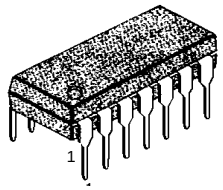
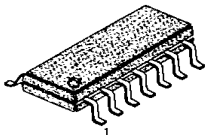
PRECISION VOLTAGE REGULATOR

The KA723/I are monolithic integrated Circuit voltage regulators featuring high ripple rejection, excellent output and load regulation, excellent temperature stability, and low standby current. The KA723/I are also useful in a wide range of other applications such as a shunt regulator, a current regulator or a temperature controller. The KA723 is characteristic for operation on from 0℃ to 70℃, and the KA723I from -25℃ to +85℃.

14 DIP



14 SOP



FEATURES

- Positive or Negative Supply Operation.
- 0.01% line and load regulation
- Output voltage adjustable from 2 to 37 volts.
- Output current to 150mA without external pass transistor

BLOCK DIAGRAM

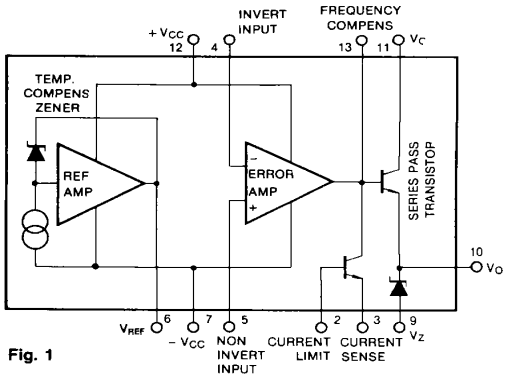


Fig. 1

ORDERING INFORMATION

Device	Package	Operating Temperature
KA723	14 DIP	0 ~ +70℃
KA723D	14 SOP	
KA723I	14 DIP	-25 ~ +85℃
KA723ID	14 SOP	

SCHEMATIC DIAGRAM

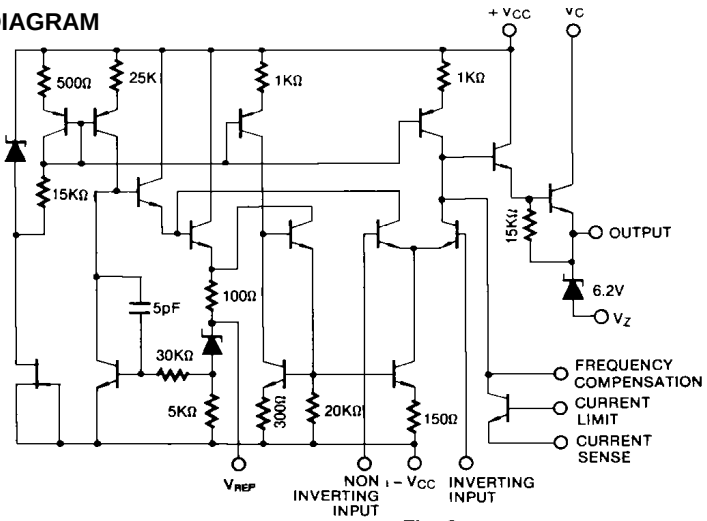


Fig. 2

ABSOLUTE MAXIMUM RATINGS

Characteristic		Symbol	Value	Unit
Pulse Voltage from V + to V - (50ms)		$V_{I(P)}$	50	V_{PEAK}
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}	±5	V
Voltage Between Non-Inverting Input and V —		V_{IE}	8	V
Current from V_Z		I_Z	25	mA
Current from V_{REF}		I_{REF}	15	mA
Power Dissipation		P_D	1000	m/W
Operating Temperature Range	KA723 KA723I	T_{OPR}	0 ~ +70 -25 ~ +85	℃ ℃
Storage Temperature Range		T_{STG}	-65 ~ + 150	℃

