

SANYO**LA5668****Multifunctional Voltage Regulator****Overview**

The LA5668 is a multifunctional voltage regulator IC especially suited for use in portable musical instrument applications.

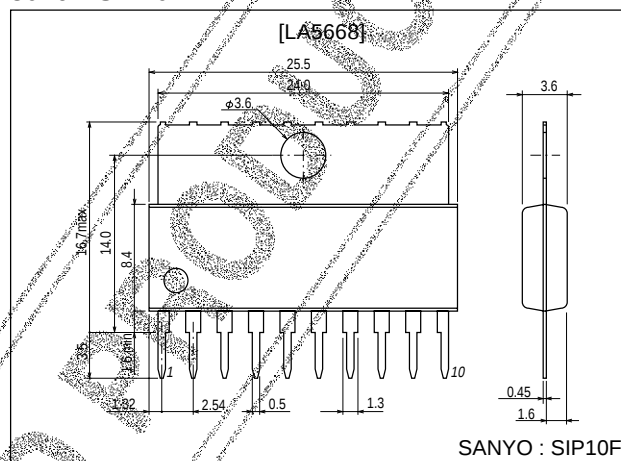
Functions and Features

- Power output : 1.0A
- Analog output : 5.5V, 0.1A
- Digital output : 5.0V, 0.1A
- Low I_{CC} at power-OFF mode (APO=OFF) : 35 μ A typ

Package Dimensions

unit:mm

3046B-SIP10F

**Specifications**Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Input voltage	$V_{IN\ max}$		18	V
	$V_{DIN\ max}$		18	V
Output current	$I_{CO\ max}$		1.0	A
	$I_{AO\ max}$		100	mA
	$I_{DO\ max}$		100	mA
Allowable power dissipation	$P_d\ max$		2.45	W
Operating temperature	T_{opr}		-30 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to +125	$^\circ\text{C}$

Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Input voltage	V_{IN}		7.0 to 15	V
	V_{DIN}		7.0 to 15	V
APO pin on-state voltage	$V_{APO\ ON}$		2 to V_{IN}	V
APO pin off-state voltage	$V_{APO\ OFF}$		-0.3 to +0.3	V

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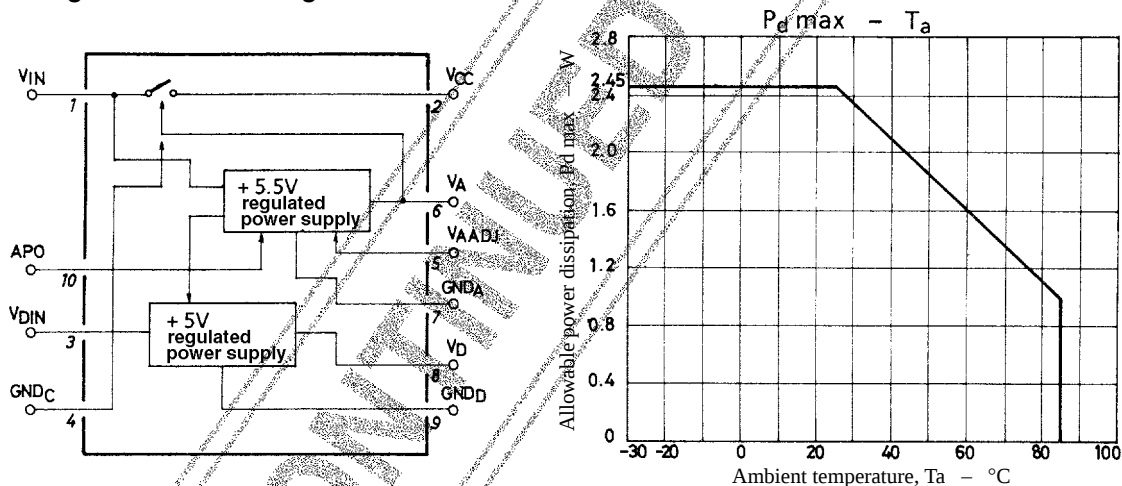
SANYO Electric Co.,Ltd. Semiconductor Company

