
	No.1415C 	<h2 style="margin: 0;">LA5000M Series</h2> <p style="margin: 0;">Monolithic Linear IC</p> <p style="margin: 0;">2 to 10V 60mA</p> <h3 style="margin: 0;">Low Saturation Voltage Regulators</h3>
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The LA5002M, 5003M, 5004M, 5005M, 5006M, 5008M, 5009M, 5010M 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**

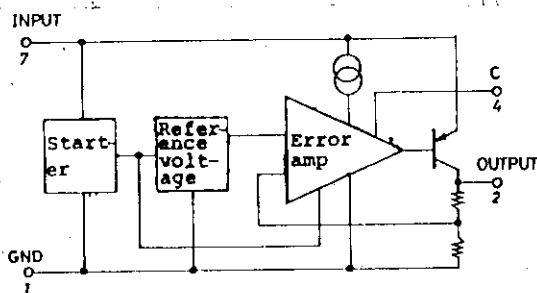
			unit
Input Supply Voltage	V <sub>IN</sub> max	LA5002M, 5003M, 5004M, 5005M	12 V
		LA5006M, 5008M, 5009M, 5010M	16 V
Output Current	I <sub>OUT</sub> max		60 mA
Allowable Power Dissipation	P <sub>d</sub> max		300 mW
Operating Temperature	Topg		-20 to +80 °C
Storage Temperature	Tstg		-30 to +125 °C

**Operating Characteristics at Ta=25°C, C<sub>OUT</sub>=10uF, I<sub>OUT</sub>=20mA, V<sub>IN</sub>=3V[LA5002M], V<sub>IN</sub>=4V [LA5003M], V<sub>IN</sub>=5V[LA5004M], V<sub>IN</sub>=6V[LA5005M], V<sub>IN</sub>=7V[LA5006M], V<sub>IN</sub>=9V[LA5008M], V<sub>IN</sub>=10V[LA5009M], V<sub>IN</sub>=11V[LA5010M]**

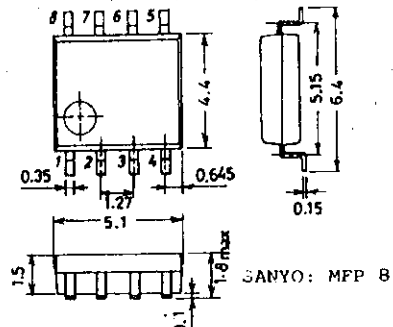
			min	typ	max	unit		
Output Voltage	Vo	LA5002M	1.85	2.0	2.15	V		
		LA5003M	2.8	3.0	3.2	V		
		LA5004M	3.75	4.0	4.25	V		
		LA5005M	4.75	5.0	5.25	V		
		LA5006M	5.7	6.0	6.3	V		
		LA5008M	7.6	8.0	8.4	V		
		LA5009M	8.55	9.0	9.45	V		
		LA5010M	9.4	10.0	10.6	V		
		Line Regulation	Vo line	LA5002M 2.5V<V <sub>IN</sub> <8V			50	mV
				LA5003M 3.5V<V <sub>IN</sub> <9V			50	mV
LA5004M 4.5V<V <sub>IN</sub> <10V					50	mV		
LA5005M 5.5V<V <sub>IN</sub> <11V					50	mV		

Continued on next page.

**Equivalent Circuit Block Diagram**



**Case Outline 3032B-M8IC (unit:mm)**



Specifications and information herein are subject to change without notice.

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 Natsume Bldg., 18-6, 2-chome, Yushima Bunkyo-ku, TOKYO 113 JAPAN

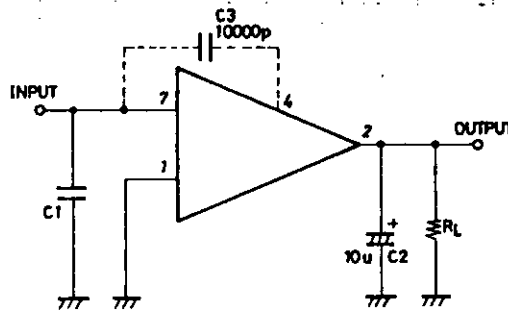
LA5000M Series

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Continued from preceding page.