ELECTRICAL CHARACTERISTICS

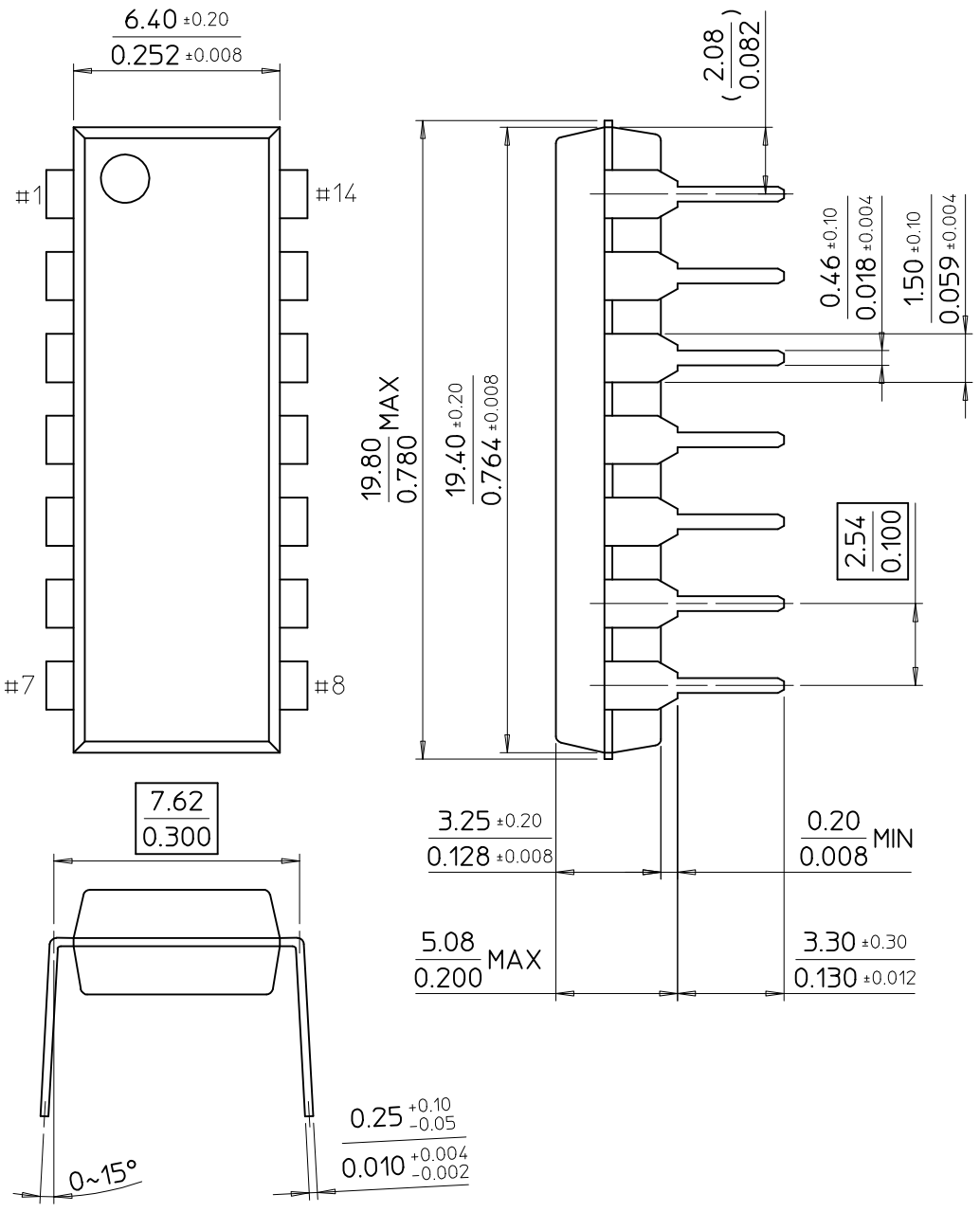
(unless otherwise specified, T_A = 25,℃, $V_I = V_{CC}$ = 12V, V_O = + 5V, I_L =1 .0mA, R_{SC} = 0, C_I = 100pF, C_{REF}=0 and devider impedance as seen by error Amplifier≤ 10KΩ connected as shown in figure 3)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Line Regulation	ΔV_O	V_I = 12V to 15V		0.01	0.1	%
		V_I = 12V to 40V		0.1	0.5	
		$T_{MIN} \leq T_A \leq T_{MAX}$ V_I = 12V to 15V			0.3	
Load Regulation	ΔV_O	I_O = 1mA to 50mA		0.03	0.2	%
		$T_{MIN} \leq T \leq T_{MAX}$ I_O = 1 to 50mA			0.6	
Ripple Rejection	RR	f = 100Hz to 10KHz,C_{REF} =0		74		dB
		f = 100Hz to 10KHz,C_{REF} =5μF		86		
Average Temperature Coefficient of Output Voltage	$\Delta V_O/\Delta T$	$T_{MIN} \leq T \leq T_{MAX}$		0.003	0.015	%/℃
Short Circuit Current Limit	I_{SC}	R_{SC} = 10Ω, V_O = 0		65		mA
Reference Voltage	V_{REF}		6.80	7.15	7.50	V
Output Noise Voltage	V_N	f = 100Hz to 10KHz, C_{REF} = 0		20		μV_{rms}
		f = 100Hz to 10KHz, C_{REF}=5μF		2.5		
Long-term Stability	ST			0.1		%/ 1000HR
Standby Current Drain	I_D	I_L = 0, V_I = 30V		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

