Ordering number : ENN5672A

Monolithic Linear IC

LA5618

Multi-System Power Supply for Audio Equipment

Overview

The LA5618 is a multi-system power supply IC with a built-in on/off control function. It is optimal for use as the power supply IC in CD players, mini-component stereo systems, and other microcontroller controlled audio equipment.

Functions

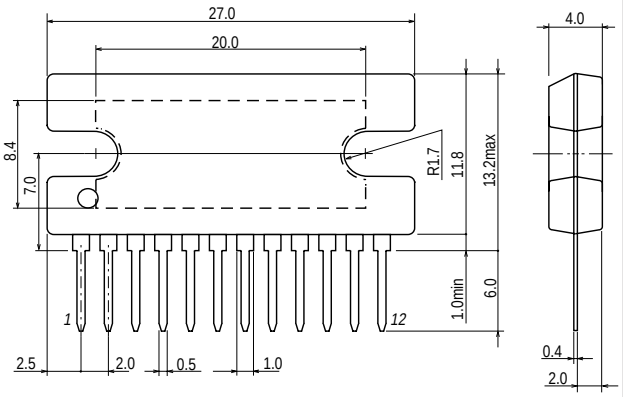
- Power supply IC with ±7.5 V outputs (±1.5 A) and an on/off control function.
- The LA5618 is pin compatible with the LA5617.

Package Dimensions

unit: mm

3049B-SIP12H

[LA5618]



SANYO: SIP12H

Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Input voltage	V_{CC}/V_{EE} max		±18	V
Allowable power dissipation	Pd max	With no heat sink	2.4	W
Operating temperature	Topr		–20 to +85	°C
Storage temperature	Tstg		–55 to +150	°C

Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Input voltage	V_{CC}/V_{EE}		±9.5 to ±16	V
Output current	$I_{OUT}1$		0 to 1.5	A
	$I_{OUT}2$		–1.5 to 0	A

■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

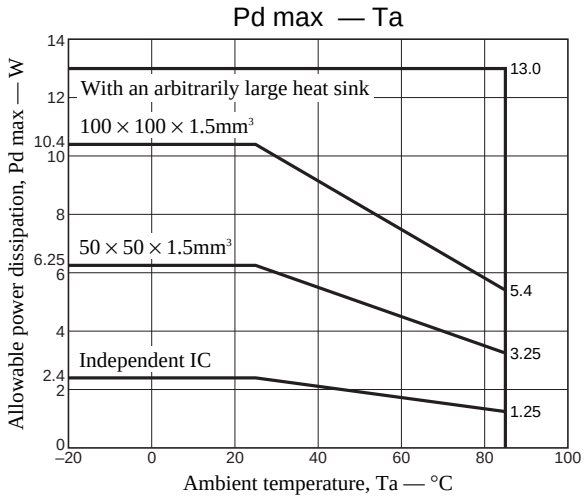
■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