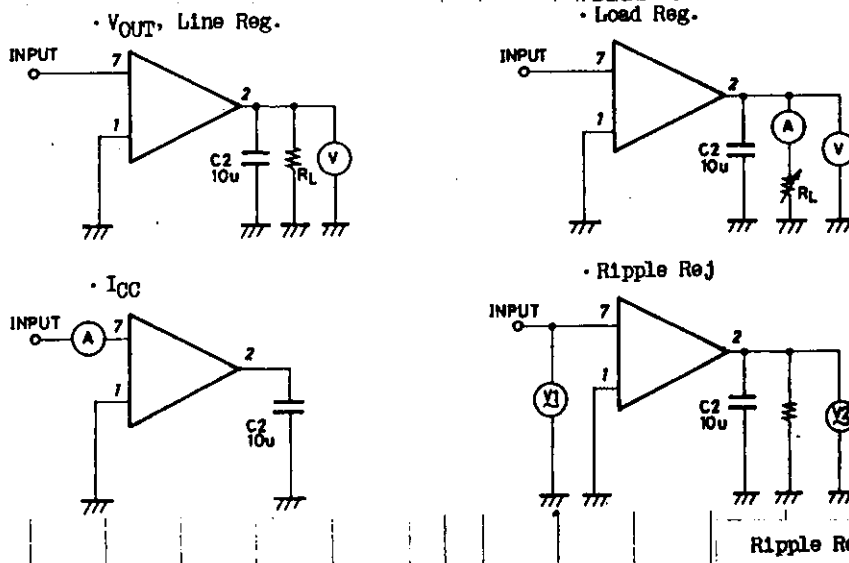
			min	typ	max	unit
Line Regulation		LA5006M $6.5V < V_{IN} < 12V$			50	mV
		LA5008M $9V < V_{IN} < 14V$			50	mV
		LA5009M $10V < V_{IN} < 15V$			50	mV
		LA5010M $11V < V_{IN} < 16V$			50	mV
Load Regulation	Vo load	$1mA < I_{OUT} < 40mA$			20	mV
		$1mA < I_{OUT} < 50mA$			25	mV
Quiescent Current Dissipation	Icco	LA5002M	1.2	2.0		mA
		LA5003M	1.4	2.0		mA
		LA5004M	1.5	2.3		mA
		LA5005M, 5006M, 5008M, 5009M, 5010M	1.7	2.5		mA
Ripple Rejection	Rr	LA5002M, 5004M, 5005M $f=120Hz$	40			dB
		LA5003M $f=120Hz$	43			dB
		LA5006M, 5008M, 5009M, 5010M $f=120Hz$	35			dB
Input-Output Voltage Drop	Vdrop		0.2	0.3		V
Temperature Coefficient of Output Voltage	$k\Delta v_o/\Delta T$	LA5002M, 5003M, 5004M, 5005M	-1			1 mV/°C
		LA5006M	-2			2 mV/°C
		LA5008M	-3			3 mV/°C
		LA5009M	-4			4 mV/°C
		LA5010M	-5			5 mV/°C
Output Noise Voltage	$V_N$	$10Hz < f < 100kHz$		30		$\mu V$

