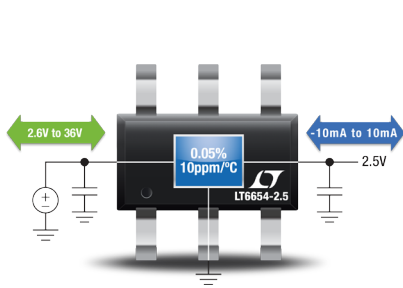
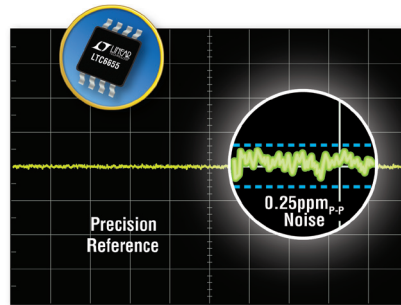


# Precision Voltage References



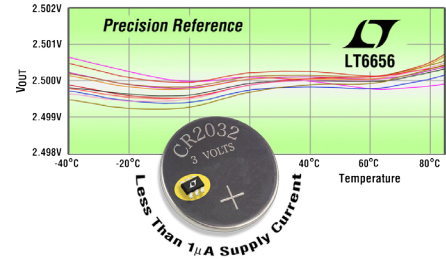
## LT®6654

- 0.05%, 10ppm/°C Max
- Wide Supply Range to 36V
- Low Noise: 1.6ppm<sub>p-p</sub> (0.1Hz to 10Hz)
- Sinks and Sources  $\pm 10\text{mA}$
- Fully Specified from  $-55^{\circ}\text{C}$  to  $125^{\circ}\text{C}$
- SOT-23 Package



## LTC®6655

- Ultralow Noise: 0.25ppm<sub>p-p</sub> (0.1Hz to 10Hz)
- 0.025%, 2ppm/°C Max
- 100% Tested at  $-40^{\circ}$ ,  $25^{\circ}\text{C}$ , and  $125^{\circ}\text{C}$
- $V_s$  Up to 13.2V
- Low Power Shutdown:  $<20\mu\text{A}$
- 8-Lead MSOP Package

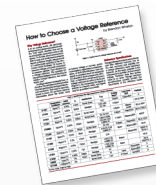


## LT6656

- Ultralow Supply Current:  $0.85\mu\text{A}$
- 0.05%, 10ppm/°C Max
- 10mV Dropout Voltage
- Fully Specified from  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$
- $V_s$  Up to 18V
- Low Power Shutdown:  $<20\mu\text{A}$
- Reverse Input/Output Protection
- SOT-23 Package

1.25V • 2.048V • 2.5V • 3V • 3.3V • 4.096V • 5V

A voltage reference functions as an independent standard in measurement and detection circuits, and often determines the accuracy of the entire electronic system. For help in understanding which factors will impact your design, read "How To Choose a Voltage Reference" at [linear.com/vrefselect](http://linear.com/vrefselect). This article discusses the most critical reference specifications and how they impact overall accuracy. It also covers the differences between bandgap and Zener architectures as well as series vs shunt references.



[www.linear.com/vrefselect](http://www.linear.com/vrefselect)

Voltage reference noise frequently defines the measurement limits in instrumentation systems. Noise ultimately translates into quantization uncertainty in A to D converters, introducing jitter in applications such as scales, inertial navigation systems, infrared thermography, DVMS and medical imaging apparatus. Application Note 124 offers a detailed discussion on how to measure noise in precision voltage references.



