

<b>SANYO</b>	No.1187E	<b>LA5000 Series</b>
		2 to 5V 60mA Low Saturation Voltage Regulators

The LA5002, 5003, 5004, 5005 are voltage regulators having a small input-output voltage drop (0.2V typ.) They are especially suited for use in battery-powered low voltage equipment and commercial or industrial equipment having a large voltage regulation.

**Features**

- Small input-output voltage drop (0.2V/I<sub>OUT</sub>=20mA typ.)
- Minimum number of external parts required
- Highly resistant against load short
- Radio noise (radiation) control pin

**Maximum Ratings at Ta=25°C**

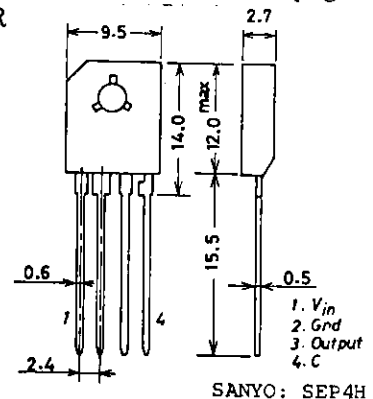
			unit
Input Supply Voltage	V <sub>IN</sub> max	12	V
Output Current	I <sub>OUT</sub> max	60	mA
Allowable Power Dissipation	P <sub>d</sub> max	560	mW
Operating Temperature	T <sub>opr</sub>	-20 to +80	°C
Storage Temperature	T <sub>stg</sub>	-30 to +125	°C

**Electrical Characteristics at Ta=25°C, C<sub>OUT</sub>=10µF, I<sub>OUT</sub>=20mA, V<sub>IN</sub>=3V [LA5002], V<sub>IN</sub>=4V [5003], V<sub>IN</sub>=5V [LA5004], V<sub>IN</sub>=6V [LA5005]**

			min	typ	max	unit
Output Voltage	V <sub>O</sub>	LA5002	1.85	2.0	2.15	V
		LA5003	2.8	3.0	3.2	V
		LA5004	3.75	4.0	4.25	V
		LA5005	4.75	5.0	5.25	V
		Line Regulation	V <sub>O</sub> line	LA5002: 2.5V < V <sub>IN</sub> < 8V		
		LA5003: 3.5V < V <sub>IN</sub> < 9V			50	mV
		LA5004: 4.5V < V <sub>IN</sub> < 10V			50	mV
		LA5005: 5.5V < V <sub>IN</sub> < 11V			50	mV
Load Regulation	V <sub>O</sub> load	1mA < I <sub>OUT</sub> < 40mA			20	mV
		1mA < I <sub>OUT</sub> < 50mA			25	mV
Quiescent Current	I <sub>CCO</sub>	LA5002		1.2	2.0	mA
		LA5003		1.4	2.0	mA
		LA5004		1.5	2.3	mA
		LA5005		1.7	2.5	mA

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**Package Dimensions 3027A-S4HTR**  
(unit: mm)

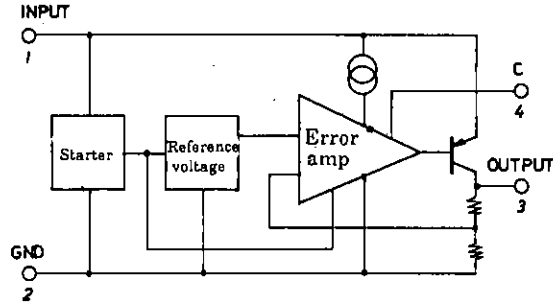


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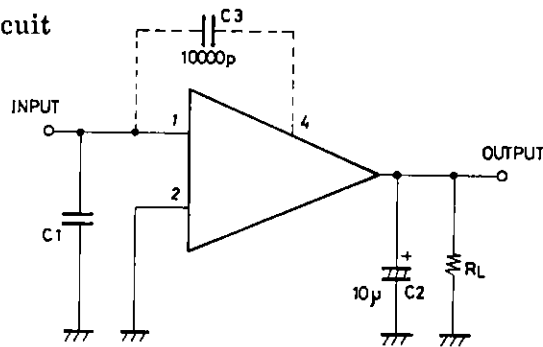
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			min	typ	max	unit
Ripple Voltage	$R_T$	LA5002, LA5004, LA5005: $f = 120\text{Hz}$	40			dB
		LA5003: $f = 120\text{Hz}$	43			dB
Input/Output Voltage Drop	$V_{\text{drop}}$			0.2	0.3	V
Coefficient of Output Voltage	$K\Delta V_o/\Delta T$		-1		+1	mV/°C
	$V_N$	$10\text{Hz} < f < 100\text{kHz}$		30		$\mu\text{V}$

