

# Voltage Reference Selection Guide

## Commercial 0°C to 70°C

VOLTAGE $V_Z$ (V)	VOLTAGE TOLERANCE MAXIMUM $T_A = 25^\circ\text{C}$	PART NUMBER	TEMPERATURE DRIFT, ppm/°C OR mV CHANGE	MIL/IND TEMP	OPERATING CURRENT RANGE (OR SUPPLY CURRENT)	PACKAGE TYPE	IMPORTANT FEATURES			
1.235	$\pm 0.32\%$ $\pm 1\%$	LT1004-1.2 LT1034B-1.2	20ppm (typ) 20ppm (max)	M, I M, I	10 $\mu\text{A}$ to 20mA 20 $\mu\text{A}$ to 20mA	H, S, Z H, S, Z	Micropower Low TC Micropower with 7V Aux Reference			
	$\pm 1\%$	LT1034-1.2	40ppm (max)	M, I	20 $\mu\text{A}$ to 20mA	H, S, Z	Low TC Micropower with 7V Aux Reference			
	$\pm 2\%$ $\pm 1\%$	LM385-1.2 LM385B-1.2	20ppm (typ) 20ppm (typ)	M, I M	15 $\mu\text{A}$ to 20mA 15 $\mu\text{A}$ to 20mA	H, Z H, Z	Micropower Micropower			
2.5	$\pm 0.8\%$ $\pm 0.2\%$ $\pm 0.4\%$ $\pm 0.05\%$ $\pm 0.2\%$ $\pm 1\%$	LT1004-2.5 LT1009 LT1009S8 LT1019A-2.5 LT1019-2.5 LT1034B-2.5	20ppm (typ) 6mV (max) 25ppm (max) 5ppm (max) 20ppm (max) 20ppm (max)	M, I M, I M, I M M, I M, I	20 $\mu\text{A}$ to 20mA 400 $\mu\text{A}$ to 10mA 400 $\mu\text{A}$ to 20mA 1.0mA 1.2mA 20 $\mu\text{A}$ to 20mA	H, S, Z H, Z S H, N H, N, S H, S, Z	Micropower Precision Precision Precision Bandgap Precision Bandgap Low TC Micropower with 7V Aux Reference			
	$\pm 1\%$	LT1034-2.5	40ppm (max)	M, I	20 $\mu\text{A}$ to 20mA	H, S, Z	Low TC Micropower with 7V Aux Reference			
	$\pm 4\%$ $\pm 2\%$ $\pm 3\%$	LM336-2.5 LM336B-2.5 LM385-2.5	6mV (max) 6mV (max) 20ppm (typ)	M M M, I	400 $\mu\text{A}$ to 10mA 400 $\mu\text{A}$ to 10mA 20 $\mu\text{A}$ to 20mA	H, Z H, Z H, Z	General Purpose General Purpose Micropower			
	$\pm 1.5\%$ $\pm 3\%$ $\pm 1\%$ $\pm 0.4\%$ $\pm 0.4\%$	LM385B-2.5 LT580J LT580K/K LT580L/U LT580M	20ppm (typ) 85ppm (max) 40ppm (max) 25ppm (max) 10ppm (max)	M M M M M	20 $\mu\text{A}$ to 20mA 1.5mA 1.5mA 1.5mA 1.5mA	H, Z H H H H	Micropower 3 Terminal Low Drift 3 Terminal Low Drift 3 Terminal Low Drift 3 Terminal Low Drift			
	4.5	$\pm 0.05\%$ $\pm 0.2\%$	LT1019A-4.5 LT1019-4.5	5ppm (max) 20ppm (max)	M M, I	1.2mA 1.2mA	H, N H, N, S	Precision Bandgap Precision Bandgap		