SANYO Electric Co.,Ltd. Semiconductor Company

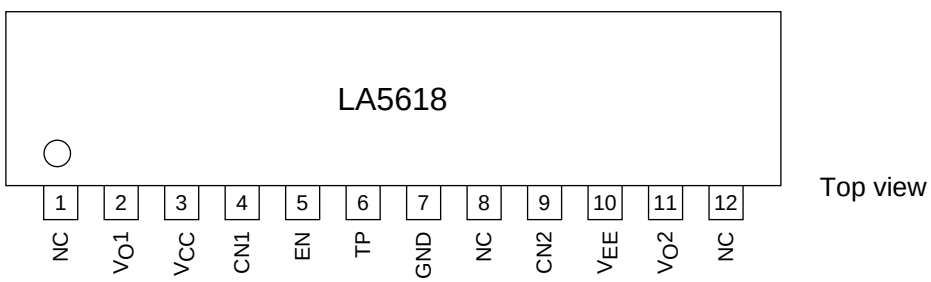
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Operating Characteristics at Ta = 25°C, V_{CC}/V_{EE} = ±9.5 V, in the specified test circuit.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[+7.5 V Power Supply Block] $I_{OUT}1$ = 500 mA, $C_{OUT}1$ = 100 µF						
Output voltage	V_O1		7.0	7.5	8.0	V
Dropout voltage	$V_{DROP}1$-1			1.5	2.0	V
	$V_{DROP}1$-2	$I_{OUT}1$ = 300 mA		1.0	1.5	V
Line regulation	$\Delta V_{OLN}1$	9 V ≤ V_{CC} ≤ 16 V		20	100	mV
Load regulation	$\Delta V_{OLD}1$	5 mA ≤ $I_{OUT}1$ ≤ 1 A		80	200	mV
Peak output current	$I_{OP}1$	V_{CC}/V_{EE} = ±12 V	1.5	1.8		A
Output short current	$I_{OSC}1$			1.0		A
Output off voltage	V_O1_{OFF}	V_{EN} = 0.4 V			0.3	V
Ripple rejection	Rrej1	f = 120 Hz, 8.5 V ≤ V_{CC} ≤ 16 V, CN1 = 1 µF		65		dB
[–7.5 V Power Supply Block] $I_{OUT}2$ = 500 mA, $C_{OUT}2$ = 100 µF						
Output voltage	V_O2		–8.0	–7.5	–7.0	V
Dropout voltage	$V_{DROP}2$-1			1.5	2.0	V
	$V_{DROP}2$-2	$I_{OUT}2$ = –300 mA		1.0	1.5	V
Line regulation	$\Delta V_{OLN}2$	–16 V ≤ V_{EE} ≤ –9 V		200	300	mV
Load regulation	$\Delta V_{OLD}2$	–1 A ≤ $I_{OUT}2$ ≤ –5 mA		80	200	mV
Peak output current	$I_{OP}2$	V_{CC}/V_{EE} = ±12 V		–1.8	–1.5	A
Output short current	$I_{OSC}2$			–1.0		A
Output off voltage	V_O2_{OFF}	V_{EN} = 0.4 V	–0.3			V
Ripple rejection	Rrej2	f = 120 Hz, 16 V ≤ V_{EE} ≤ –8.5 V, CN2 = 1 µF		50		dB
[Common Circuit Block] $C_{OUT}1$ = 100 µF, $C_{OUT}2$ = 100 µF						
Output off control voltage	V_{ENL}	V_O1, V_O2: Off			0.4	V
Current drain (positive voltage power supply block)	$I_{QP}1$	$I_{OUT}1$ = 0, $I_{OUT}2$ = 0		5.0		mA
	$I_{QP}2$	$I_{OUT}1$ = 1.5 A, $I_{OUT}2$ = 0		7.0		mA
Current drain (negative voltage power supply block)	$I_{QM}1$	$I_{OUT}1$ = 0, $I_{OUT}2$ = 0		–5.0		mA
	$I_{QM}2$	$I_{OUT}1$ = 0, $I_{OUT}2$ = –1.5 A		–12.0		mA



