

# DATA SHEET

Part No.	AN34001A
Package Code No.	HZIP016-P-0665F

Contents

- Overview ..... 3
- Features ..... 3
- Applications ..... 3
- Package ..... 3
- Type ..... 3
- Application Circuit Example ..... 4
- Block Diagram ..... 5
- Pin Descriptions..... 5
- Absolute Maximum Ratings..... 6

# AN34001A

## Nine-Output Linear Voltage Regulator

### ■ Overview

AN34001A is a nine-output power supply IC, consisting of five linear regulator (one adjustable) and four voltage followers. Seven of the outputs are controlled by three control switches.

### ■ Features

- Thermal protection circuit.
- Short circuit protection circuit
- Over voltage protection circuit
- Operating supply voltage range: 6.6 V to 18.0 V (13.2 V typical)
- High maximum operating voltage: 26 V

### ■ Application

Voltage supply for car audio system

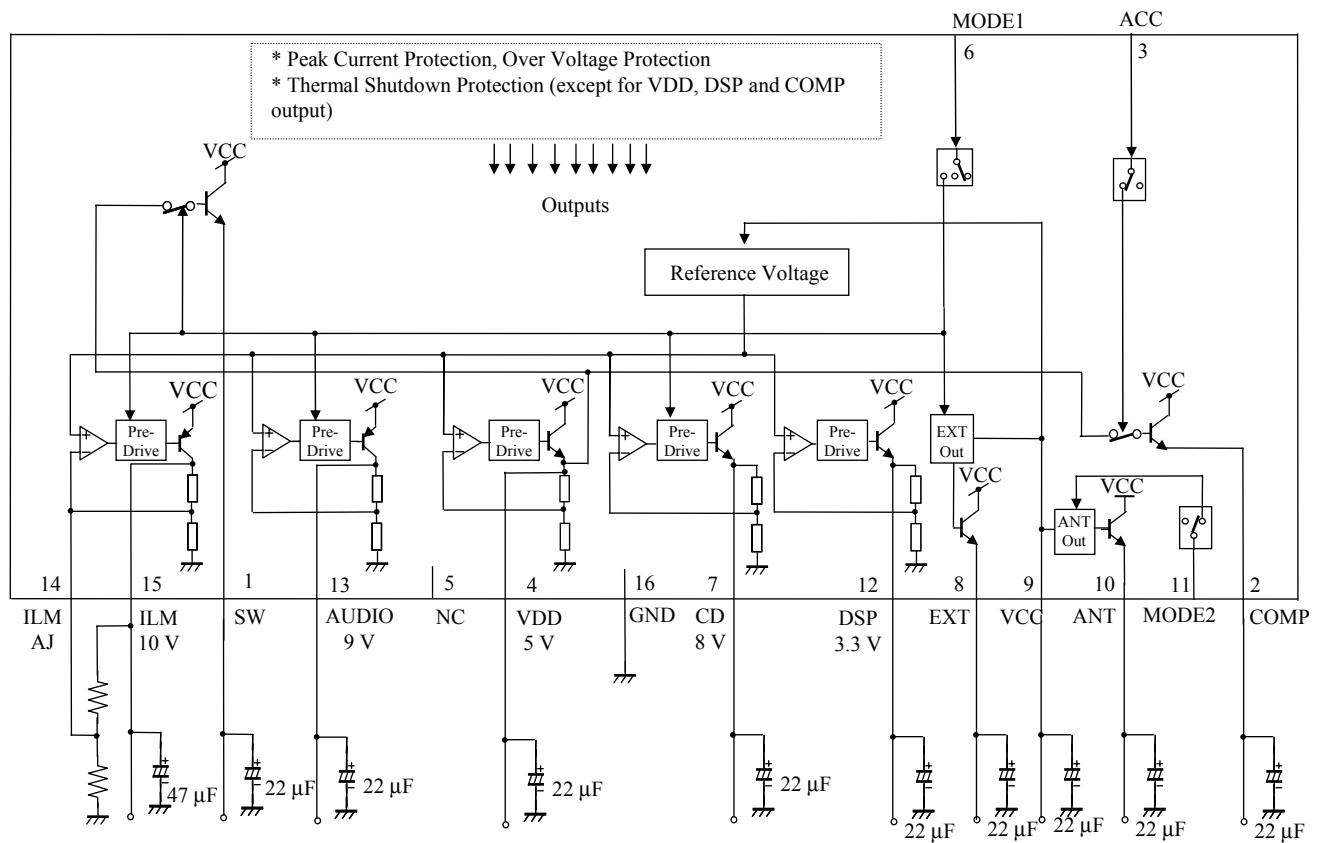
### ■ Package

16 pin plastic zigzag inline package with heat sink (ZIP type)

