

SMD/883B**AD780****Scope**

This specification covers the detail requirements for a high precision 2.5/3.0 V IC reference. The electrical specifications match the Standard Military Drawing (SMD) 5962-94636 in effect at the release of this data sheet. For a copy of the latest official SMD, contact DESC-ELDS.

Part Number/Case Outline

For case outline dimensions, see Package Information Appendix of General Specification ADI-M-1000. The complete part numbers of these SMD and 883 devices are as follows:

Device Type	SMD Part Number	ADI 883 Part Number	Package Description	Package Designation ADI	Package Designation MIL-STD-1835
01	5962-9463601MPA	AD780SQ/883B	8-Pin Cerdip	Q-8	GDIP1-T8

Absolute Maximum Ratings¹ ($T_A = +25^\circ\text{C}$ unless otherwise noted)

Input Voltage, V_{IN} to Ground	+36 V
Trim Pin to Ground	+36 V
Temp Pin to Ground	+36 V
Power Dissipation	500 mW
Storage Temperature Range	-65°C to $+150^\circ\text{C}$
Lead Temperature (Soldering 10 secs)	$+300^\circ\text{C}$

Recommended Operating Conditioning

Operating Voltage Range, 2.5 V Output	4.0 V to 36 V
Operating Voltage Range, 3.0 V Output	4.5 V to 36 V
Ambient Operating Temperature Range (T_A)	-55°C to $+125^\circ\text{C}$

Thermal Characteristics

Thermal Resistance, Junction-to-Case (θ_{JC}) max	28°C/W
Thermal Resistance, Junction-to-Ambient (θ_{JA}) max	110°C/W

NOTE

¹Permanent damage may occur if any absolute maximum rating is exceeded. Functional operation is not implied, and device reliability may be impaired by exposure to higher-than-recommended voltages for extended periods of time.

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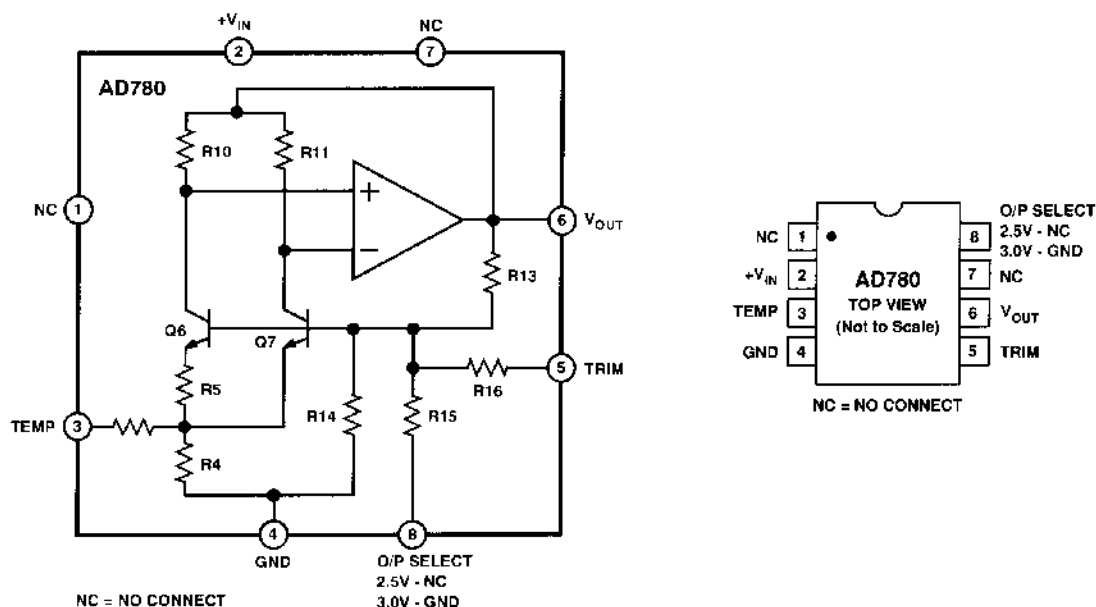
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Table I. Electrical Performance Characteristics

Test	Symbol	Conditions $V_{CC} = +5\text{ V}$, $I_L = 0\text{ mA}$ unless otherwise specified	Group A Subgroup	Device	Limits		Units
					Min	Max	
Quiescent Current	I_{CC}	2.5 V/3.0 V	1, 2, 3	01		1.3	mA
Output Voltage Error	V_{OUT}	2.5 V/3.0 V	1	01		5	mV
Line Regulation	VR_{LINE}	2.5 V Output, $4\text{ V} < +V_{IN} < 36\text{ V}$	1, 2, 3	01		10	$\mu\text{V/V}$
		3.0 V Output, $4.5\text{ V} < -V_{IN} < 36\text{ V}$					
Load Regulation, Sourcing	VR_{LOAD}	$I_L = 0\text{ mA}$ to 10 mA , Series Mode	1	01		50	$\mu\text{V/mA}$
			2, 3			75	
Load Regulation, Sinking	VR_{LOAD}	$I_L = -10\text{ mA}$ to 0 mA , Series Mode	1	01		75	$\mu\text{V/mA}$
			2, 3			150	
Minimum Shunt Current			1	01		1	mA
Load Regulation, Shunt		$1 < I_{shunt} < 10\text{ mA}$	1	01		75	$\mu\text{V/mA}$
			2, 3			150	
Output Voltage Temperature Coefficient	DV_{OUT}/dT		2, 3	01		20	ppm/ $^{\circ}\text{C}$
Voltage Output-Temperature Pin			1	01	500	620	mV
Short Circuit Current	I_{OS}	To Ground, $T_A = +25^{\circ}\text{C}$	—	01	30 typical		mA
Trim Range			1, 2, 3	01	4		$\pm\%$

Functional Block Diagram and Terminal Assignments



Microcircuit Technology Group

This microcircuit is covered by technology group (59).

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).