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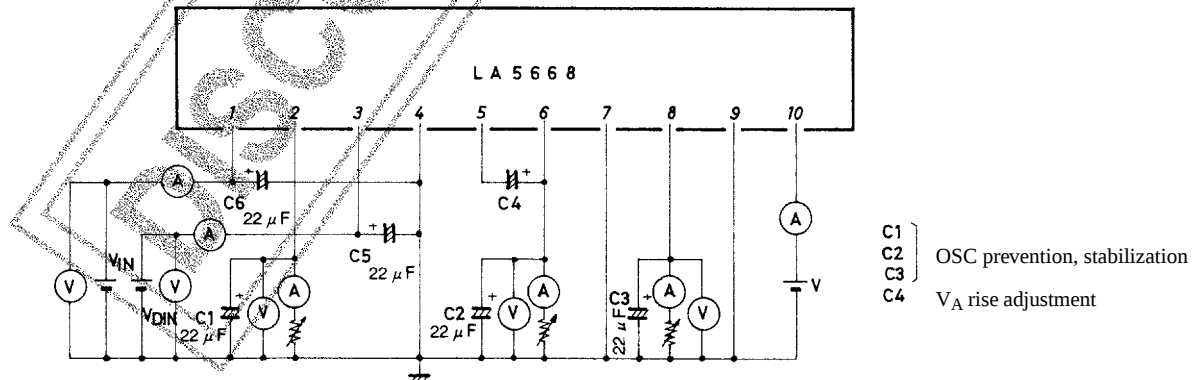
Operating Characteristics at $T_a = 25^\circ\text{C}$ ($V_{\text{IN}}=V_{\text{DIN}}=V_{\text{APO}}=9\text{V}$, $C_1=C_2=C_3=22\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	I_{CC1}	$V_{\text{APO}}=0\text{V}$		35	50	μA
	I_{CC2}	$V_{\text{APO}}=V_{\text{IN}}$		8.0	11.0	mA
Output voltage	V_{AO}	$I_{\text{AO}}=50\text{mA}$	5.05	5.5	5.95	V
	V_{D1O}	$V_{\text{APO}}=0\text{V}$, $I_{\text{DO}}=5\text{mA}$	4.55	5.0	5.45	V
	V_{D2O}	$V_{\text{APO}}=V_{\text{IN}}$, $I_{\text{DO}}=50\text{mA}$	4.55	5.0	5.45	V
	$V_{\text{AO Line}}$	$7.0 \leq V_{\text{IN}} \leq 13\text{V}$, $I_{\text{AO}}=50\text{mA}$			50	mV
Line regulation	$V_{\text{D1O Line}}$	$7.0 \leq V_{\text{IN}} \leq 13\text{V}$, $V_{\text{APO}}=0\text{V}$, $I_{\text{DO}}=5\text{mA}$			50	mV
	$V_{\text{D2O Line}}$	$7.0 \leq V_{\text{IN}} \leq 13\text{V}$, $V_{\text{APO}}=V_{\text{IN}}$, $I_{\text{DO}}=50\text{mA}$			50	mV
Load regulation	$V_{\text{A1 Load}}$	$1 \leq I_{\text{A1O}} \leq 40\text{mA}$			50	mV
	$V_{\text{A2 Load}}$	$1 \leq I_{\text{A2O}} \leq 80\text{mA}$			100	mV
	$V_{\text{D1O Load}}$	$1 \leq I_{\text{DO}} \leq 10\text{mA}$, $V_{\text{APO}}=0\text{V}$			50	mV
	$V_{\text{D2O Load}}$	$1 \leq I_{\text{DO}} \leq 80\text{mA}$, $V_{\text{APO}}=V_{\text{IN}}$			50	mV
Input-output voltage difference	V_{dA}	$V_{\text{IN}}-V_{\text{O}}$ at $V_{\text{d}}: V_{\text{O}} 5\% \text{ OFF}$, $I_{\text{AO}}=50\text{mA}$		0.9	1.2	V
	V_{dD}	$V_{\text{IN}}-V_{\text{O}}$ at $V_{\text{d}}: V_{\text{O}} 5\% \text{ OFF}$, $I_{\text{DO}}=50\text{mA}$		0.9	1.2	V
	V_{dOC}	$I_{\text{CD}}=500\text{mA}$, $V_{\text{IN}}-V_{\text{D}}$ at $V_{\text{IN}}=9\text{V}$		1.1	1.6	V
Ripple rejection	R_{rA}	$f=50\text{Hz}$, 120Hz , $I_{\text{AO}}=100\text{mA}$		40		dB
	R_{rD}	$f=50\text{Hz}$, 120Hz , $I_{\text{DO}}=100\text{mA}$		45		dB
APO input current	I_{APO}	$V_{\text{APO}}=5\text{V}$	66	86	123	μA
V_{C} on-state voltage	$V_{\text{C ON}}$	V_{A} voltage at $V_{\text{APO}}=0\text{V}$	1.5			V
V_{C} off-state voltage	$V_{\text{C OFF}}$	V_{A} voltage at $V_{\text{APO}}=0\text{V}$			0.5	V
$V_{\text{A}}-V_{\text{D}}$ voltage	$V_{\text{A}}-V_{\text{D}}$	$I_{\text{AO}}=25\text{mA}$, $I_{\text{DO}}=15\text{mA}$ at $V_{\text{CC}}=5.5\text{V}$, 9V	-0.3			V