Sample Application Circuit



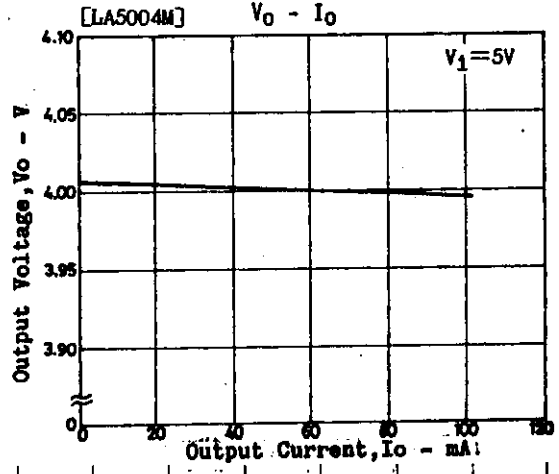
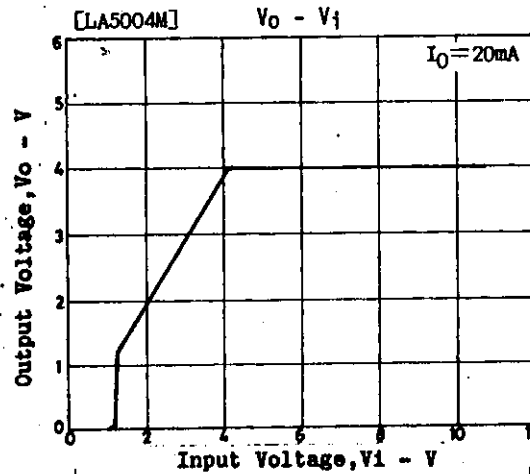
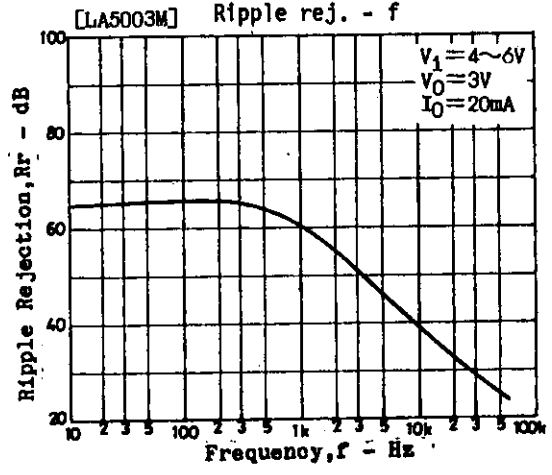
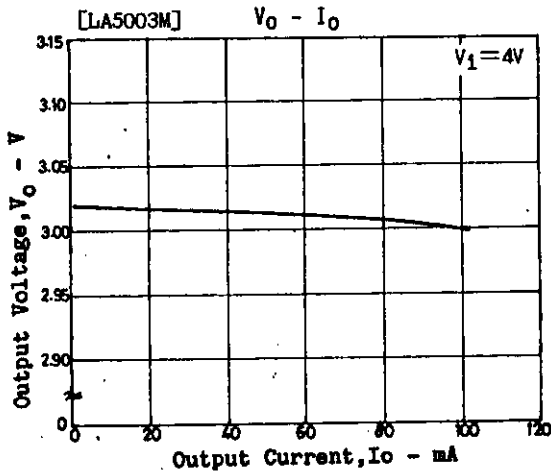
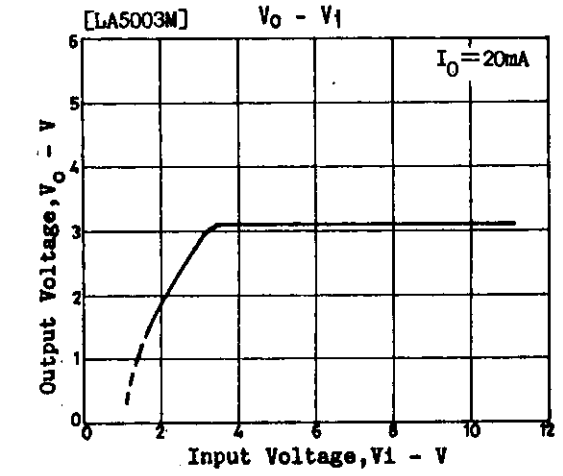
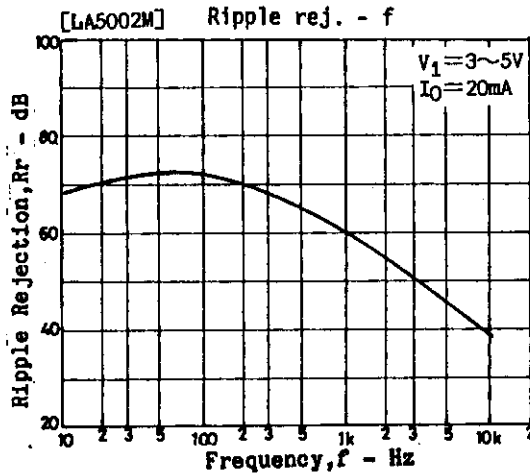
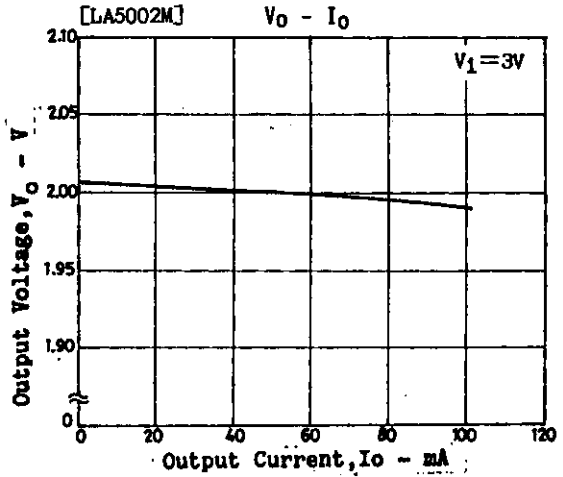
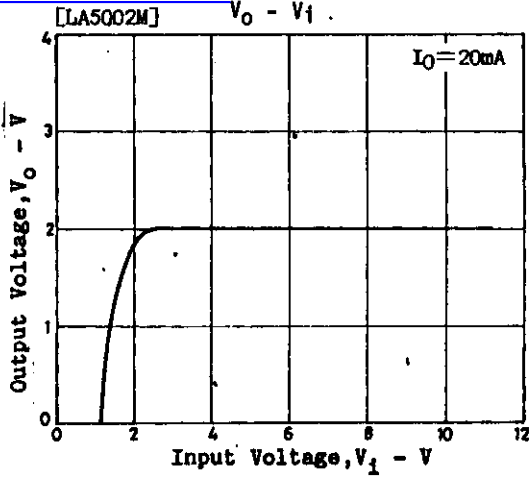
Note: Capacitor C3 is not required unless radio noise is a problem.