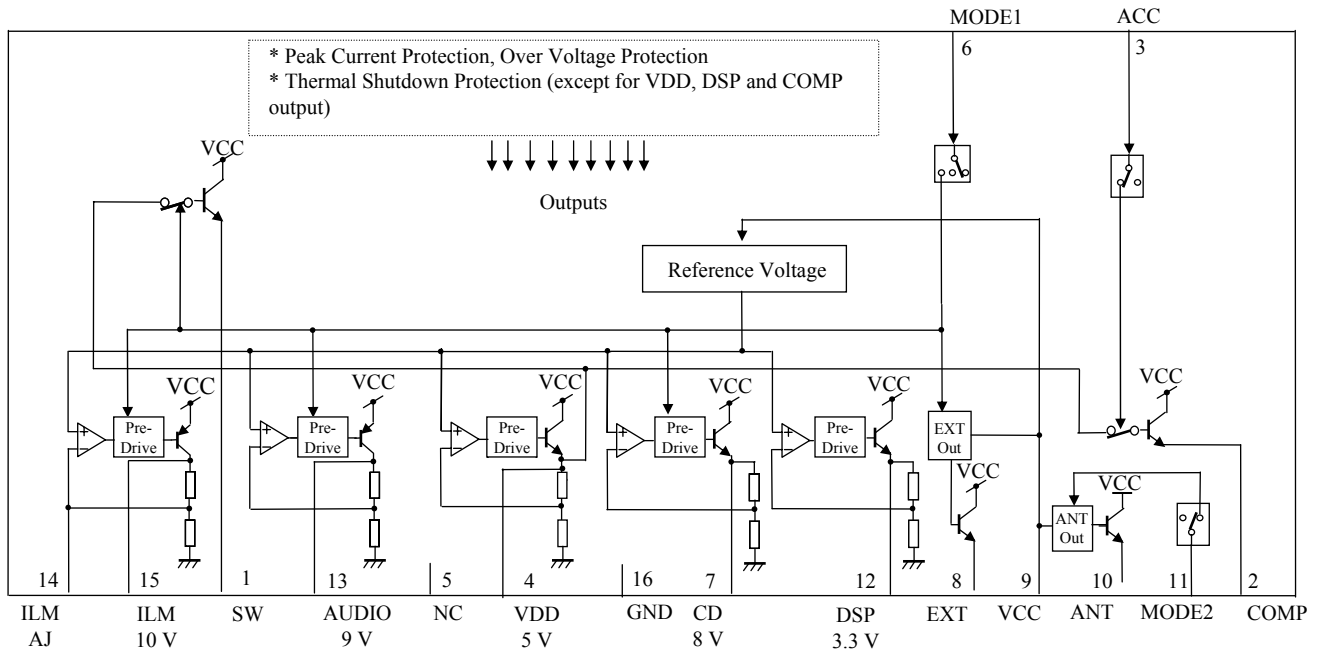
### ■ Type

Silicon monolithic bipolar IC

# Application Circuit Example



## ■ Block Diagram



## ■ Pin Description

Pin No.	Pin name	Type	Description
1	SW	Output	When Mode 1 pin is "M" and "H", SW output is $V_{DD}$ ( $I_O = 100$ mA)
2	COMP	Output	When ACC input pin is "H" COMP output is $V_{DD}$ ( $I_O = 100$ mA)
3	ACC	Input	"L": COMP Output OFF and "H": COMP Output ON
4	VDD	Output	5 V output voltage for a microcontroller ( $I_O = 100$ mA)
5	N.C.	—	Not connected to the IC die
6	MODE1	Input	Three-input "L", "M", and "H" control pin
7	CD	Output	When Mode 1 is "H" CD output is 8 V ( $I_O = 1\,200$ mA)
8	EXT	Output	When Mode 1 pin is "M" and "H", SW output is $V_{CC} - 1$ V ( $I_O = 300$ mA)
9	VCC	Power Supply	Connected to car BACKUP power supply
10	ANT	Output	When Mode 2 pin is "H" ANT output is $V_{CC} - 1$ V ( $I_O = 300$ mA)
11	MODE2	Input	"L": ANT Output OFF and "H": ANT Output ON
12	DSP	Output	3.3 V output voltage for DSP IC ( $I_O = 150$ mA)
13	AUDIO	Output	When Mode 1 pin is "M" and "H", AUDIO output is 9 V ( $I_O = 500$ mA)
14	ILM AJ	Input	A pin to adjust the ILM (illumination) output.
15	ILM	Output	When Mode 1 pin is "M" and "H", ILM output is 10 V ( $I_O = 300$ mA)
16	GND	Ground	Connected to the IC substrate

### ■ Absolute Maximum Ratings

A No.	Parameter	Symbol	Rating	Unit	Note
1	Supply voltage	$V_{CC}$	26.0	V	*1
2	Supply current	$I_{CC}$	5.2	A	*2
3	Power dissipation	$P_D$	16.25	W	*3
4	Operating ambient temperature	$T_{opr}$	-30 to +85	°C	*4
5	Storage temperature	$T_{stg}$	-55 to +150	°C	*4

Notes) \*1 : The values under the condition not exceeding the above absolute maximum ratings and the power dissipation.

\*2 : Over current limiting circuit built-in.

\*3 : The power dissipation shown is the value at  $T_a = 85^\circ\text{C}$  with  $4^\circ\text{C} / \text{Watt}$  heat sink.

When using this IC, refer to the  $P_D$ - $T_a$  diagram of the package standard and use under the condition not exceeding the allowable value.

\*4 : Except for the power dissipation, operating ambient temperature, and storage temperature, all ratings are for  $T_a = 25^\circ\text{C}$ .

### ■ Operating power supply range

Parameter	Symbol	Range	Unit	Note
Operating supply voltage range	$V_{CC}$	6.6 to 18.0	V	*5 *6

Note) \*5: ILM output is not regulated for  $V_{CC}$  below 10.5V

\*6: AUDIO and CD output might not be functioning well for  $V_{CC}$  below 10V

