

KA2402

DC MOTOR SPEED CONTROLLER

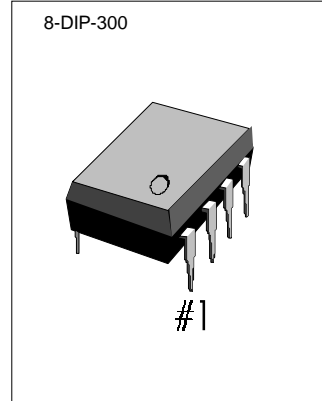
INTRODUCTION

USE

- Speed control or general-purpose low-voltage compact DC motor for microcassette tape recorders, radio cassettes and their equivalents.

FEATURES

- Operating supply voltage range
KA2402: $V_{CC}=1.8V \sim 8V$
- Capable of making the applicable set compact because of a minimum of adjust speed.
- Easy to adjust speed.
- Built-in stable low reference power meeting the requirements for 2 speeds.
- $V_{REF} = 0.2V$



ORDERING INFORMATION

Device	Package	Operating Temperature
KA2402	8-DIP-300	-20°C ~ +80°C

BLOCK DIAGRAM

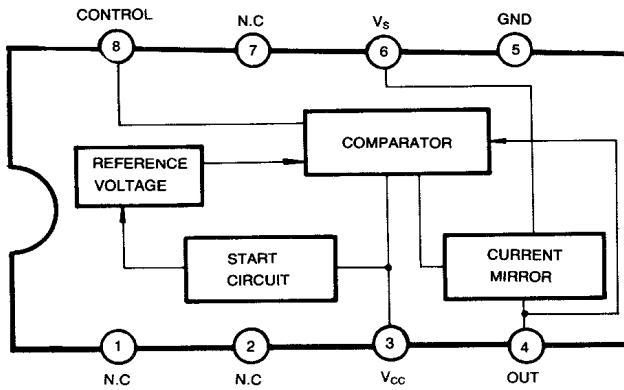


Fig. 1

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ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C)

Characteristic	Symbol	Value	Unit
Maximum Supply Voltage	V _{CC}	10	V
Maximum Motor Current	I _{M(MAX)}	700	mA
Power Dissipation	P _D	600	mW
Operating Temperature	T _{OPR}	-20 ~ +80	°C
Storage Temperature	T _{STG}	-40 ~ +125	°C

RECOMMENDED OPERATING CONDITIONS (Ta = 25 °C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V _{CC}	1.8 ~ 8	V
Recommended Operating Temperature	T _{OPR}	-20 ~ 60	°C

ELECTRICAL CHARACTERISTICS (Ta = 25 °C)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Reference Voltage	V _{REF}	V _{CC} = 3V, I _M = 100mA	0.18	0.2	0.22	V
Circuit Current	I _{CC}	V _{CC} = 3V, I _M = 100mA		2.4	6.0	mA
Current Coefficient	K	V _{CC} = 3V, I _M = 50mA I _M = 100mA	45	50	55	
Saturation Voltage	V _{SAT}	V _{CC} = 3V, I _M = 100mA		0.13	0.3	V
Voltage Characteristic of Reference Voltage	$\frac{\Delta V_{REF}}{V_{REF}} / \Delta V_{REF}$	I _M = 100mA, V _{CC} = 1.8 ~ 8V (KA2402) 1.8 ~ 4.5V (KA2402D)		0.1		%/V
Voltage Characteristic of Current Coefficient	$\frac{\Delta K}{K} / \Delta V_{CC}$	I _M = 50, 150mA V _{CC} = 1.8 ~ 8V (KA2402) 1.8 ~ 4.5V (KA2402D)		0.3		%/mA
Voltage Characteristic of Reference Voltage	$\frac{\Delta V_{REF}}{V_{REF}} / \Delta I_M$	I _M = 3V I _M = 20 ~ 200mA		0.005		%/mA
Current Characteristic of Current Coefficient	$\frac{\Delta K}{K} / \Delta I_M$	V _{CC} = 3V, I _M = 20, 50mA -170, 200mA		-0.07		%/mA
Temperature Characteristic of Reference Voltage	$\frac{\Delta V_{REF}}{V_{REF}} / \Delta T_a$	V _{CC} = 3V, I _M = 100mA T _a = -20 ~ +80 °C		-0.008		%/°C
Temperature Characteristic of Current Coefficient	$\frac{\Delta K}{K} / \Delta T_a$	V _{CC} = 3V, I _M = 50mA, 150mA T _a = -20 ~ +80 °C		0.02		%/°C

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TEST CIRCUIT

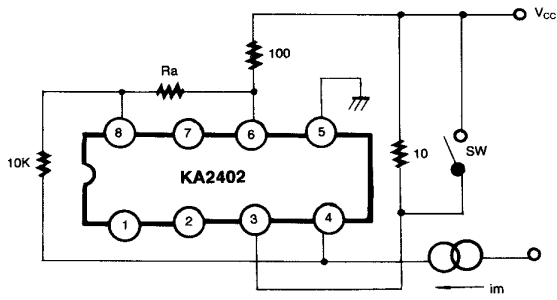


Fig. 2

APPLICATION CIRCUIT

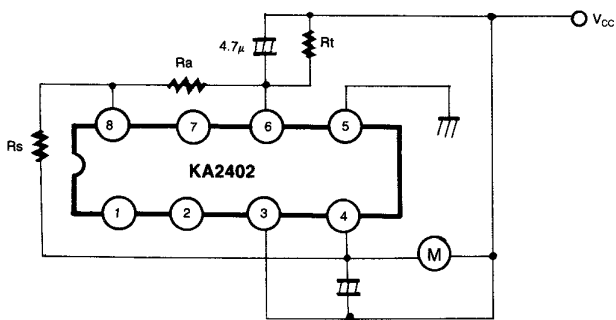


Fig. 3