Test Circuits



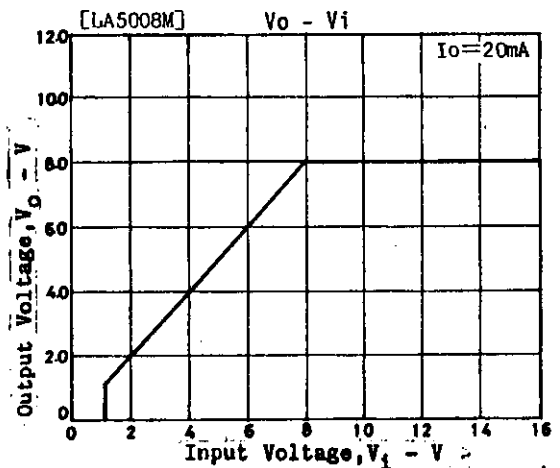
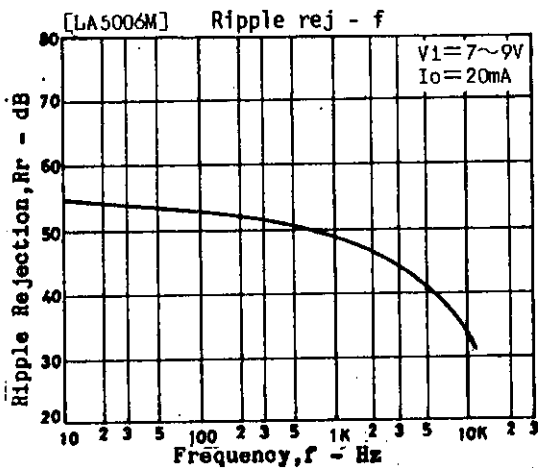
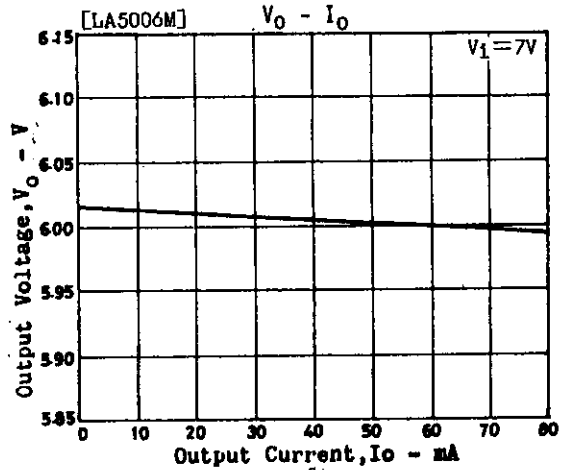
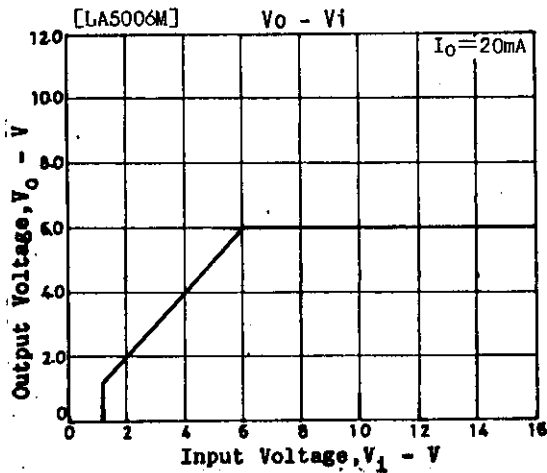
