



# LA5527M

## 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 6V).
- 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	$V_{CC\text{ max}}$		8	V
Allowable power dissipation	$P_d\text{ max}$		350	mW
Operating temperature	$T_{opr}$		-20 to +80	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-40 to +150	$^\circ\text{C}$
Motor current	$I_m$		700	mA

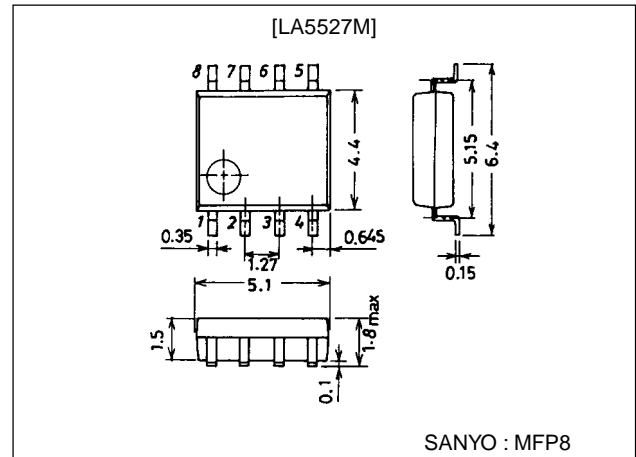
#### Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage range	$V_{CC\text{ op}}$		1.8 to 6	V
Recommended operating temperature	$T_{opg}$		-10 to +60	$^\circ\text{C}$

### Package Dimensions

unit:mm

#### 3032B-MFP8



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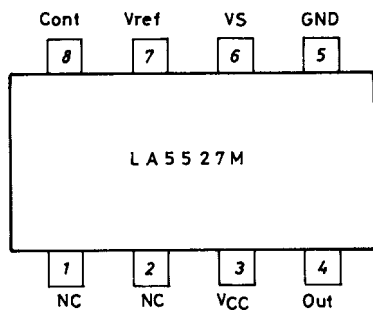
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

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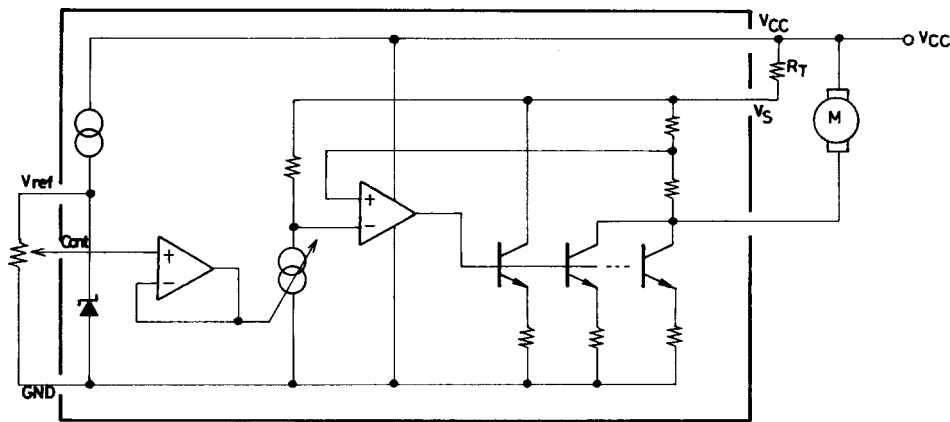
## Operating Characteristics at $T_a = 25^\circ\text{C}$

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	$\frac{\Delta V_{ref}}{V_{ref}} / \Delta V_{CC}$	$V_{CC}=1.8 \text{ to } 6V, I_m=100mA$		0.1	0.3	%/V
Voltage of characteristic of shunt ratio	$\frac{\Delta K}{K} / \Delta V_{CC}$	$V_{CC}=2.0 \text{ to } 6V, I_m=50, 150mA,$		0.05	0.3	%/V
Current characteristic of reference voltage	$\frac{\Delta V_{ref}}{V_{ref}} / \Delta I_m$	$V_{CC}=3V, I_m=20 \text{ to } 200mA$		0.005	0.01	%/mA
Current characteristic of shunt ratio	$\frac{\Delta K}{K} / \Delta I_m$	$V_{CC}=3V, I_m=20, 50mA \text{ to } 170, 200mA$	-0.02	-0.005	0.02	%/mA

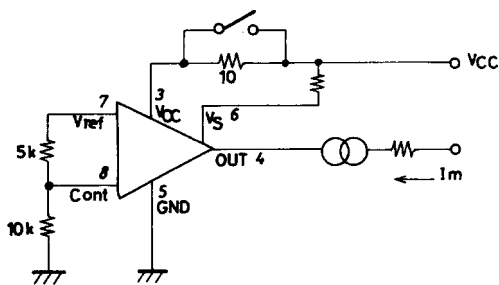
## Pin Assignment



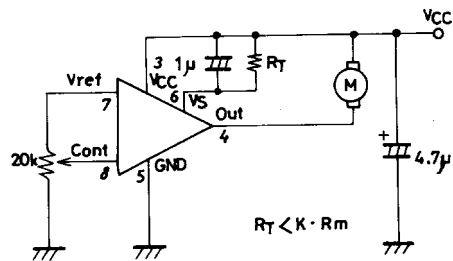
## Equivalent Circuit Block Diagram



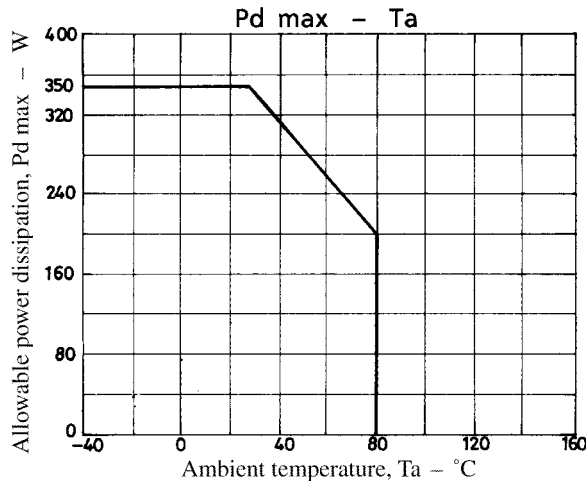
## Test Circuit



## Sample Application Circuit



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



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