

**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 Ta = 25°C

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

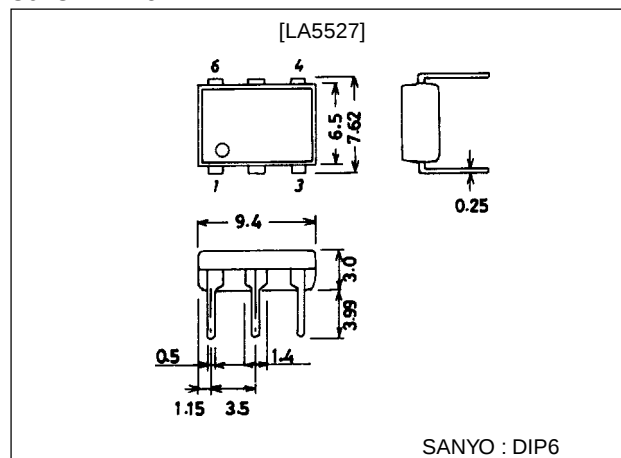
Operating Conditions at Ta = 25°C

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

Package Dimensions

unit:mm

3048A-DIP6



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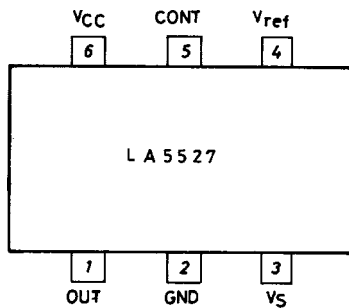
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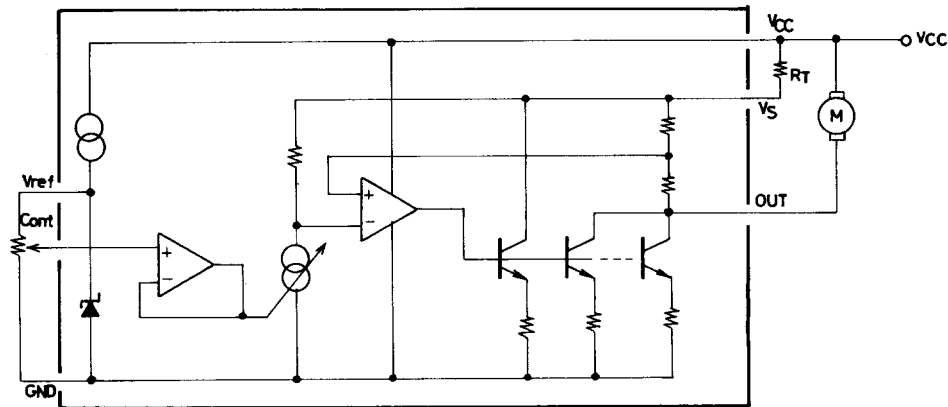
Operating Characteristics at $T_a = 25^\circ\text{C}$

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

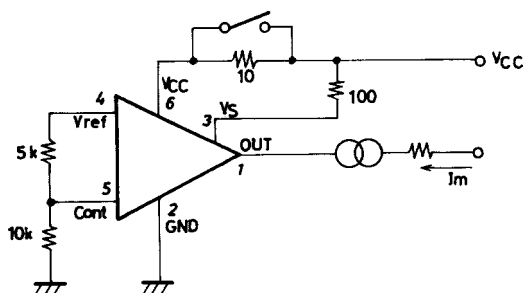
Pin Assignment



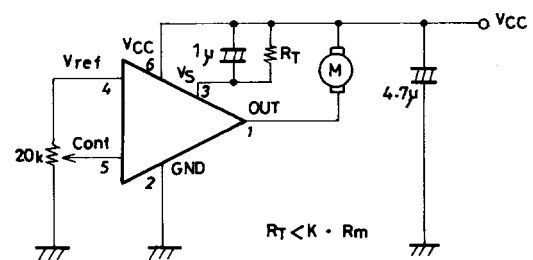
Equivalent Circuit Block Diagram

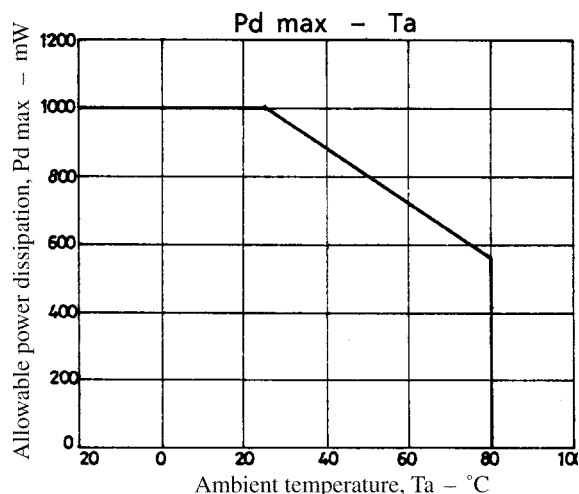


Test Circuit



Sample Application Circuit





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