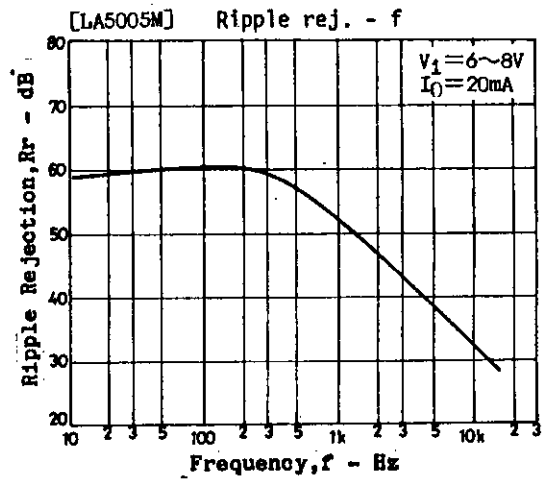
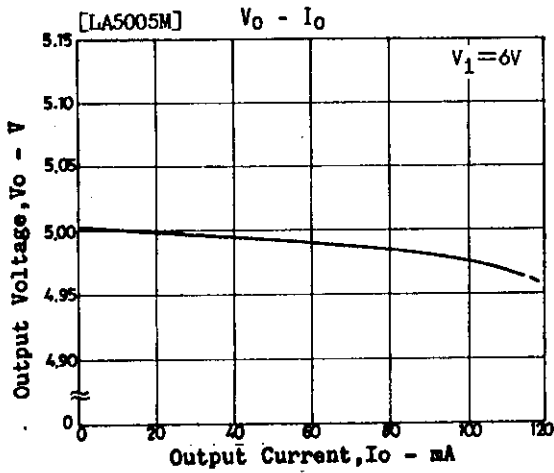
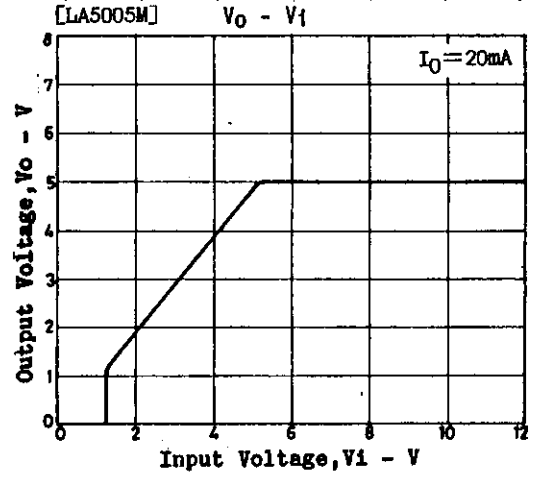
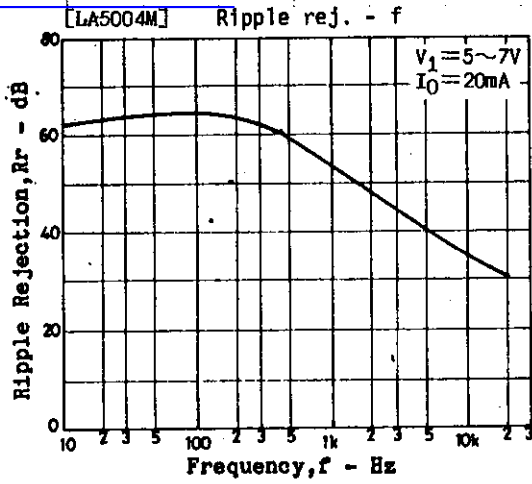
LA5000M Series

