

**SANYO**

No.1612B

**LA6805M**

Low-Voltage Power Amp  
for Speech Synthesis Output

**Use**

- . The LA6805M is a speaker driver IC designed to operate from low voltage. It is especially suited for use in peripherals of musical instruments, electronic translators, speech synthesizing systems.

**Features**

- . On-chip current-voltage converting OP amp (also used as filter amp)
- . Capable of delivering high output at low voltage because of low output saturation voltage
- . Low quiescent current: 1mA or less (typ.)
- . Since the ENA pin is provided, no power is dissipated at the unused mode.
- . Minimum number of external parts required.

**Absolute Maximum Ratings at Ta=25°C**

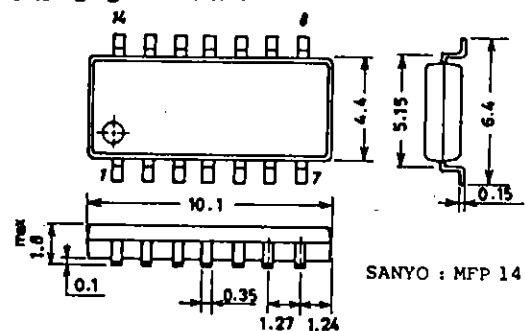
				unit
Maximum Supply Voltage	$V_{CCmax}$	$+V_S - (-V_S)$	7	V
Allowable Power Dissipation	$P_{dmax}$		330	mW
Operating Temperature	$T_{opr}$		-10 to +75	°C
Storage Temperature	$T_{stg}$		-40 to +125	°C

**Operating Conditions at Ta=25°C**

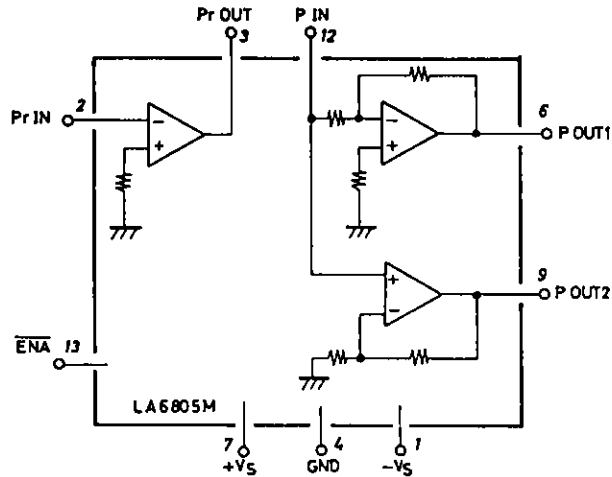
				unit
Supply Voltage Range	$V_{CC\ op}$	$ V_S  \cong  -V_S $	$\pm 1.2$ to $\pm 3.3$	V
Recommended Load Resistance	$R_L$		32 to 64	ohm

**Operating Characteristics at Ta=25°C, +V<sub>S</sub>=1.5V, -V<sub>S</sub>=-1.5V, R<sub>L</sub>=64ohm**

			min	typ	max	unit
Supply Current 1	$I_{cco}$			2	3.5	mA
Output Saturation Voltage	$V_{sat1}$	$I_O=+35mA$	$V_S-0.5$			V
	$V_{sat2}$	$I_O=-35mA$			$-V_S+0.5$	V
Input Amp Bias Current	$I_B$				0.5	μA
Output Offset Voltage	$V_O\ offset$		-150		+150	mV
Output Amp Gain 1	VG1	Inverting	12	14	16	dB
Output Amp Gain 2	VG2	Noninverting	12	14	16	dB
Output Amp Gain Difference	$V_{(G1-G2)}$					dB
Output Voltage	$V_{O(1-2)}$	$+V_S=1.5V, -V_S=-1.5V$		$\pm 0.5$		dB
		THD=10%, f=1kHz	1.5			V
Input Amp Open Loop Gain	VG3	f=1kHz		60		dB

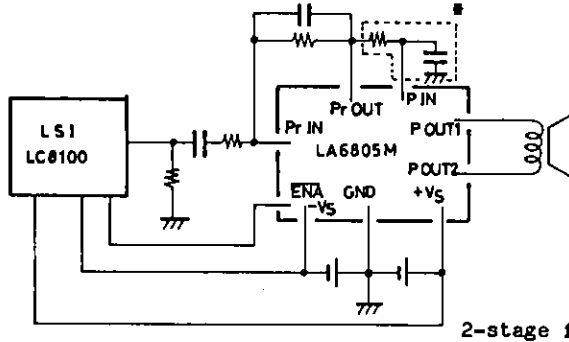
**Package Dimensions 3034A-M14IC**  
(unit: mm)

Equivalent Circuit Block Diagram



Sample Application Circuits

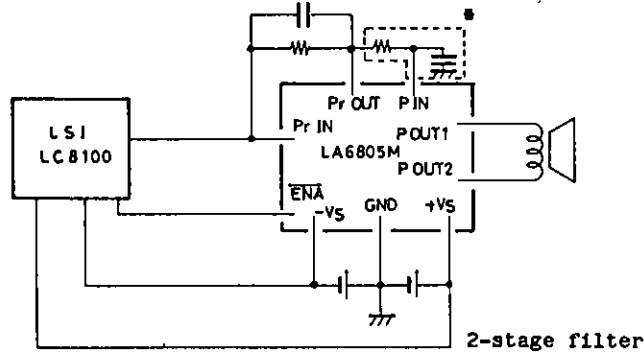
- (1) Application where the LA6805M is used in conjunction with the voltage output type (unipolar) speech synthesis LSI.