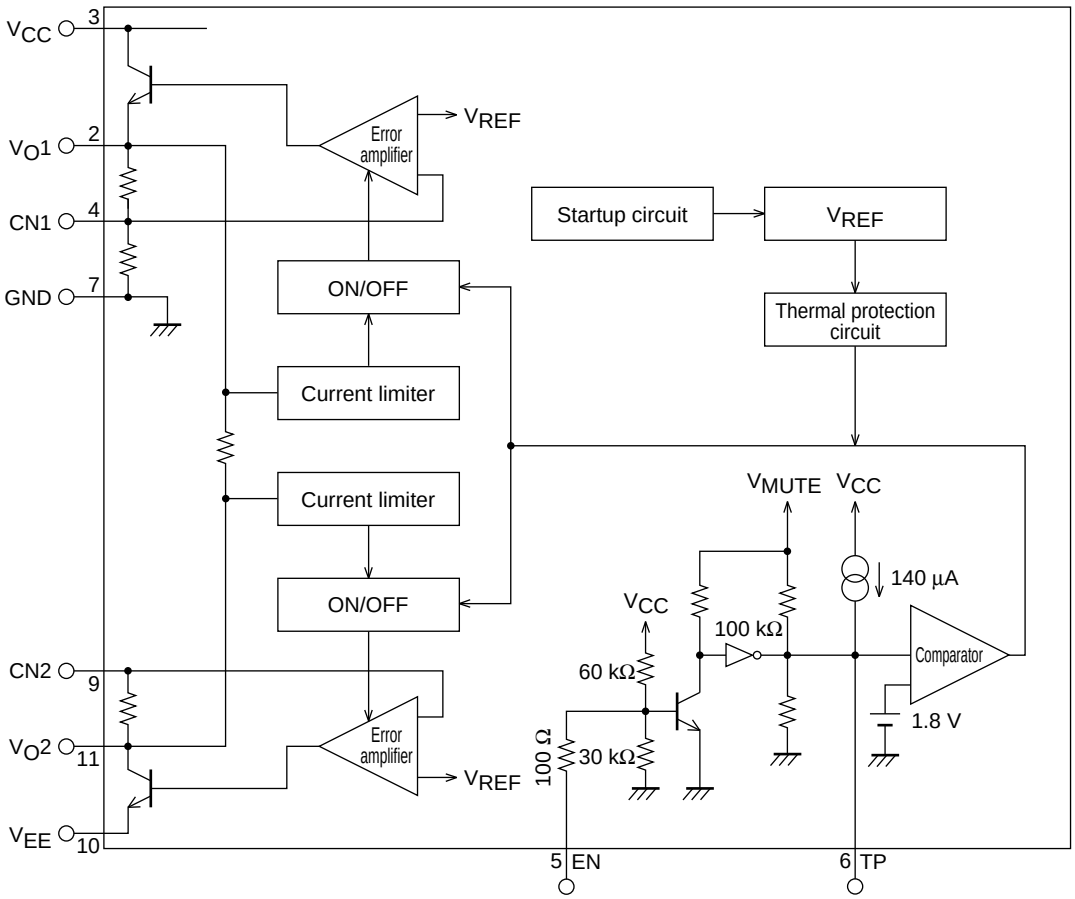
Pin Assignment



Note: The TP pin is used for IC testing. It must be left open during normal operation.
The NC pins must also be left open during normal operation.

A06997

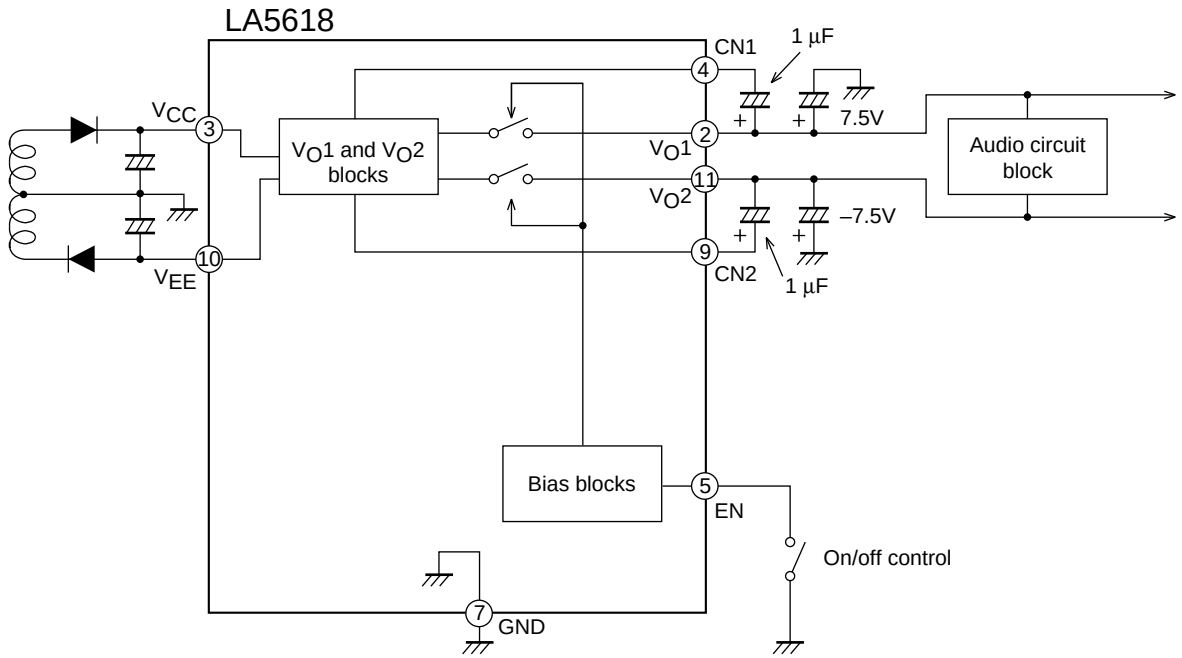
Equivalent Circuit Block Diagram



Note: The TP pin is used for IC testing.
It must be left open during normal operation.

A06998

Sample Application Circuit: Mini-component stereo system power supply



Notes: 1. The V_O1 and V_O2 output capacitors must have values of at least 100 µF and capacitors with low temperature coefficients must be used to prevent oscillation at low temperatures.
2. External noise can be suppressed and ripple rejection improved by adding capacitors between CN1 and V_O1 and between CN2 and V_O2.

- Specifications of any and all SANYO products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
- SANYO Electric Co., Ltd. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.
- In the event that any or all SANYO products (including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.
- No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of SANYO Electric Co., Ltd.
- Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the SANYO product that you intend to use.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of May, 2004. Specifications and information herein are subject to change without notice.