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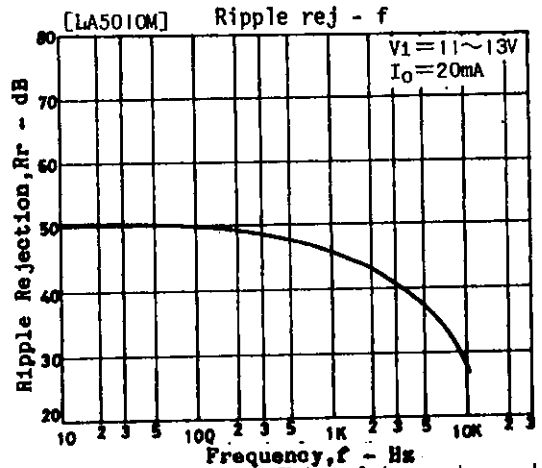
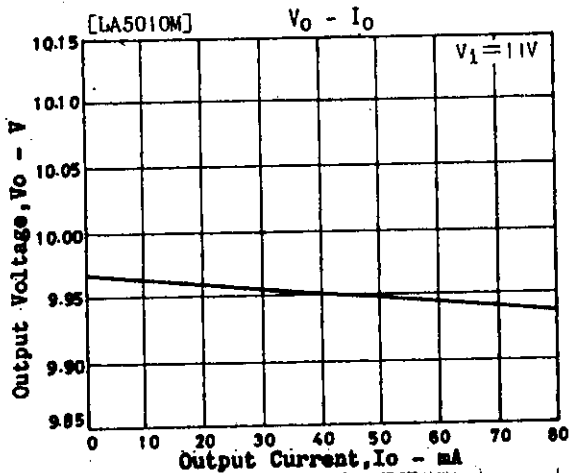
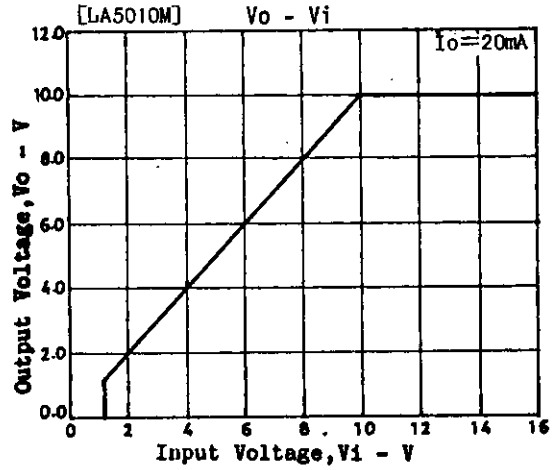
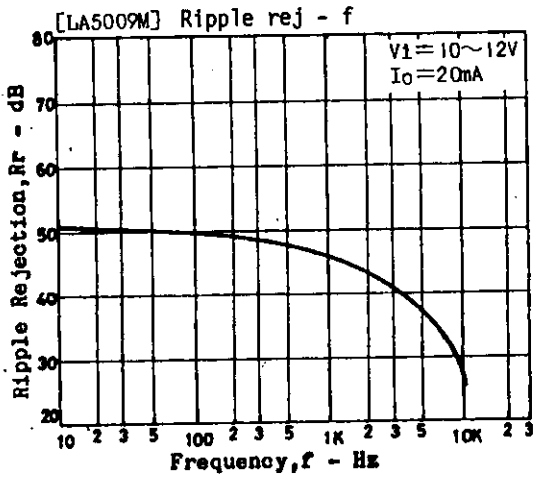
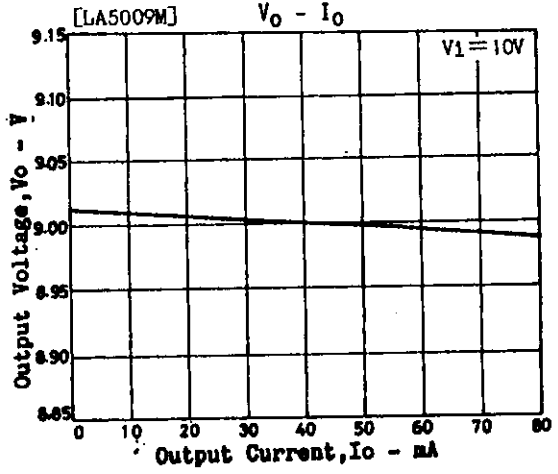
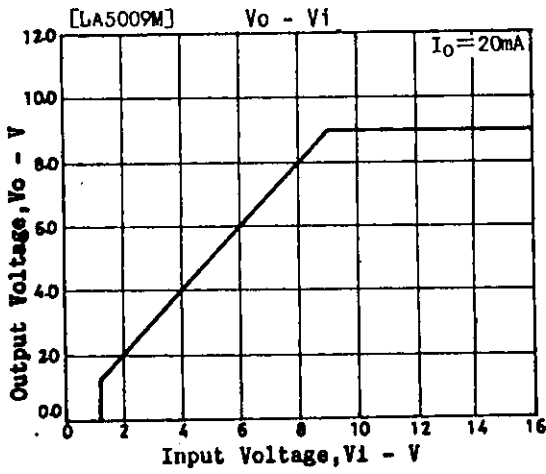
