

**FEATURES**

- **Very Tight Initial Voltage Tolerance**
  - 1004-1.2.....  $\pm 5\text{mV}$
  - 1004-2.5.....  $\pm 10\text{mV}$
- **Very Low Operating Current**
  - 1004-1.2.....  $10\mu\text{A}$
  - 1004-2.5.....  $20\mu\text{A}$
- **Wide Operating Current Range** .....  $10\mu\text{A}$  to  $20\text{mA}$
- **Very Low Dynamic Impedence**.....  $0.6$  Max.

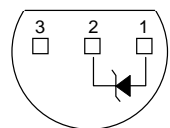
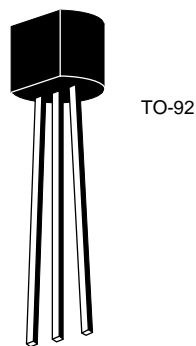
**PRODUCT DESCRIPTION**

The CA1004 is a two-terminal, temperature compensated, micropower band-gap voltage reference, which provides a fixed voltage for a wide range of input currents ( $10\mu\text{A}$  to  $20\text{mA}$ ). The high stability of the device is primarily the result of the low temperature coefficient Thin Film Resistor process and the tight output voltage tolerance is obtained by resistor Laser trimming at the wafer level. This gives the benefit of eliminating the need of external voltage adjustment.

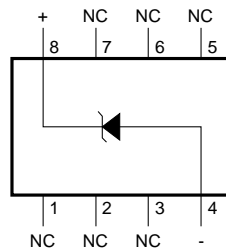
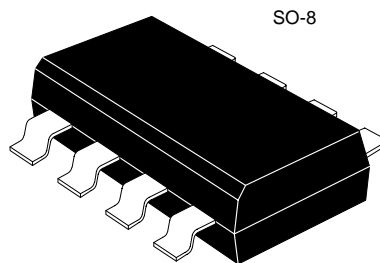
**ORDERING INFORMATION**

Part	Package	Max Tempco (ppm/ $^{\circ}\text{C}$ )	Temp Range
CA1004N1 (1.2)	TO-92	100	$0^{\circ}\text{C}$ to $+70^{\circ}\text{C}$
CA1004BY1 (1.2)	SOIC	100	$-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$
CA1004N2 (2.5)	TO-92	100	$0^{\circ}\text{C}$ to $+70^{\circ}\text{C}$
CA1004BY2 (2.5)	SOIC	100	$-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$

**PIN CONFIGURATIONS**



TO-92 (N-SUFFIX)  
BOTTOM VIEW



SO PACKAGE  
(Y-SUFFIX)  
BOTTOM VIEW

**ABSOLUTE MAXIMUM RATINGS**

Forward Current . . . . . 10mA  
 Reverse Current . . . . . 30mA  
 Operating Temperature Range  
     TO-92 . . . . . 0°C to +70°C  
     SOIC . . . . . 40°C to +85°C

Storage Temperature Range  
     TO-92 . . . . . -65°C to +150°C  
     SOIC . . . . . -65°C to +150°C  
 Lead Temperature (10 sec.) . . . . . +300°C

**SPECIFICATIONS:** At  $I_{in} = 100\mu A$  and  $T_A = +25^\circ C$  unless otherwise specified.

PARAMETERS	CA1004			UNITS	CONDITIONS
	MIN	TYP	MAX		
Output Voltage	1.235 2.480	1.25 2.500	1.265 2.520	V	1004-1, 2 1004-2, 5
Min Operating Current			10 20	$\mu A$	1004-1, 2 1004-2, 5
Output Voltage Change With Current			2.0 20	mV	$10\mu A \leq I_{in} \leq 1mA$ $1mA \leq I_{in} \leq 20mA$
Temperature Coefficient			100	ppm/ $^\circ C$	
Dynamic Impedence			1.0	$\Omega$	
Wide Band Noise		60		$\mu V$	10Hz f 10KHz
Long Term Stability		20		ppm/KHr	$T_A = 25^\circ C \pm .1^\circ C$