

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

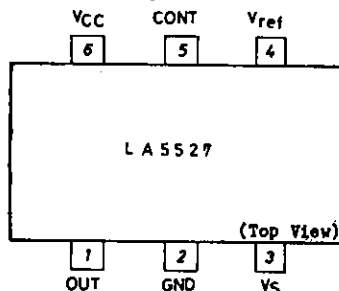
			unit
Supply Voltage Range	$V_{CC op}$	1.8 to 10	V
Recommended Operating Temperature	T_{opr}	-10 to +60	°C

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	$\frac{\Delta V_{ref}}{V_{ref}/\Delta V_{CC}}$	$I_m=100mA, V_{CC}=1.8 to 10V$		0.1	0.3	%/V
Voltage Characteristic of Shunt Ratio	$\frac{\Delta K}{K/\Delta V_{CC}}$	$I_m=50-150mA, V_{CC}=1.8 to 10V$		0.05	0.3	%/V
Current Characteristic of Reference Voltage	$\frac{\Delta V_{ref}}{V_{ref}/\Delta I_m}$	$I_m=20 to 200mA, V_{CC}=3V$		0.005	0.01	%/mA

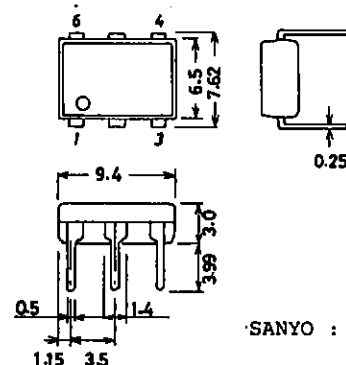
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Pin Assignment



Package Dimensions 3048A

unit: mm



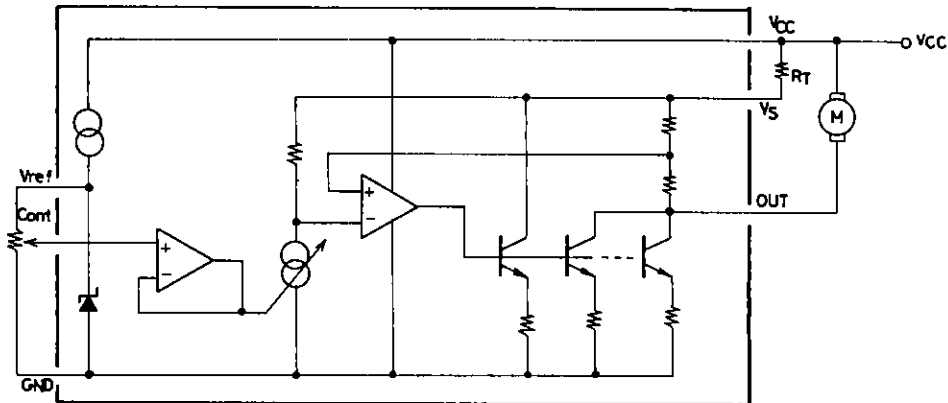
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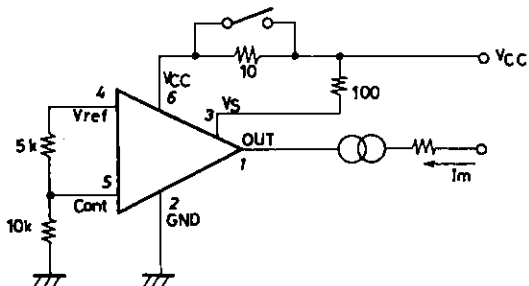
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			min	typ	max	unit
Current Characteristic of Shunt Ratio	$\frac{\Delta K}{K/\Delta I_m}$	$V_{CC}=3V,$ $I_m=20-50mA$ to $170-200mA$	-0.02	0.005	0.02	%/mA
Temperature Characteristic of Reference Voltage	$\frac{\Delta V_{ref}}{V_{ref}/\Delta T_a}$	$V_{CC}=3V,$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

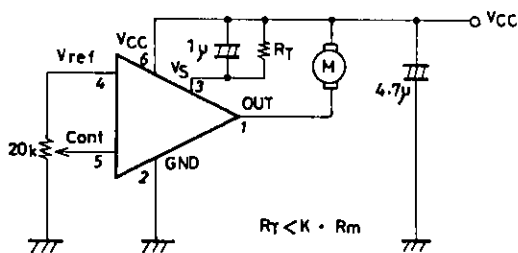
Equivalent Circuit Block Diagram



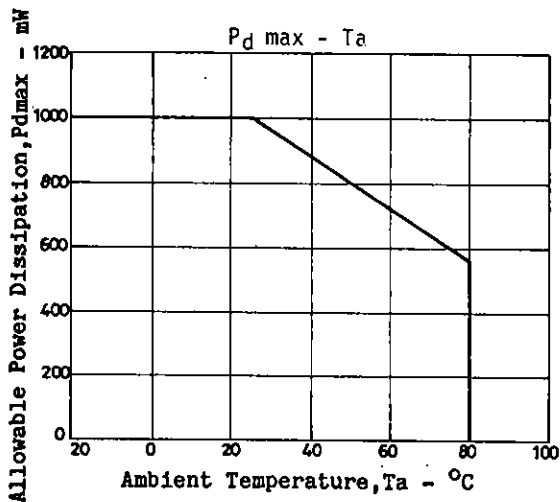
Test Circuit



Application Circuit



Unit (resistance: Ω , capacitance: F)



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