



## Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Pulse Voltage From V+ to V- (50ms)	$V_{I(P)}$	50	VPEAK
Continuous Voltage from V+ to V-	$V_I$	40	V
Input-Output Voltage Differential	$V_I - V_O$	40	V
Maximum Output Current	$I_O$	150	mA
Differential Input Voltage	$V_{ID}$	$\pm 5$	V
Voltage Between Non-Inverting Input and V-	$V_{IE}$	8	V
Current From VZ	$I_Z$	25	mA
Current From VREF	$I_{REF}$	15	mA
Power Dissipation	PD	1000	mW
Operating Temperature Range	$T_{OPR}$	0 ~ +70	°C
Storage Temperature Range	$T_{STG}$	-65 ~ +150	°C

## Electrical Characteristics

(Unless otherwise specified,  $T_A = 25^\circ\text{C}$ ,  $V_{IN} = V^+ = V_C = 12\text{V}$ ,  $V^- = 0$ ,  $V_{OUT} = 5\text{V}$ ,  $I_L = 1\text{mA}$ ,  $R_{SC} = 0$ ,  $C_I = 100\text{pF}$ ,  $C_{REF} = 0$  and divider impedance as seen by error amplifier  $\leq 10\text{K}\Omega$  connected as shown in figure 1)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Line Regulation	$\Delta V_O$	$V_I = 12\text{V to } 15\text{V}$ $V_I = 12\text{V to } 40\text{V}$	-	0.01 0.1	0.1 0.5	%
		$T_{MIN} \leq T_A \leq T_{MAX}$ $V_I = 12\text{V to } 15\text{V}$	-	-	0.3	
Load Regulation	$\Delta V_O$	$I_O = 1\text{mA to } 50\text{mA}$	-	0.03	0.2	%
		$T_{MIN} \leq T \leq T_{MAX}$ $I_O = 1\text{ to } 50\text{mA}$	-	-	0.6	
Ripple Rejection	dB	$f = 100\text{kHz to } 10\text{kHz}, C_{REF} = 0$	-	74	-	dB
		$f = 100\text{kHz to } 10\text{kHz}, C_{REF} = 5\mu\text{F}$	-	86	-	
Average Temperature Coefficient of Output Voltage	$\Delta V_O / \Delta T$	$T_{MIN} \leq T \leq T_{MAX}$	-	0.003	0.015	%/°C
Short Circuit Current Limit	$I_{SC}$	$R_{SC} = 10\Omega, V_O = 0$	-	65	-	mA
Reference Voltage	$V_{REF}$	-	6.80	7.15	7.50	V
Output Noise Voltage	$V_N$	$f = 100\text{kHz to } 10\text{kHz}, C_{REF} = 0$	-	20	-	$\mu\text{Vms}$
		$f = 100\text{kHz to } 10\text{kHz}, C_{REF} = 5\mu\text{F}$	-	2.5	-	
Long-term Stability	ST	-	-	0.1	-	%/ 1000HR
Standby Current Drain	$I_D$	$I_L = 0, V_I = 30\text{V}$	-	2.0	4.0	mA
Input Voltage Range	$V_I$	-	9.5	-	40	V
Output Voltage Range	$V_O$	-	2.0	-	37	V
Input-Output Voltage Differential	$V_D$	-	3.0	-	38	V

### Notes:

- 1.Line and load regulation specifications are given for the condition of constant chip temperature.
- 2.Temperature drifts must be taken into account separately for hit dissipation conditions.

## Typical Application

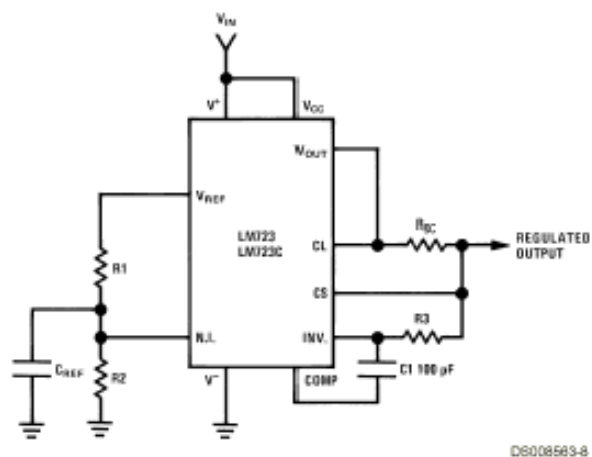


Figure 1. Basic Low Voltage Regulator  
(V<sub>OUT</sub> = 2 to 7Volts)

