{min} to T _{max} Sink T _{min} to T _{max}	I _{OUT}		10	10				mA min
	I _{OUT}		5		5			mA min
	I _{OUT}		200					μA min

NOTES

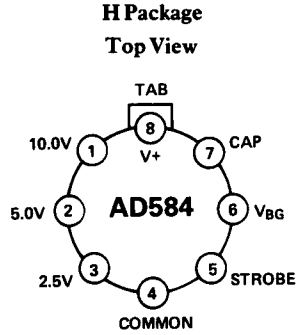
¹V_{CC} = +15V, 10V output, no load unless otherwise indicated.

²10V output only.

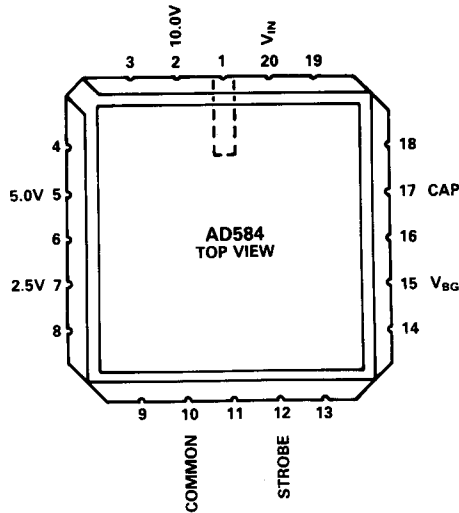
3.2.1 Functional Block Diagram and Terminal Assignments.



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



E Package



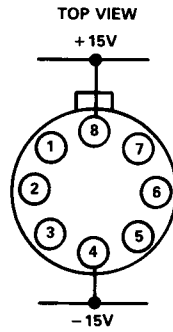
3.2.4 Microcircuit Technology Group.

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 TYPICAL = 0.6mA/DEVICE
SUPPLY MAXIMUM = 1.0mA/DEVICE.