

LA5527

SANYO

No.2071C

## Low-Voltage DC Motor Speed Controller

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 vary speed
- . Large starting torque
- . Easy to control rotational speed from very low speed to high speed

## Maximum Ratings at Ta=25°C

			unit
Maximum Supply Voltage	$V_{CCmax}$	12	V
Allowable Power Dissipation	$P_{dmax}$	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

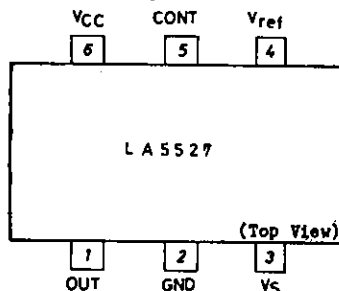
			unit
Supply Voltage Range	$V_{CC\ op}$	1.8 to 10	V
Recommended Operating Temperature	$T_{opr}$	-10 to +60	°C

## Operating Characteristics at Ta=25°C

			min	typ	max	unit
Reference Voltage	$V_{ref}$	$V_{CC}=3V, I_m=100mA$	1.15	1.25	1.3	V
Quiescent Current Dissipation	$I_d$	$V_{CC}=3V, I_m=100mA$		3.0	6.0	mA
Shunt Ratio	K	$V_{CC}=3V, I_m=50-150mA$	45	50	55	
Residual Voltage	$V_{sat}$	$V_{CC}=3V, I_m=200mA$		0.3	0.5	V
Voltage 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 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

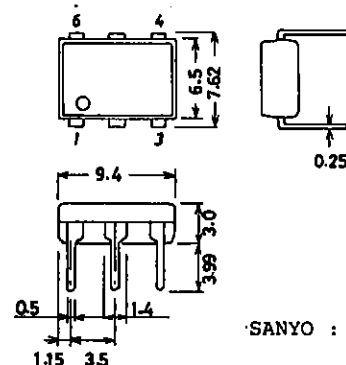
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## Pin Assignment



## Package Dimensions 3048A

unit: mm



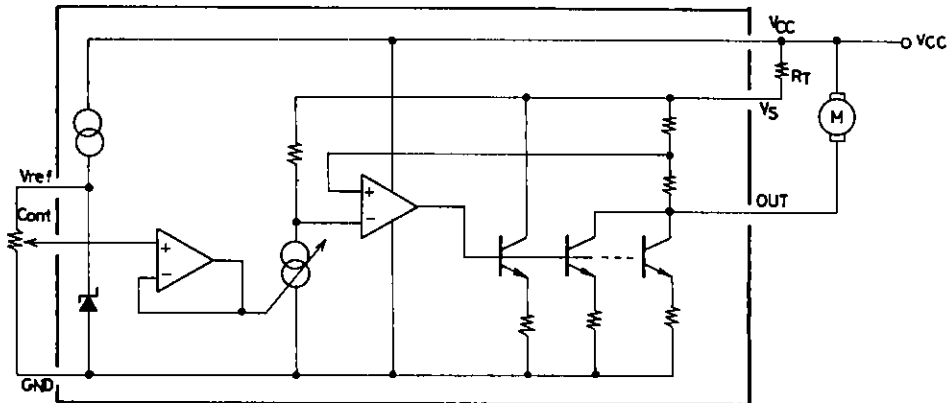
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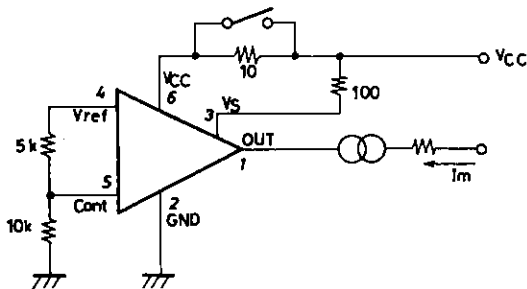
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			min	typ	max	unit
Current Characteristic of Shunt Ratio	$\frac{\Delta K}{K/\Delta I_m}$	$V_{CC}=3V,$ $I_m=20-50mA$ to $170-200mA$	-0.02	0.005	0.02	%/mA
Temperature Characteristic of Reference Voltage	$\frac{\Delta V_{ref}}{V_{ref}/\Delta T_a}$	$V_{CC}=3V,$ $I_m=100mA,$ $T_a=-20$ to $+80^\circ C$		0.02		%/°C
Temperature Characteristic of Shunt Ratio	$\frac{\Delta K}{K/\Delta T_a}$	$V_{CC}=3V,$ $I_m=50-150mA,$ $T_a=-20$ to $+80^\circ C$	-0.002			%/°C

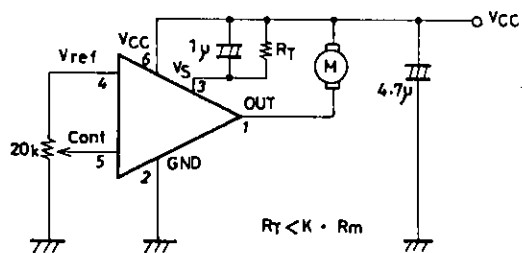
## Equivalent Circuit Block Diagram



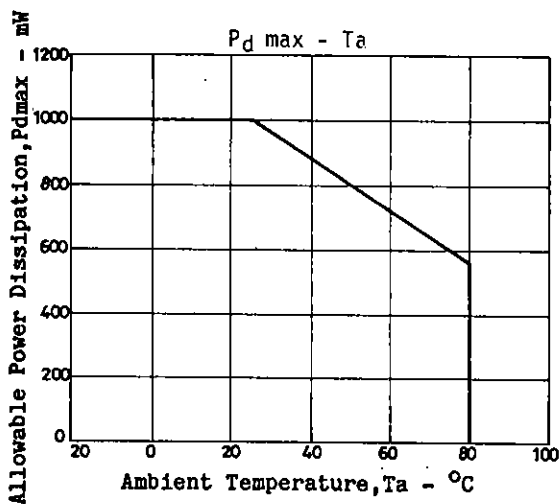
## Test Circuit



## Application Circuit



Unit (resistance:  $\Omega$ , capacitance: F)



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