[www.linear.com/an124](http://www.linear.com/an124)



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	Reference Family	Initial Accuracy	Temperature Drift (Max) ppm/°C	0.1Hz - 10Hz Noise ppm	Output Current mA	$I_{SHUNT}$ mA	Dropout Headroom V	Package	Temperature Grades	1.25V	2.048V	2.5V	3V	3.3V	4.096V	4.5V	5V	7V	10V
Series	LTC6655B	0.025%	2	0.25	±10	7	0.5	MS-8	H	•	•		•	•	•		•		
	LT1461A	0.04%	3	8	50	0.05	0.3	SO-8	C, I				•				•		
	LT1027B	0.05%	2	0.6	-10 to +15	3.1	3	DIP-8	C								•		
	LT1027C	0.05%	3	0.6	-10 to +15	3.1	3	DIP-8 SO-8	C								•		
	LT1019A	0.05%	5	2.5	±10	1	1.1	DIP-8 SO-8	C, I			•				•	•		•
	LT1031B	0.05%	5	0.6	±10	1.7	1	TO-39	C, M										•
	LT1236A	0.05%	5	0.6	±10	1.2	2.2	DIP-8 SO-8	C, I								•		•
	LTC6652A	0.05%	5	2.8	±5	0.56	0.3	MS-8	H	•	•	•	•	•	•		•		
	LTC6655C	0.05%	5	0.25	±10	7	0.5	MS-8	H	•	•	•	•	•	•		•		
	LT1027D	0.05%	5	0.6	-10 to +15	2.7	3	DIP-8 SO-8	C								•		
	LT6654A	0.05%	10	0.8 to 2.2	±10	0.6	0.1	SOT-23	H, M	•	•	•	•	•	•		•		
	LT6656A	0.05%	10	24	-0.1 to 10	0.001	0.01	SOT-23, DFN	C, I	•	•	•	•	•	•		•		
	LT1790A	0.05%	10	16	-3 to 5	0.06	0.1	SOT-23	C, I	•	•	•	•	•	•		•		
	LT1021C	0.05%	20	0.6	±10	1.2	2.2	TO-5 DIP-8	C, I, M								•		•
	LT1461B	0.06%	7	8	50	0.05	0.3	SO-8	C, I			•	•	•	•		•		
	LT1460A	0.075%	10	4	-1 to 20	0.175	0.9	DIP-8 SO-8	C			•					•		•
	LT1461C	0.08%	12	8	50	0.05	0.3	SO-8	C, I			•	•	•	•		•		
	LT1027E	0.10%	7.5	0.6	-10 to +15	2.7	3	DIP-8 SO-8	C								•		
	LT1236B	0.10%	10	0.6	±10	1.2	2.2	DIP-8 SO-8	C, I								•		•
	LTC6652B	0.10%	10	2.1	±5	0.56	0.3	MS-8	H	•	•	•	•	•	•		•		
	LT1460B	0.10%	10	4	-1 to 20	0.175	0.9	DIP-8 SO-8	I			•					•		•
	LT1031C	0.10%	15	0.6	±10	1.7	1	TO-39	C								•		•
	LT1236C	0.10%	15	0.6	±10	1.2	2.2	DIP-8 SO-8	C, I								•		•
	LT1460C	0.10%	15	4	-1 to 20	0.175	0.9	MS-8	C			•					•		•
	LT6654B	0.1%	20	0.8 to 2.2	±10	0.6	0.1	SOT-23	H, M	•	•	•	•	•	•		•		
	LT6656B	0.10%	20	24	-0.1 to 10	0.001	0.01	SOT-23, DFN	C, I	•	•	•	•	•	•		•		
	LT1460D	0.10%	20	4	-1 to 20	0.175	0.9	DIP-8 SO-8	C			•					•		•
	LT1790B	0.10%	25	16	-3 to 5	0.06	0.1	SOT-23	C, I	•	•	•	•	•	•		•		
	LT1460E	0.125%	20	4	-1 to 20	0.175	0.9	DIP-8 SO-8	I			•					•		•
	LT1461D	0.15%	20	8	10	0.05	0.3	SO-8	H			•	•	•	•		•		
	LT1460F	0.15%	25	4	-1 to 20	0.175	0.9	MS-8	C			•					•		•
	LTC1798	0.15%	40	8	-2 to 10	0.0065	0.1	SO-8	C			•	•		•		•		