## Equivalent Circuit Block Diagram



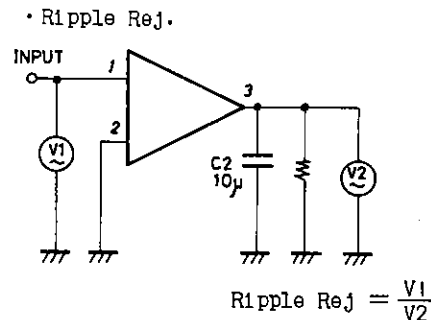
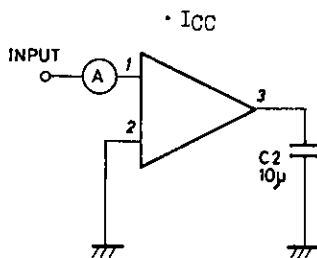
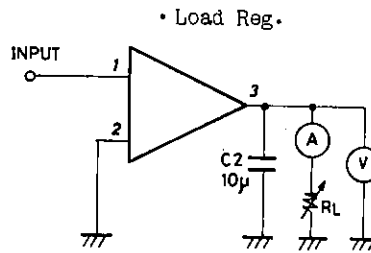
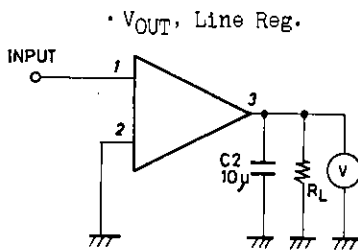
## Sample Application Circuit



Unit (capacitance: F)