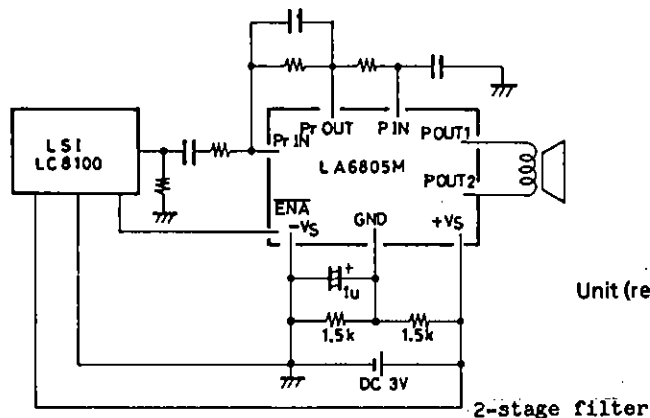
\*: When no 2-stage filter is required, short P OUT and P IN.

ENA : Active-low  
( $V_S - V_{ENA} \geq 2V$ )

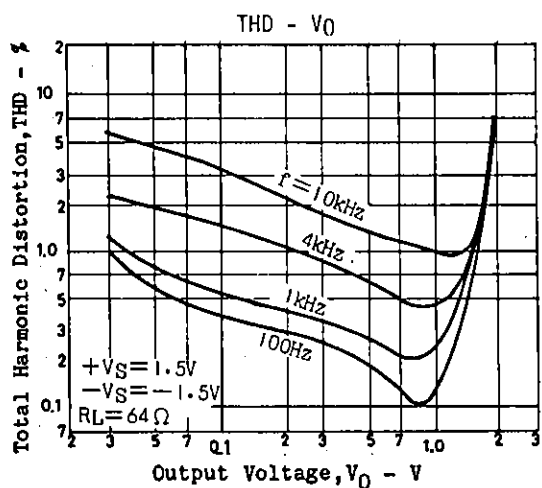
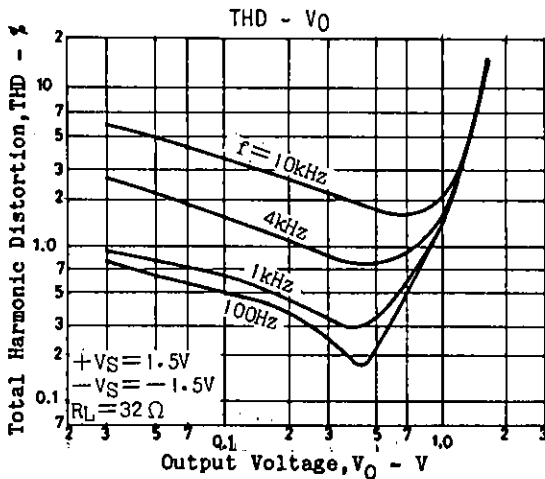
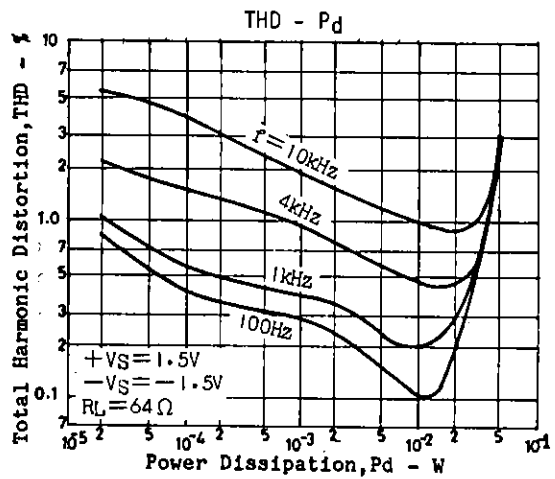
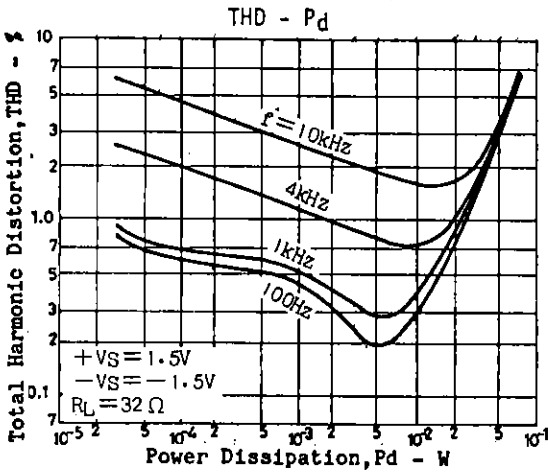
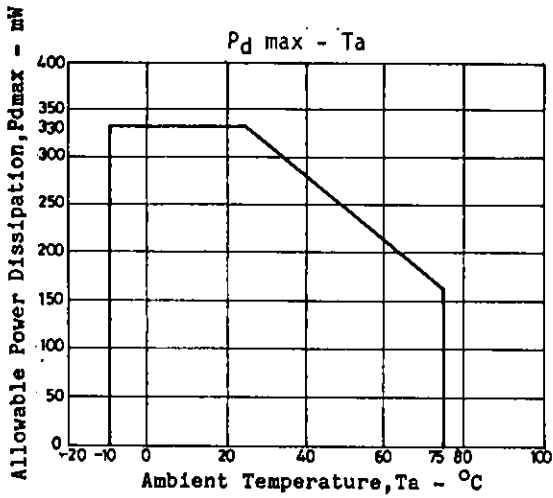
- (2) Application where the LA6805M is used in conjunction with the current output type (bipolar) speech synthesis LSI.



- (3) Application where the LA6805M is operated from a single supply



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



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