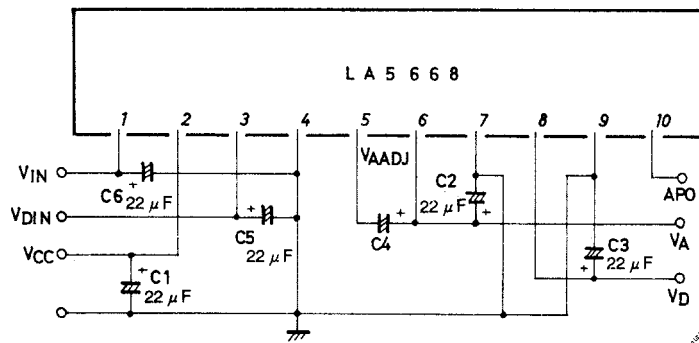
Block Diagram and Pin Assignment



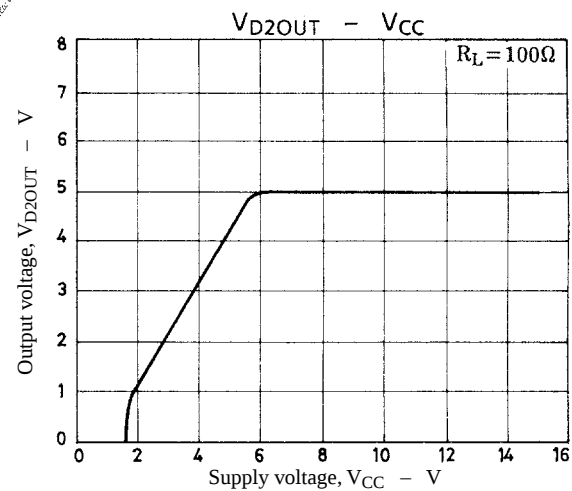
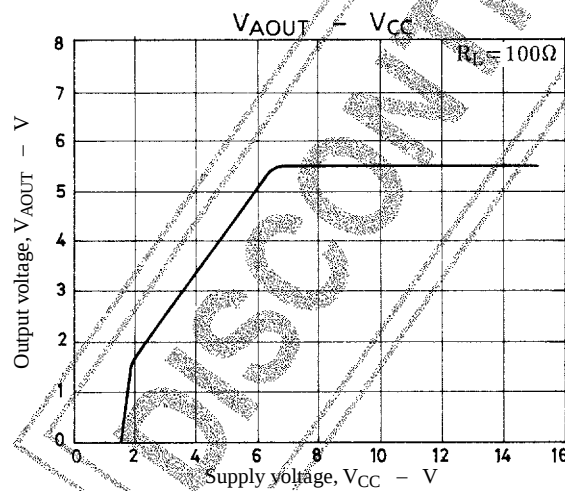
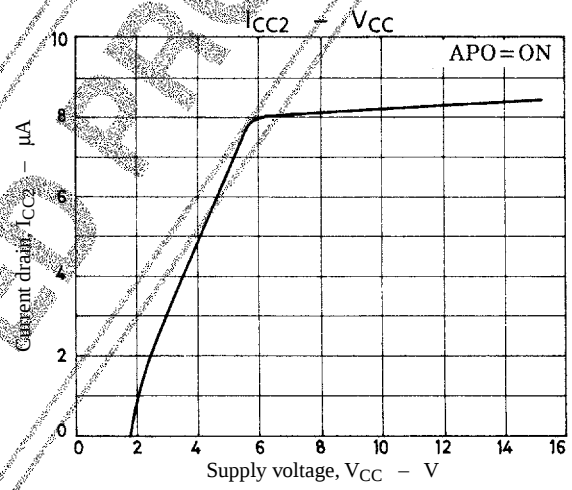
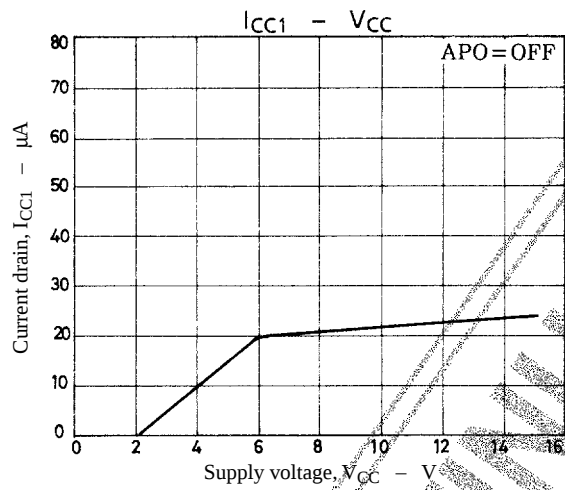
Test Circuit

