

AN5279

Mono channel SEPP audio power amplifier IC

■ Overview

The AN5279 is a monolithic integrated circuit designed for 5.0 W (19 V, 8 Ω) output audio power amplifier. It is a mono channel SEPP IC suitable for TV application.

■ Features

- Few external components :
 - No Boucherot cells(output C, R)
 - No Bootstrap Capacitors
 - No Negative Feedback Capacitors
- Built-in muting circuit
- Built-in stand-by circuit
- Built-in various protection circuits
(Load-short, thermal, over-voltage and current)
- High ripple rejection(55 dB)
- Operating voltage range 10 V to 24 V(19 V typ.)

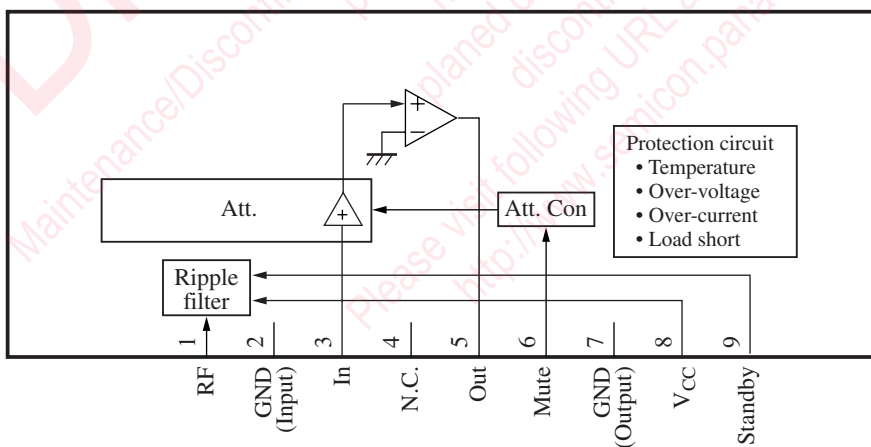
■ Applications

- TV

■ Package

- HSIP009-P-0000E

■ Block Diagram



■ Pin Descriptions

Pin No.	Descriptions	Pin No.	Descriptions
1	Ripple filter	6	Mute
2	Input GND	7	Output GND
3	Input	8	V _{CC}
4	Not connected	9	Standby
5	Output		

■ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Supply voltage	V _{CC}	26.0	V
Supply current	I _{CC}	1.6	A
Power dissipation *2	P _D	6.2	W
Operating ambient temperature *1	T _{opr}	-25 to +75	°C
Storage temperature *1	T _{stg}	-55 to +150	°C

Note) *1 : Except these items, all other measurements are taken at T_a = 25 °C.

*2 : T_a = 75 °C with infinite heat sink.

■ Recommended Operating Range

Parameter	Symbol	Range	Unit
Supply voltage	V _{CC}	10.0 to 24.0	V

■ Electrical Characteristics at $V_{CC} = 19\text{ V}$, $f = 1\text{ kHz}$, $R_L = 8\ \Omega$, $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Quiescent current	I_{CQ}	$V_{IN} = 0\text{ mV}$	—	25	50	mA
Output end noise voltage *1	V_{NO}	No input, $R_g = 10\text{ k}\Omega$	—	0.22	0.4	mV
Voltage gain	G_V	$V_{IN} = 57\text{ mV}$	32	34	36	dB
Total harmonic distortion	THD	$V_{IN} = 57\text{ mV}$	—	0.2	0.4	%
Maximum Output Power	P_{O1}	$V_{CC} = 19\text{ V}$, THD = 10 %	4.0	5.0	—	W
Maximum Output power	P_{O2}	$V_{CC} = 22\text{ V}$, THD = 10 %	5.6	7.0	—	W
Ripple rejection ratio *1	RR	$V_r = 1\text{ V}_{rms}$ $f_r = 120\text{ Hz}$, $R_g = 10\text{ k}\Omega$	45	55	—	dB
Muting Ratio	MR	$V_{IN} = 57\text{ mV}$, $V_{MUTE} > 3.0\text{ V}$	70	80	—	dB
Muting control voltage	V_{MUTE}	$V_{IN} = 57\text{ mV}$, MR > 70 dB	3.0	—	—	V
Standby on voltage	V_{STD-ON}	No input, $I_{CC} \leq 0.1\text{ mA}$	—	—	5.0	V
Standby off voltage	$V_{STD-OFF}$	No input, $I_{CC} \geq 9.5\text{ mA}$	8.5	—	—	V

Note) *1 : For this measurement, use the 20 Hz to 20 kHz (12 dB/OCT) filter.