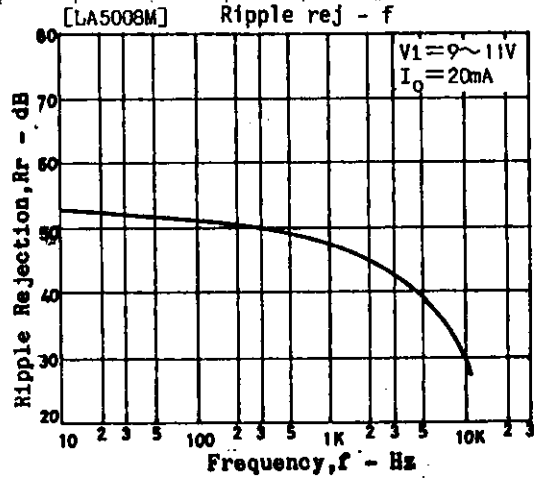
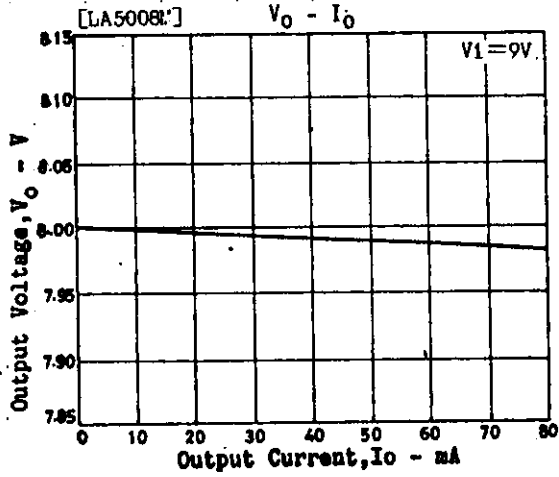
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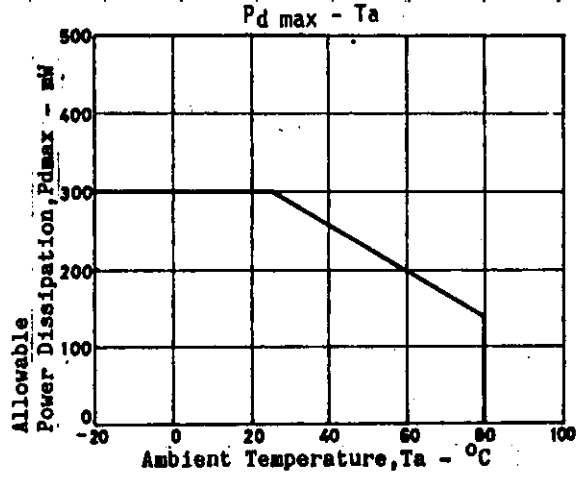
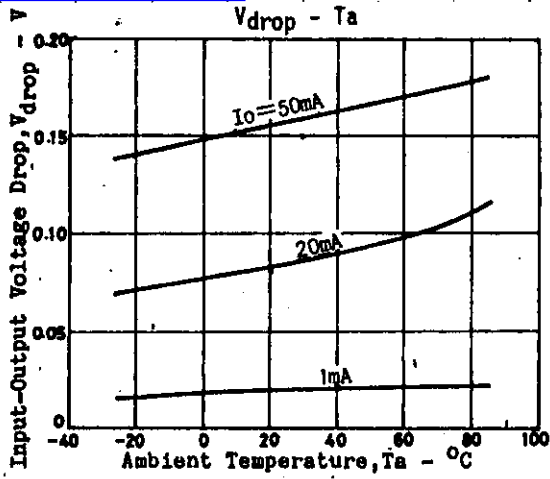
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