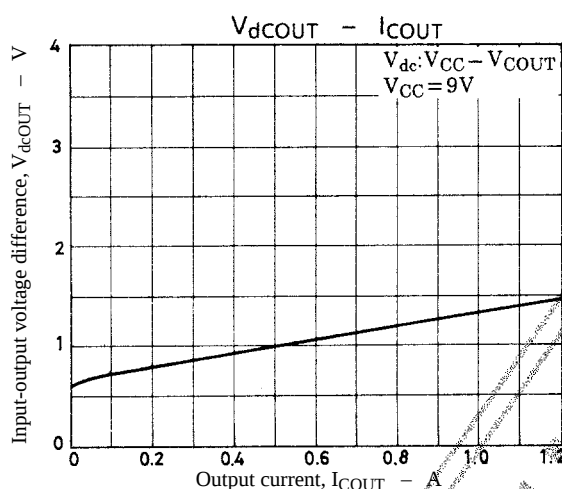
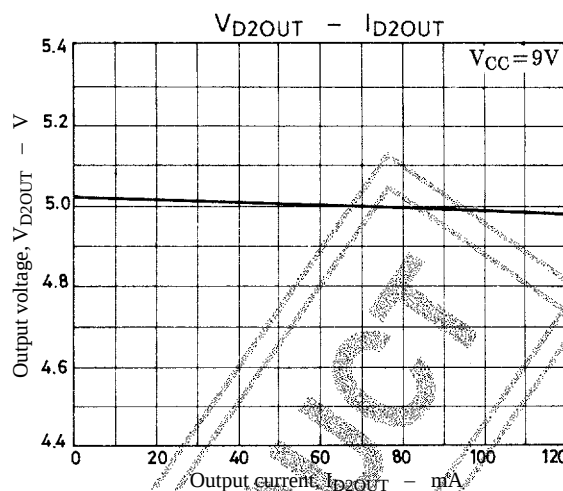
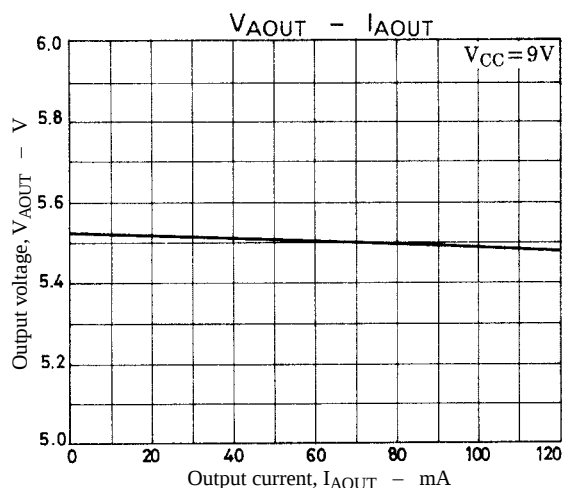


Sample Application Circuit



C1, C2, C3, C4 } OSC prevention, stabilization
VA rise adjustment





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