## Request for your special attention and precautions in using the technical information and semiconductors described in this book

- (1) If any of the products or technical information described in this book is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially, those with regard to security export control, must be observed.
- (2) The technical information described in this book is intended only to show the main characteristics and application circuit examples of the products, and no license is granted under any intellectual property right or other right owned by our company or any other company. Therefore, no responsibility is assumed by our company as to the infringement upon any such right owned by any other company which may arise as a result of the use of technical information described in this book.
- (3) The products described in this book are intended to be used for standard applications or general electronic equipment (such as office equipment, communications equipment, measuring instruments and household appliances).  
Consult our sales staff in advance for information on the following applications:
  - Special applications (such as for airplanes, aerospace, automobiles, traffic control equipment, combustion equipment, life support systems and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body.
  - Any applications other than the standard applications intended.
- (4) The products and product specifications described in this book are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.
- (5) When designing your equipment, comply with the range of absolute maximum rating and the guaranteed operating conditions (operating power supply voltage and operating environment etc.). Especially, please be careful not to exceed the range of absolute maximum rating on the transient state, such as power-on, power-off and mode-switching. Otherwise, we will not be liable for any defect which may arise later in your equipment.
  - ☐ Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.
- (6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS, thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. When using products for which damp-proof packing is required, satisfy the conditions, such as shelf life and the elapsed time since first opening the packages.
- (7) This book may be not reprinted or reproduced whether wholly or partially, without the prior written permission of Matsushita Electric Industrial Co., Ltd.