

KA723/I

PRECISION VOLTAGE REGULATOR

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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°C to 70°C, and the KA723I from -25°C to +85°C.

FEATURES

- Positive or Negative Supply Operation.
- Output voltage adjustable from 2 to 37 volts.
- Output current to 150mA without external pass transistor

BLOCK DIAGRAM

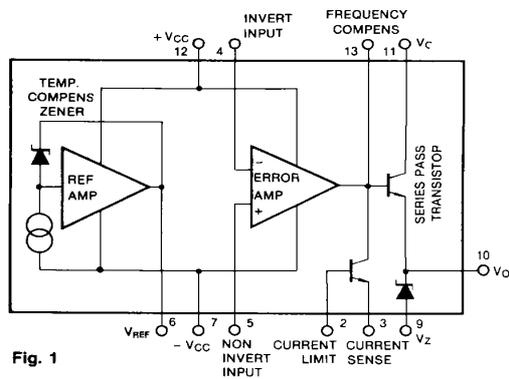
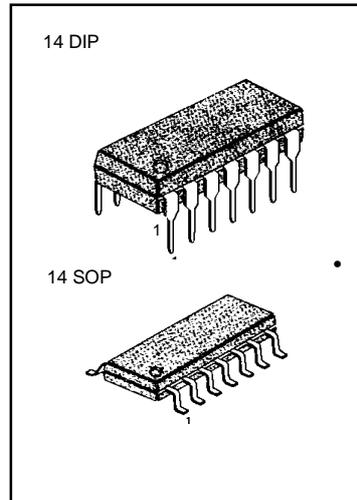


Fig. 1



• 0.01% line and load

ORDERING INFORMATION

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

SCHEMATIC DIAGRAM

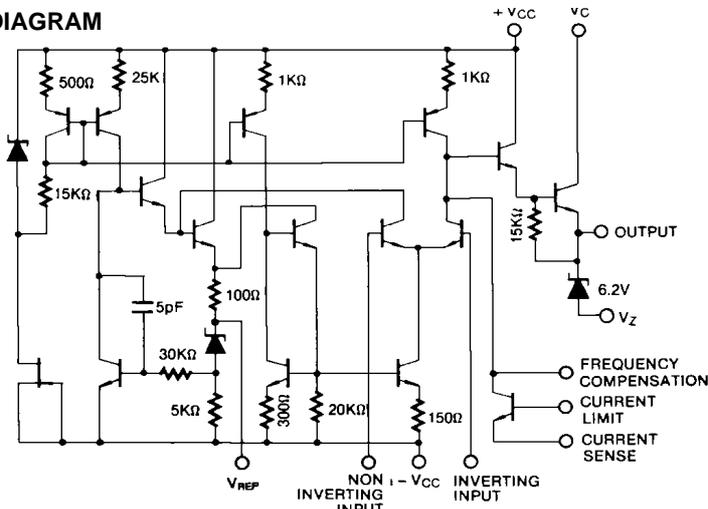


Fig. 2

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	0 ~ +70	$^{\circ}C$
	KA723I	-25 ~ +85	$^{\circ}C$
Storage Temperature Range	T_{STG}	-65 ~ +150	$^{\circ}C$

ELECTRICAL CHARACTERISTICS

(unless otherwise specified, $T_A = 25^{\circ}C$, $V_I = V_{CC} = 12V$, $V_O = +5V$, $I_L = 1.0mA$, $R_{SC} = 0$, $C_1 = 100pF$, $C_{REF} = 0$ and divider impedance as seen by error Amplifier $\leq 10K\Omega$ 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, $C_{REF} = 5\mu F$		86		
Average Temperature Coefficient of Output Voltage	$\Delta V_O / \Delta T$	$T_{MIN} \leq T \leq T_{MAX}$		0.003	0.015	$\%/^{\circ}C$
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	$f = 100Hz$ to 10KHz, $C_{REF} = 0$		20		μV_{rms}
		$f = 100Hz$ to 10KHz, $C_{REF} = 5\mu F$		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: $T_{MIN} = 0^{\circ}C$ for KA723
= $-25^{\circ}C$ for KA723I

$T_{MAX} = 70^{\circ}C$ for KA723
= $85^{\circ}C$ for KA723I

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FAST®	SuperSOT™-3	
FASTr™	SuperSOT™-6	
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