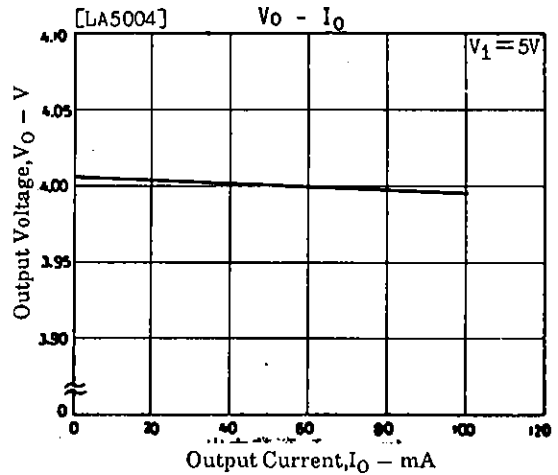
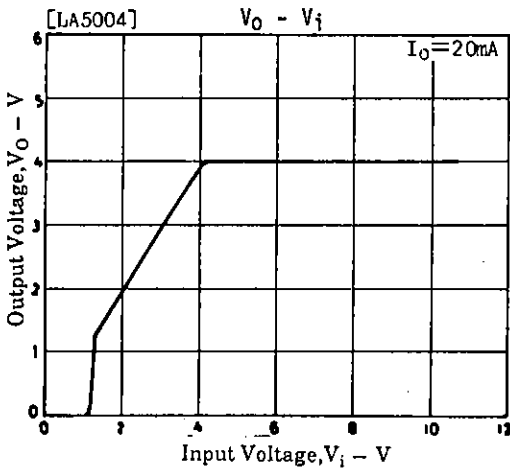
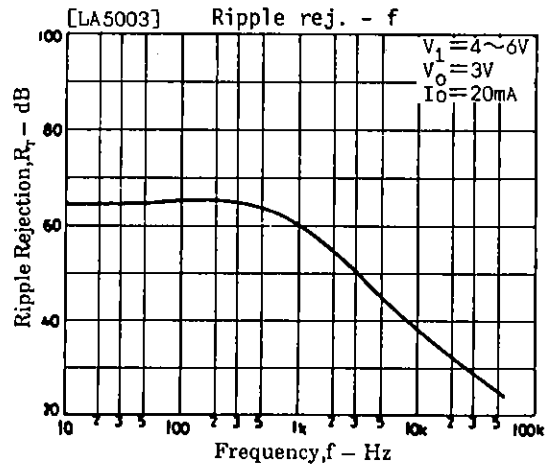
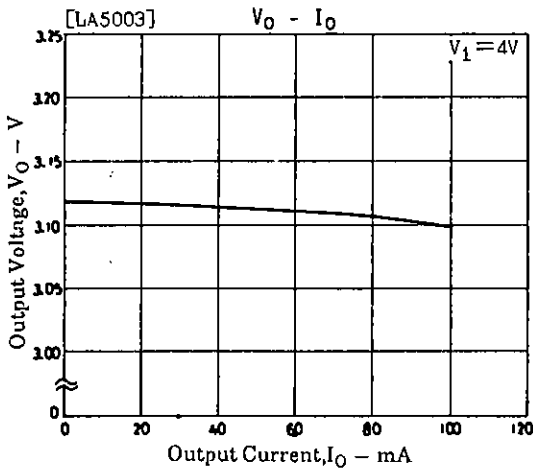
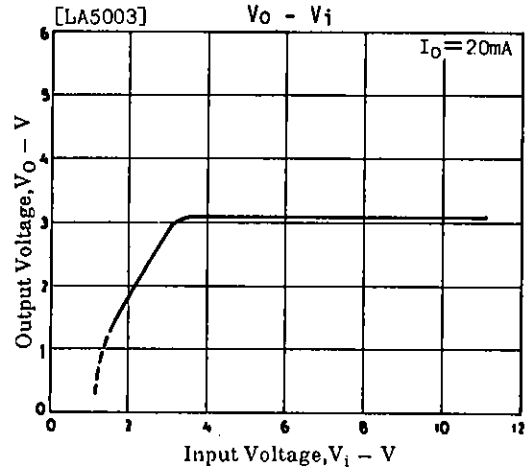
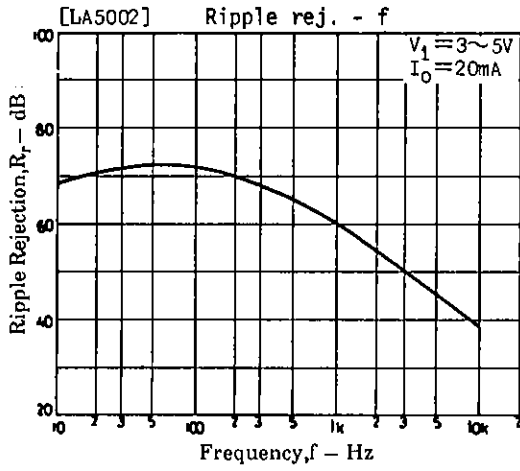
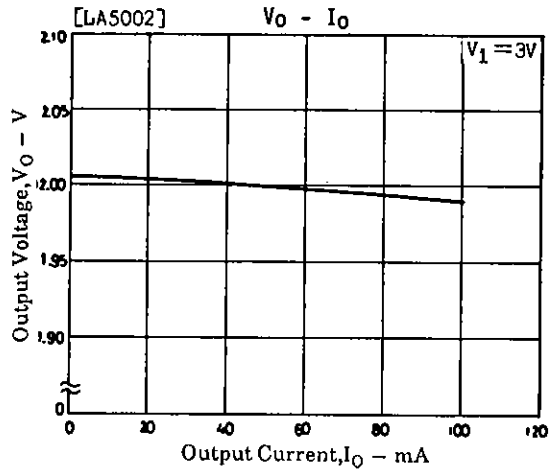
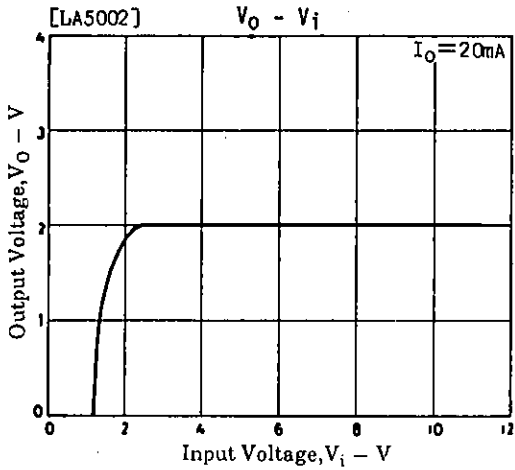
Note: Capacitor C3 is not required unless radio noise is a problem.