	LTC1258	0.15%	40	8	-2 to 10	0.0065	0.1	MS-8	C			•	•		•		•		
	LT1019	0.20%	20	2.5	±10	1.2	1.1	DIP-8 SO-8	C, I							•	•		•
	LT1460H	0.20%	20	4	-1 to 20	0.175	0.9	SOT-23	C			•	•	•			•		•
	LT1460L	0.20%	20	4	-1 to 20	0.175	0.9	SO-8	I, H			•					•		
	LT6660H	0.20%	20	4	-1 to 20	0.2	0.9	2 x 2mm DFN	C			•	•	•			•		•
	LT1031D	0.20%	25	0.6	±10	1.7	1	TO-39	C, M								•		•
	LT1460M	0.20%	50	4	-1 to 20	0.175	0.9	SO-8	H			•					•		
	LT1460G	0.25%	25	4	-1 to 20	0.175	0.9	TO-92	C, I			•					•		•
	LT1460J	0.40%	20	4	-1 to 20	0.175	0.9	SOT-23	C			•	•	•			•		•
	LT6660J	0.40%	20	4	-1 to 20	0.2	0.9	2 x 2mm DFN	C			•	•	•			•		•
	LT6650	0.5%	30 Typ	50	±0.2	0.011	0.1	SOT-23	C, I, H						Adjustable				
	LT1460K	0.5%	50	4	-1 to 20	0.175	0.9	SOT-23	C			•	•	•			•		•
	LT6660K	0.5%	50	4	-1 to 20	0.2	0.9	2 x 2mm DFN	C			•	•	•			•		•
	LT1021B	1%	5	0.6	±10	1.2	2.2	TO-5 DIP-8	C, M								•		•
	LT1021D	1%	20	0.6	±10	1.2	2.2	SO-8 DIP-8	C, I								•	•	•
	LT580xH	0.4%	10	4	10	1	2	TO-52				•							
	LT581xH	0.3%	10	1	5	1	3	TO-39	-55°C to 200°C										•
	LT582xH	0.3%	10		5	1	3	TO-39									•		
Shunt	LT1389A	0.05%	10	20	Shunt	0.006 to 2	N/A	SO-8	C	•									
	LT1634A	0.05%	10	7	Shunt	0.008 to 20	N/A	SO-8	C, I	•		•			•		•		
	LT1389B	0.05%	20	20	Shunt	0.006 to 2	N/A	SO-8	C	•		•							
	LT1634B	0.05%	25	7	Shunt	0.008 to 20	N/A	SO-8 MS-8	C, I	•		•			•		•		
	LT1389B	0.075%	50	20	Shunt	0.006 to 2	N/A	SO-8	C						•		•		
	LT1029A	0.2%	20		Shunt	0.6 to 10	N/A	TO-92	C								•		
	LT1009	0.2%	25		Shunt	0.4 to 10	N/A	SO-8 MS-8 TO-92	C, I			•							
	LT1634C	0.2%	25	7	Shunt	0.007 to 30	N/A	TO-92	C	•		•			•		•		
	LT1004	0.3%	20 typ		Shunt	0.01 to 20	N/A	SO-8 TO-92	C, I	•		•							
	LTC1431	0.4%	30 Typ	10	Shunt	1 to 100	N/A	DIP-8 TO-92	C, I						Adjustable				
	LT1029	1%	34		Shunt	0.6 to 10	N/A	TO-92	C								•		
	LT1034B	1.2%	20	2.4	Shunt	0.02 to 20	N/A	TO-92	C, I	•		•							
	LT1034	1.2%	40	2.4	Shunt	0.02 to 20	N/A	SO-8 TO-92	C, I	•	•	•							
	LTZ1000	4%	0.05	0.17	Shunt	N/A	N/A	TO-5	M									•	
	LM399A	5%	1	1.4	Shunt	N/A	N/A	TO-46	C									•	
	LM399	5%	2	1.4	Shunt	N/A	N/A	TO-46	C									•	

\*Some parameters vary between package, voltage and temperature versions. For a complete list of products and full specifications visit [www.linear.com](http://www.linear.com)

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