



SANYO Semiconductors

DATA SHEET

LA5617

Monolithic Linear IC
For Audio Equipment
Multi-System Power Supply

Overview

The LA5617 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 $\pm 7.5V$ outputs ($\pm 1.5A$) and an on/off control function.

Specifications

Maximum Ratings at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum input voltage	V_{CC}/V_{EE} max		± 18	V
Allowable power dissipation	P_d max	Independent IC	2.0	W
Operating temperature	T_{opr}		-20 to +50	$^\circ C$
Storage temperature	T_{stg}		-55 to +150	$^\circ C$

Operating Conditions at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Recommended input voltage	V_{CC}/V_{EE}		± 9.5 to ± 16	V
Output current	I_{OUT1}		0 to 1.5	A
	I_{OUT2}		-1.5 to 0	A

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LA5617

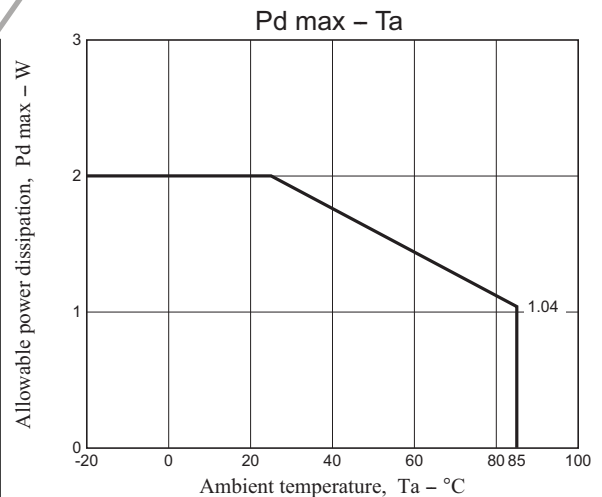
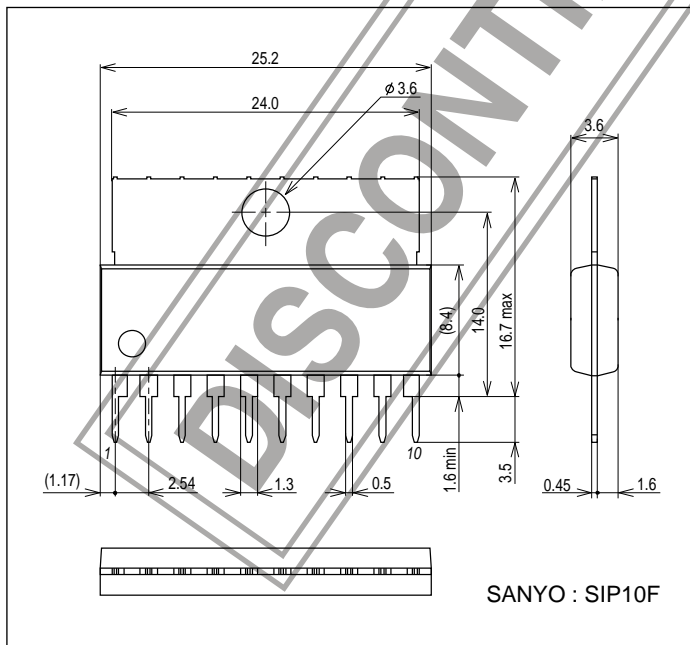
Electrical Characteristics at Ta = 25°C, VCC/V_{EE} = ±9.5V, in the specified test circuit.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
+7.5V power supply block [I _{OUT1} = 500mA, C _{OUT1} = 100μF]						
Output voltage	V _{O1}		7.0	7.5	8.0	V
Dropout voltage	V _{DROP1-1}			1.5	2.0	V
	V _{DROP1-2}	I _{OUT1} = 300mA		1.0	1.5	V
Line regulation	ΔV _{OLN1}	9V ≤ V _{CC} ≤ 16V		20	100	mV
Load regulation	ΔV _{OLD1}	5mA ≤ I _{OUT1} ≤ 1A		80	200	mV
Peak output current	I _{OP1}	V _{CC} /V _{EE} = ±12V	1.5	1.8		A
Output shot current	I _{OSC1}			1.0		A
Output off voltage	V _{O1 OFF}	V _{EN} = 0.4V			0.3	V
Ripple rejection	R _{rej1}	f = 120Hz, 8.5V ≤ V _{CC} ≤ 16V, C _{N1} = 1μF		65		dB
-7.5V power supply block [I _{OUT2} = 500mA, C _{OUT2} = 100μF]						
Output voltage	V _{O2}		-8.0	-7.5	-7.0	V
Dropout voltage	V _{DROP2-1}			1.5	2.0	V
	V _{DROP2-2}	I _{OUT2} = -300mA		1.0	1.5	V
Line regulation	ΔV _{OLN2}	-16V ≤ V _{EE} ≤ -9V		200	300	mV
Load regulation	ΔV _{OLD2}	-1A ≤ I _{OUT2} ≤ -5m		80	200	mV
Peak output current	I _{OP2}	V _{CC} /V _{EE} = ±12V		-1.8	-1.5	A
Output shot current	I _{OSC2}			-1.0		A
Output off voltage	V _{O2 OFF}	V _{EN} = 0.4V	-0.3			V
Ripple rejection	R _{rej2}	f = 120Hz, -16V ≤ V _{EE} ≤ -8.5V, C _{N2} = 1μF		50		dB
Common circuit block [C _{OUT1} = 100μF, C _{OUT2} = 100μF]						
Output on control	V _{ENH}	V _{O1} , V _{O2} : ON	1.0		V _{CC}	V
Output off control	V _{ENL}	V _{O1} , V _{O2} : OFF			0.4	V
Current drain (positive voltage power supply block)	I _{QP1}	I _{OUT1} = 0, I _{OUT2} = 0		5.0		mA
	I _{QP2}	I _{OUT1} = 1.5A, I _{OUT2} = 0		7.0		mA
Current drain (negative voltage power supply block)	I _{QM1}	I _{OUT1} = 0, I _{OUT2} = 0		-5.0		mA
	I _{QM2}	I _{OUT1} = 0, I _{OUT2} = -1.5A		-12.0		mA