## Test Circuits

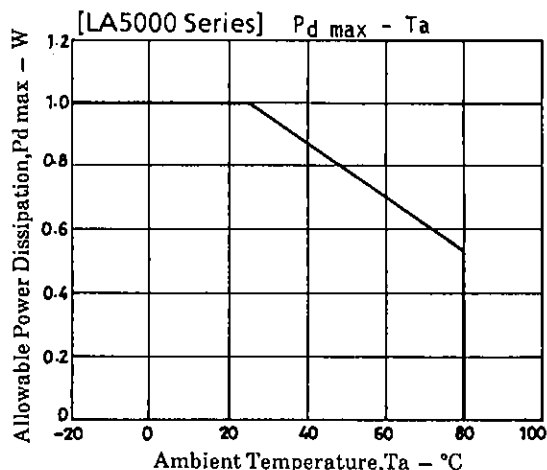
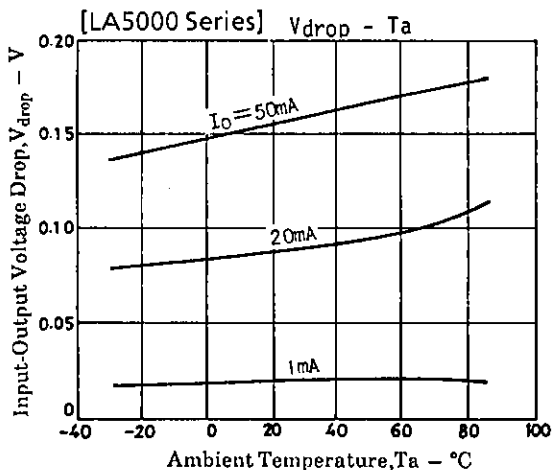
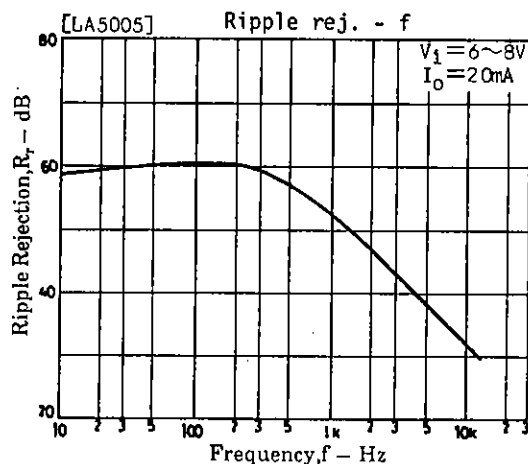
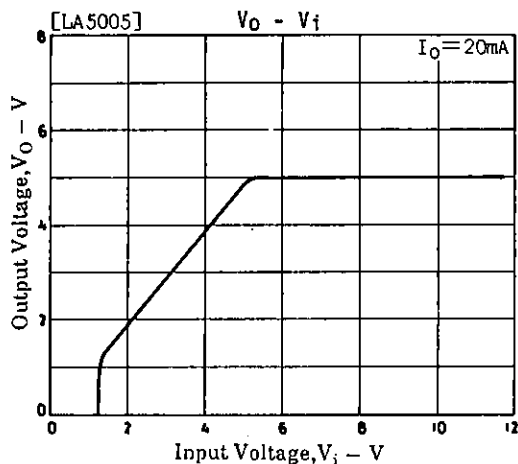
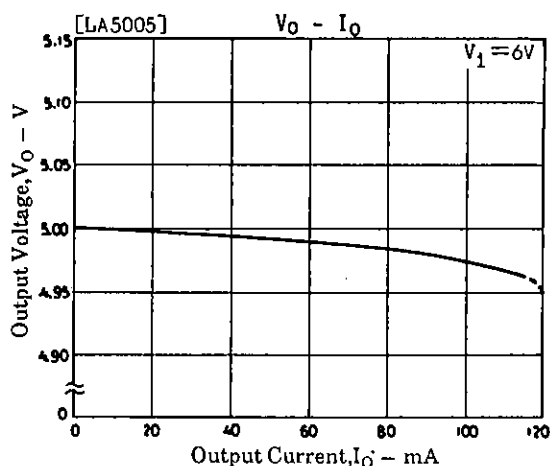
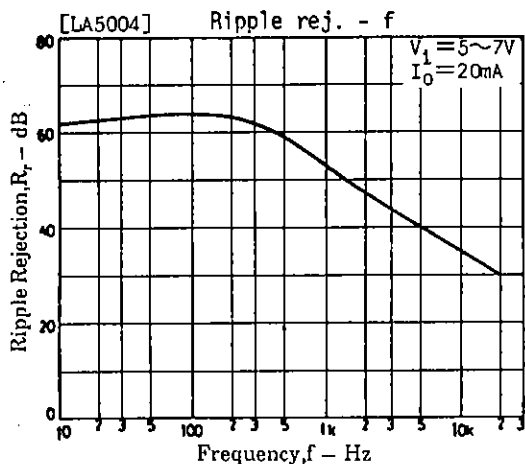


Unit (capacitance: F)

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