**Note:**  $R_3 = \frac{R_1 R_2}{R_1 + R_2}$  for minimum temperature drift

## Typical Performance

Regulated Output Voltage 5V

Line regulation (  $\Delta V_{IN} = 3V$  ) 0.5mV

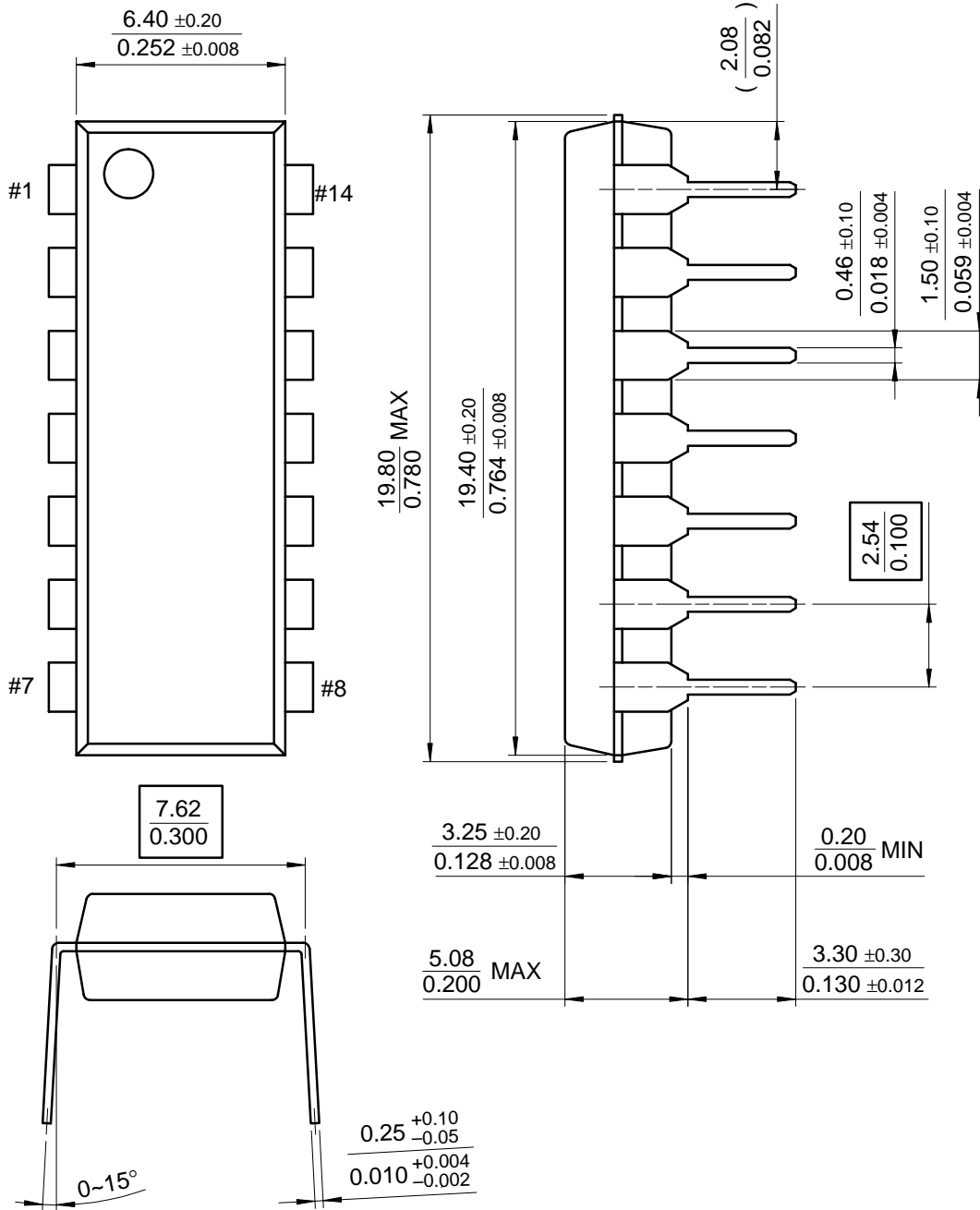
Load Regulation (  $\Delta V_L = 50V$  ) 1.5mV