Package Dimensions

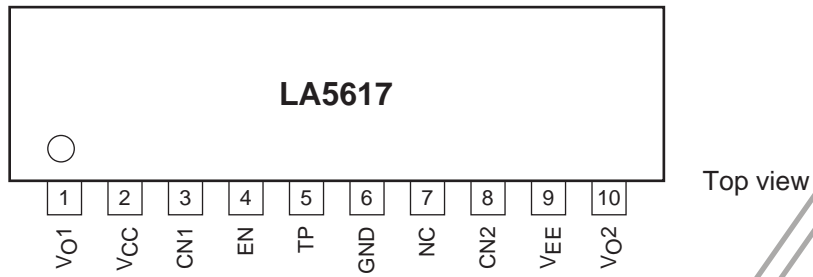
unit : mm (typ)

3046D



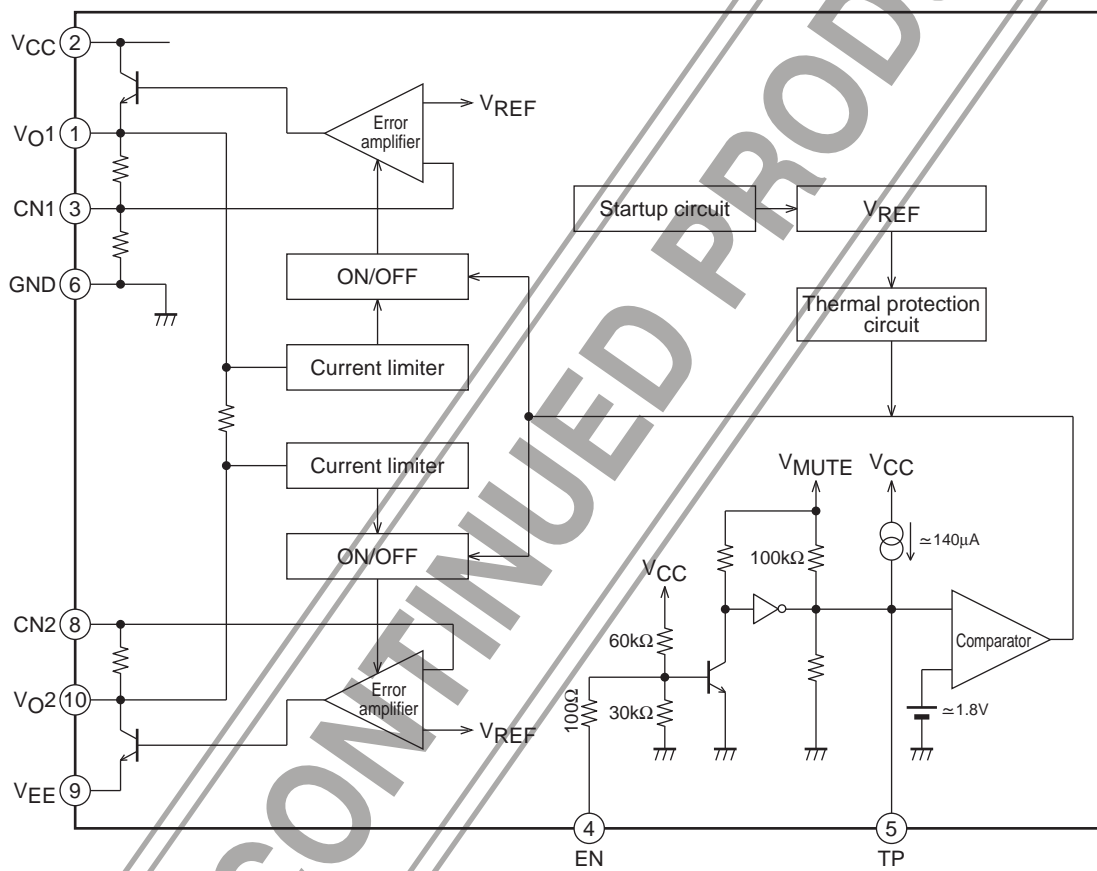
LA5617

Pin Assignment



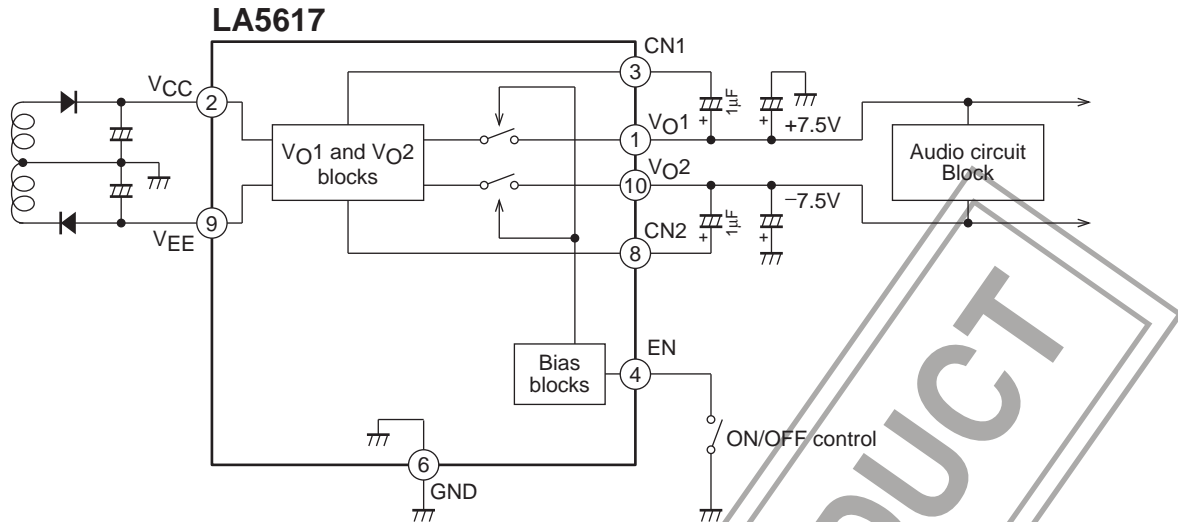
Note: The TP pin is used for IC testing.
It must be left open during normal operation.

Block Diagram



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

Application Circuit Example: Mini-component stereo system power supply



- Notes:
1. A capacitor with a low temperature coefficient must be used as the EN DELAY delay capacitor.
 2. The V_{O1} and V_{O2} output capacitors must have values of at least 100 μ F and capacitors with low temperature coefficients must be used to prevent oscillation at low temperatures.
 3. External noise can be suppressed and ripple rejection improved by adding capacitors between CN1 and V_{O1} and between CN2 and V_{O2}.

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