		5.0	$\pm 0.05\%$ $\pm 0.2\%$ $\pm 1\%$ $\pm 0.05\%$ $\pm 1\%$ $\pm 0.02\%$ $\pm 0.05\%$ $\pm 0.05\%$ $\pm 0.05\%$ $\pm 0.1\%$ $\pm 0.2\%$ $\pm 1\%$ $\pm 1\%$ $\pm 2\%$ $\pm 0.3\%$ $\pm 0.5\%$	LT1019A-5 LT1019-5 LT1021B-5 LT1021C-5 LT1021D-5 LT1027A LT1027B LT1027C LT1027D LT1027E LT1029A LT1029 REF02C REF02D REF02E/A REF02H	5ppm (max) 20ppm (max) 5ppm (max) 20ppm (max) 20ppm (max) 2ppm (max) 2ppm (max) 3ppm (max) 5ppm (max) 7.5ppm (max) 20ppm (max) 34ppm (max) 65ppm (max) 250ppm (max) 8.5ppm (max) 25ppm (max)	M M, I M, I M, I M, I M M M M M M M M M M M	1.2mA 1.2mA 1.2mA 1.2mA 1.2mA 2mA 2mA 2mA 2mA 2mA 700 $\mu\text{A}$ to 10mA 700 $\mu\text{A}$ to 10mA 1.6mA 2.0mA 1.4mA 1.4mA	H, N H, N, S H, N H, N H, J, N, S H H, N H, N N, H, S N, H, S H, Z H, Z H, J, N H, J, N H, J, N H, J, N	Precision Bandgap Precision Bandgap Very Low Drift Very Tight Initial Tolerance Low Cost, High Performance Precision, Enhanced Dynamics Precision, Enhanced Dynamics Precision, Enhanced Dynamics Precision, Enhanced Dynamics Precision Bandgap Precision Bandgap Precision Bandgap Bandgap Precision Bandgap Precision Bandgap	
	6.9		$\pm 3\%$ $\pm 5\%$ $\pm 5\%$ $\pm 5\%$ $\pm 4\%$	LM329A LM329B LM329C LM329D LTZ1000	10ppm (max) 20ppm (max) 50ppm (max) 100ppm (max) 0.1ppm	M M M M	600 $\mu\text{A}$ to 15mA 600 $\mu\text{A}$ to 15mA 600 $\mu\text{A}$ to 15mA 600 $\mu\text{A}$ to 15mA 4mA	H, Z H, Z H, Z H, Z H	Low Drift Low Drift General Purpose General Purpose Ultra Low Drift, 2ppm Long Term Stability*	
			6.95	$\pm 5\%$ $\pm 5\%$	LM399 LM399A	2ppm (max) 1ppm (max)	M M	500 $\mu\text{A}$ to 10mA 500 $\mu\text{A}$ to 10mA	H H	Ultra Low Drift Ultra Low Drift
				7.0	$\pm 0.7\%$ $\pm 0.7\%$	LT1021B-7 LT1021D-7	5ppm (max) 20ppm (max)	M M	1.0mA 1.0mA	H, N H, N, S
			10.0		$\pm 0.05\%$ $\pm 0.2\%$ $\pm 0.5\%$ $\pm 0.05\%$ $\pm 0.5\%$ $\pm 0.05\%$ $\pm 0.1\%$ $\pm 0.2\%$ $\pm 0.3\%$ $\pm 0.1\%$ $\pm 0.05\%$ $\pm 1\%$ $\pm 0.3\%$ $\pm 0.5\%$	LT1019A-10 LT1019-10 LT1021B-10 LT1021C-10 LT1021D-10 LT1031B LT1031C LT1031D LT581J/S LT581K/T LT581L/U REF01C REF01E/A REF01H	5ppm (max) 20ppm (max) 5ppm (max) 20ppm (max) 20ppm (max) 5ppm (max) 15ppm (max) 25ppm (max) 30ppm (max) 15ppm (max) 5ppm (max) 65ppm (max) 8.5ppm (max) 25ppm (max)	M M, I M, I M, I M, I M M M M M M M M M	1.2mA 1.2mA 1.7mA 1.7mA 1.7mA 1.7mA 1.7mA 1.7mA 1.0mA 1.0mA 1.0mA 1.6mA 1.4mA 1.4mA	H, N H, N, S H, N H, N H, N, S H H H H H H H, J, N H, J, N H, J, N

\*LTZ1000 requires external control and biasing circuits.