# Mechanical Dimensions

Package

Dimensions in millimeters

## 14-DIP

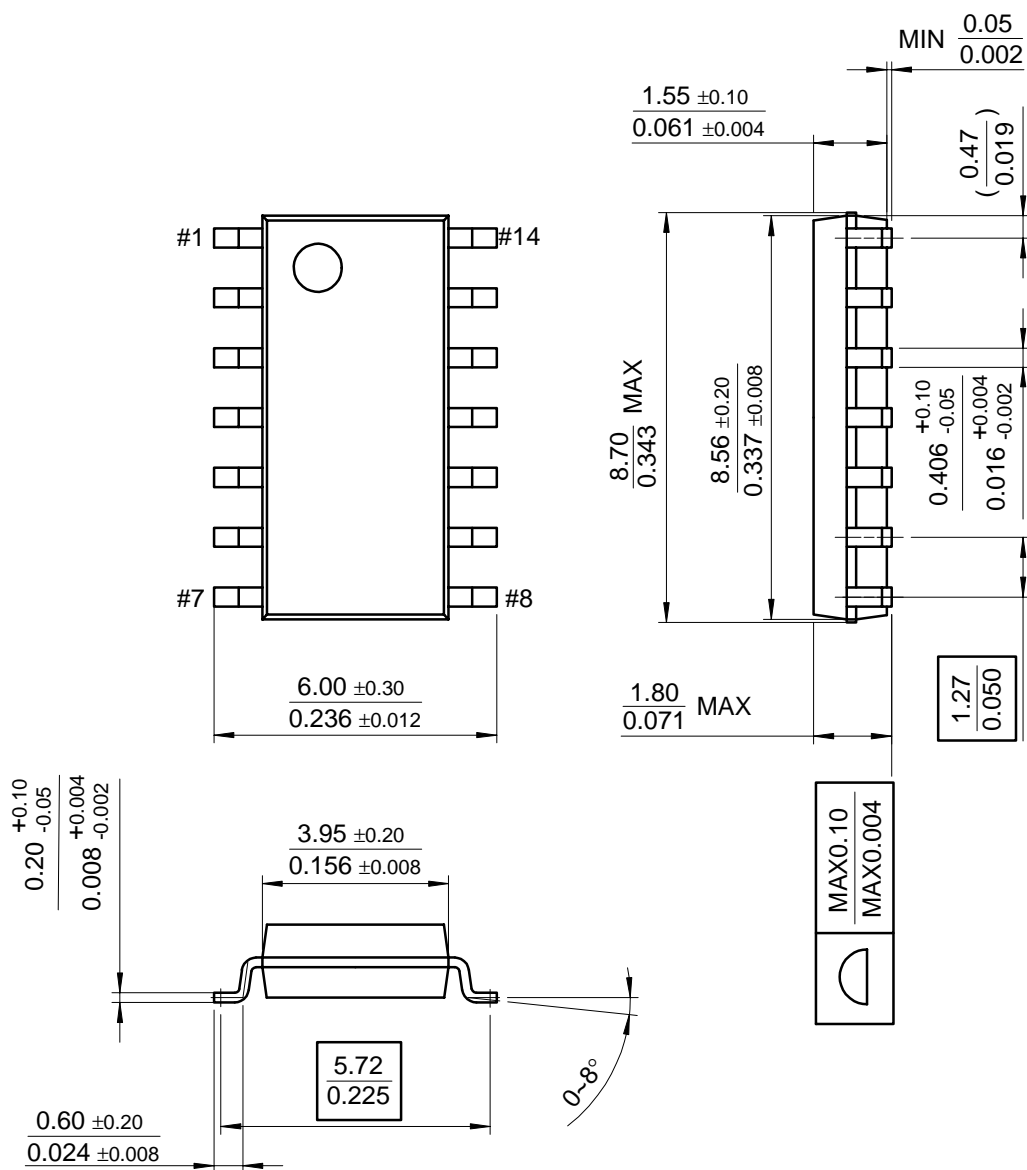


# Mechanical Dimensions (Continued)

Package

Dimensions in millimeters

## 14-SOP



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## Ordering Information

Product Number	Package	Operating Temperature
KA723	14-DIP	0 ~ +70°C
KA723D	14-SOP	

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