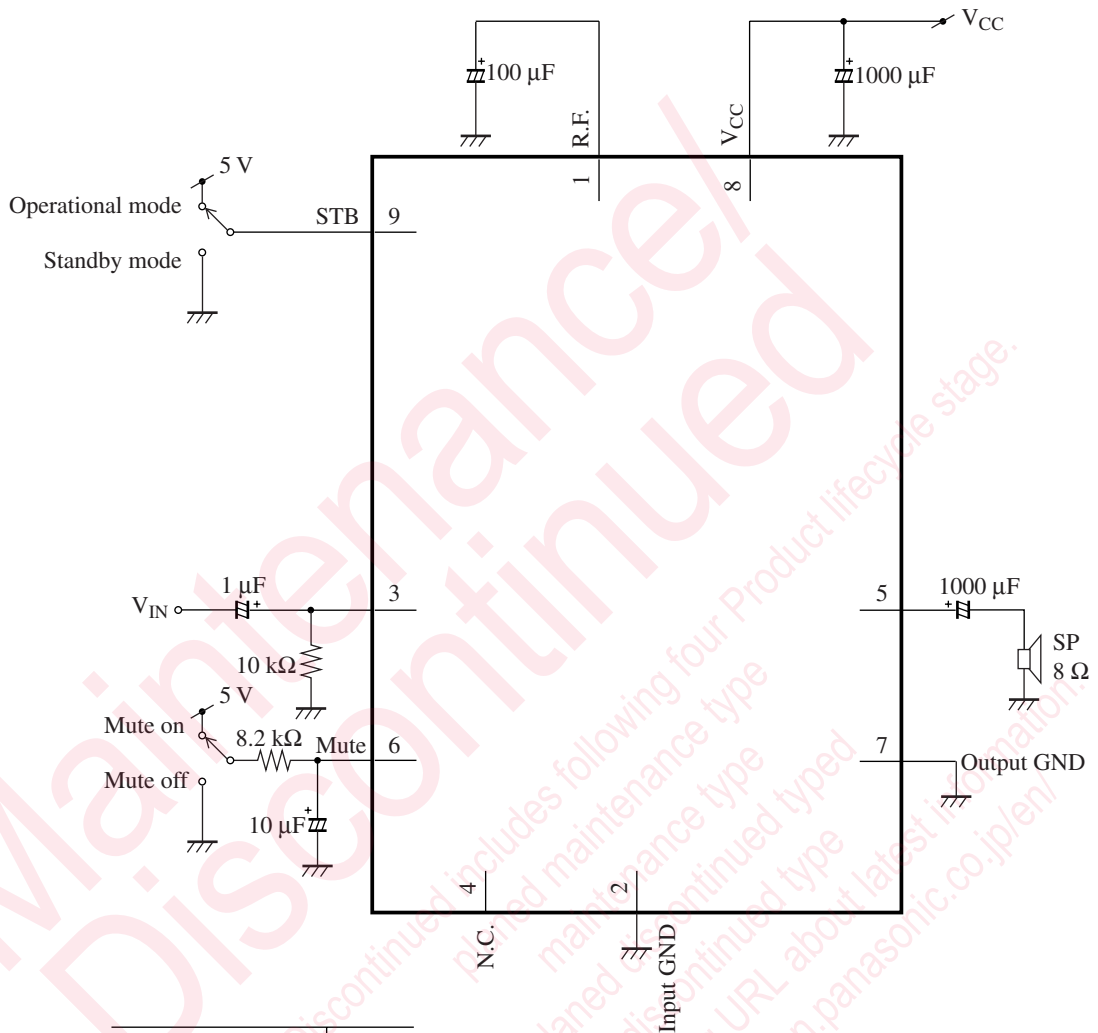
■ Terminal Equivalent Circuits

Pin No.	Equivalent circuit	Description	DC voltage (V)
1		<p>Ripple Filter</p> <p>This is the pin to connect the positive terminal of a ripple filter capacitor.</p>	$V_{CC} - 1.5V_{BE}$
2	—	<p>Input GND</p> <p>Input ground pin</p>	0
3		<p>Input</p> <p>This is the amplifier input pin.</p>	0
4	—	Not connected	—
5		<p>Output</p> <p>Output pin</p>	$V_{CC}/2$

■ Terminal Equivalent Circuits (continued)

Pin No.	Equivalent circuit	Description	DC voltage (V)
6		<p>Mute Mute input pin. Mute 'on' = 5 V Mute 'off' = 0 V</p>	—
7	—	<p>Output GND Output ground.</p>	0
8	—	<p>V_{CC} This is the power supply pin.</p>	19 V(typ.)
9		<p>Standby Standby control pin. Standby mode = 0 V Operational mode = V_{CC}</p>	—

■ Application Circuit Example



Operational mode	V _{CC}
Standby mode	0 V
Mute off	0 V
Mute on	5 V

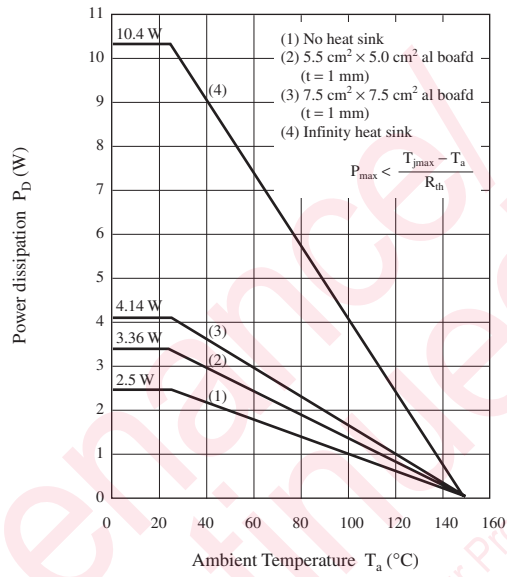
■ Usage notes

- 1) External heatsink is needed when used. External heatsink should be fixed to the chassis.
- 2) Fin of the IC can be connected to GND.
- 3) Please prevent "Output to V_{CC} short", "Output to GND short" and "Reverse Insertion" to avoid damaging the IC.
- 4) The temperature protection circuit will operate at T_J around 150 °C. However, if temperature decreases, the protection circuit would automatically be deactivated and resume normal operation.

■ Technical Information

- $P_D - T_a$ curves of HSI P009-P-0000E

$P_D - T_a$



Maintenance/Discontinued includes following four Product lifecycle stage.
 planned maintenance type
 maintenance type
 planned discontinued type
 discontinued type
 Please visit following URL about latest information.
<http://www.semicon.panasonic.co.jp/en/>

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.

单击下面可查看定价，库存，交付和生命周期等信息

[>>Panasonic\(松下\)](#)