

**LA5527**

Low-Voltage DC Motor Speed Controller

Overview

Especially suited for controlling speed of a low-voltage (3V min.) DC motor for cassette tape recorders, 8mm motion-picture cameras, record players.

Features

- Wide operating voltage range (1.8 to 10V).
- Easy to very speed.
- Large starting torque.
- Easy to control rotational speed from very low speed to high speed.

Specifications

Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC\text{ max}}$		12	V
Allowable power dissipation	$P_d\text{ max}$		1	W
Operating temperature	T_{opr}		-20 to +80	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to +150	$^\circ\text{C}$
Motor current	I_m		1000	mA

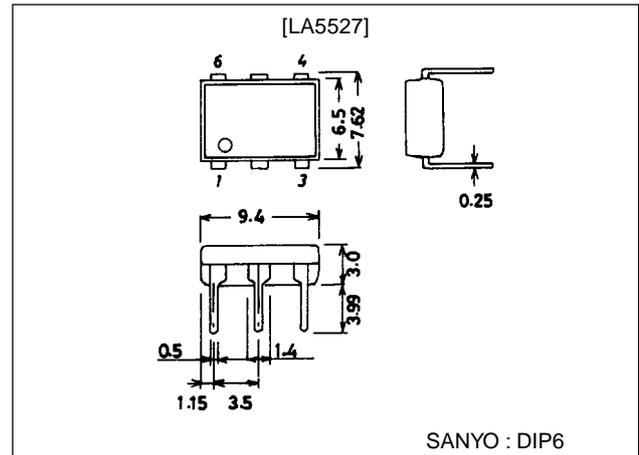
Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage range	$V_{CC\text{ op}}$		1.8 to 10	V
Recommended operating temperature	T_{opg}		-10 to +60	$^\circ\text{C}$

Package Dimensions

unit:mm

3048A-DIP6



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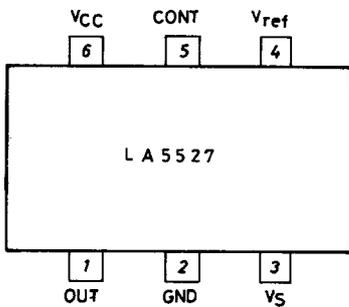
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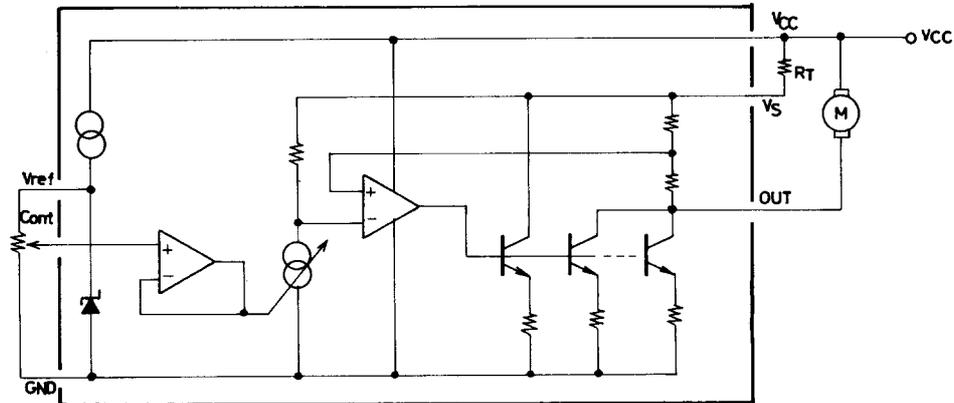
Operating Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Reference voltage	V_{ref}	$V_{CC}=3V, I_m=100mA$	1.15	1.25	1.3	V
Quiescent flow-in current	I_d	$V_{CC}=3V, I_m=100mA$		3.0	6.0	mA
Shunt ratio	K	$V_{CC}=3V, I_m=50mA, 150mA$	45	50	55	
Residual voltage	V_{sat}	$V_{CC}=3V, I_m=200mA, V_{ref}, V_{cont}$		0.3	0.5	V
Voltage of characteristic of reference voltage	$\frac{\Delta V_{ref}}{V_{ref}} / \Delta V_{CC}$	$I_m=100mA, V_{CC}=1.8 \text{ to } 10V$		0.1	0.3	%/V
Voltage of characteristic of shunt ratio	$\frac{\Delta K}{K} / \Delta V_{CC}$	$I_m=50-150mA, V_{CC}=1.8 \text{ to } 10V$		0.05	0.3	%/V
Current characteristic of reference voltage	$\frac{\Delta V_{ref}}{V_{ref}} / \Delta I_m$	$I_m=20 \text{ to } 200mA, V_{CC}=3V$		0.005	0.01	%/mA
Current characteristic of shunt ratio	$\frac{\Delta K}{K} / \Delta I_m$	$V_{CC}=3V, I_m=20mA, 50mA \text{ to } 170mA, 200mA$	-0.02	-0.005	0.02	%/mA
Temperature characteristic of reference voltage	$\frac{\Delta V_{ref}}{V_{ref}} / \Delta T_a$	$V_{CC}=3V, I_m=100mA, T_a=-20 \text{ to } +80^\circ\text{C}$		0.02		%/°C
Temperature characteristics of shunt ratio	$\frac{\Delta K}{K} / \Delta T_a$	$V_{CC}=3V, I_m=50mA, 150mA, T_a=-20 \text{ to } +80^\circ\text{C}$		-0.002		%/°C

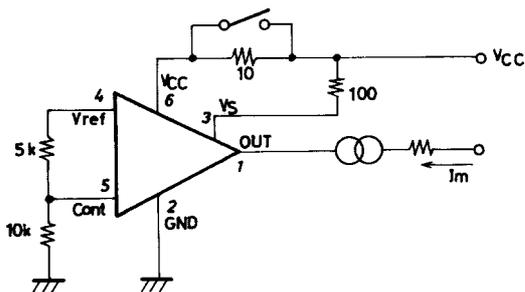
Pin Assignment



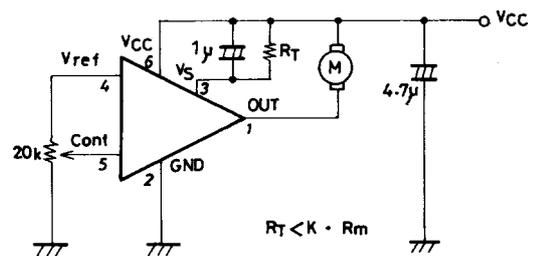
Equivalent Circuit Block Diagram

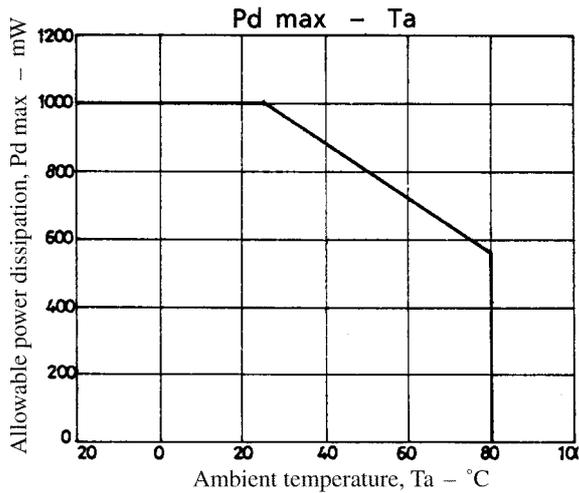


Test Circuit



Sample Application Circuit





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