* Note: T_{MIN} = 0℃ for KA723 T_{MAX} = 70℃ for KA723
= -25℃ for KA723I = 85℃ for KA723I

14–DIP–300

Dimensions in Milimeters/inches



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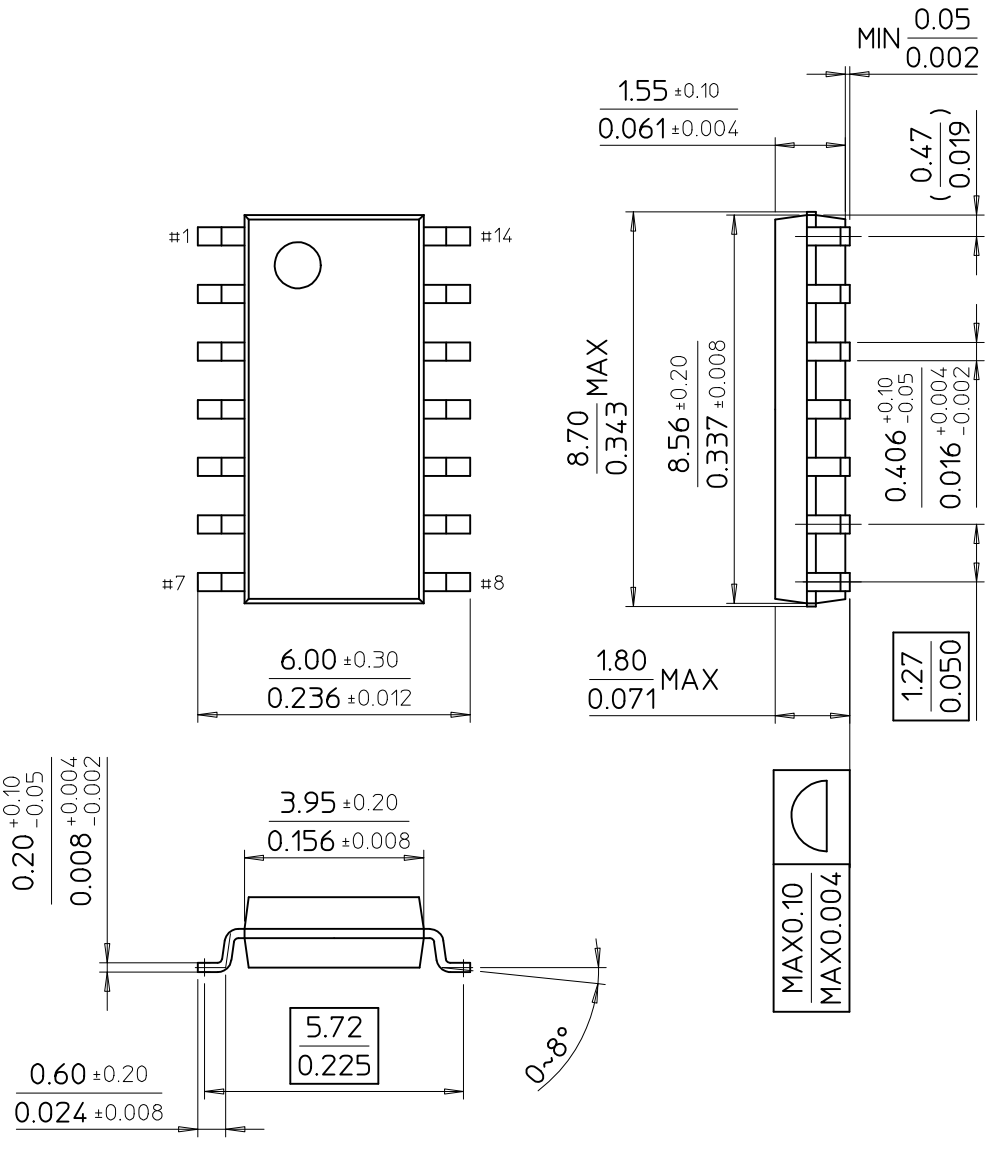
14–SOP–225B

Dimensions in Milimeters/inches



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