

No.3238

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

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

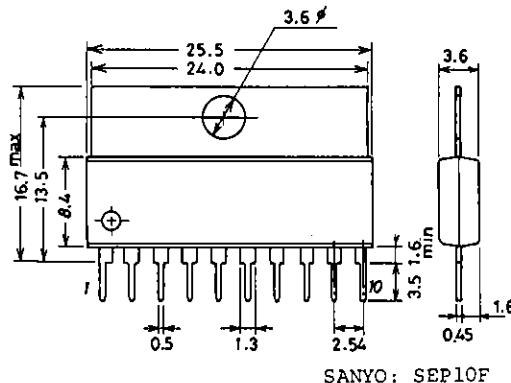
Maximum Ratings at $T_a = 25^\circ\text{C}$

		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 $T_a = 25^\circ\text{C}$

		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

Package Dimensions 3046A-S10FIC
(unit: mm)



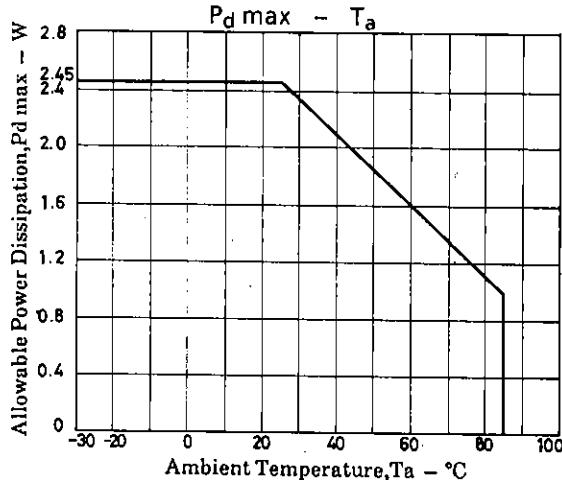
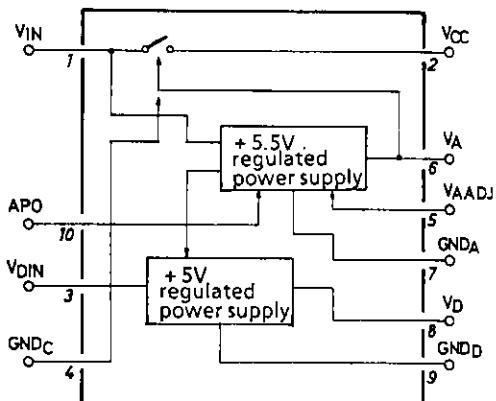
SANYO: SEP10F

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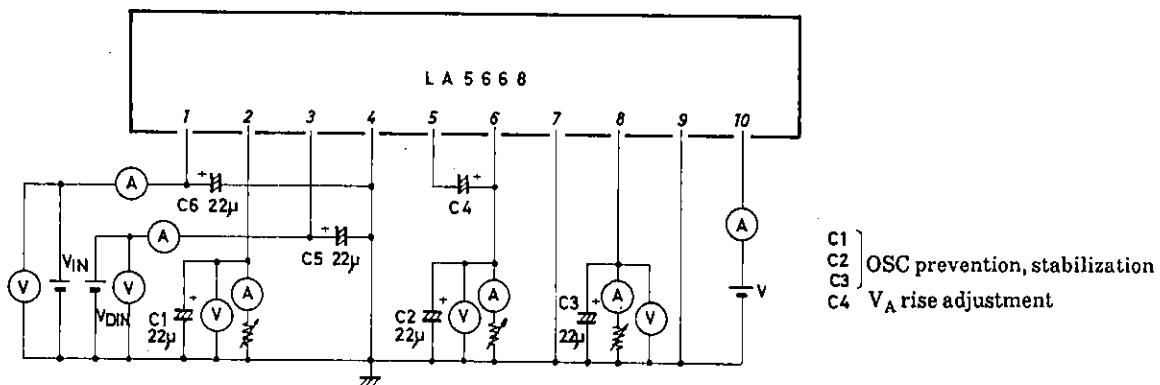
Operating Characteristics at $T_a = 25^\circ\text{C}$ $(V_{IN} = V_{DIN} = V_{APO} = 9\text{V}, C_1 = C_2 = C_3 = 22\mu\text{F}$ unless otherwise specified)

			min	typ	max	unit
Quiescent Current	I_{CC1}	$V_{APO} = 0\text{V}$		35	50	μA
	I_{CC2}	$V_{APO} = V_{IN}$		8.0	11.0	mA
Output Voltage	V_{AO}	$I_{AO} = 50\text{mA}$	5.05	5.5	5.95	V
	V_{D10}	$V_{APO} = 0\text{V}, I_{DO} = 5\text{mA}$	4.55	5.0	5.45	V
	V_{D20}	$V_{APO} = V_{IN}, I_{DO} = 50\text{mA}$	4.55	5.0	5.45	V
Line Regulation	V_{AO} Line	$7.0 \leq V_{IN} \leq 13\text{V}, I_{AO} = 50\text{mA}$		50		mV
	V_{D10} Line	$7.0 \leq V_{IN} \leq 13\text{V}, V_{APO} = 0\text{V}, I_{DO} = 5\text{mA}$		50		mV
	V_{D20} Line	$7.0 \leq V_{IN} \leq 13\text{V}, V_{APO} = V_{IN}, I_{DO} = 50\text{mA}$		50		mV
Load Regulation	V_{A1} Load	$1 \leq I_{AO} \leq 40\text{mA}$		50		mV
	V_{A2} Load	$1 \leq I_{AO} \leq 80\text{mA}$		100		mV
	V_{D10} Load	$1 \leq I_{DO} \leq 10\text{mA}, V_{APO} = 0\text{V}$		50		mV
	V_{D20} Load	$1 \leq I_{DO} \leq 80\text{mA}, V_{APO} = V_{IN}$		50		mV
Input-Output Voltage Difference	V_{dA}	$V_{IN} - V_O$ at $V_d: V_O$ 5% OFF, $I_{AO} = 50\text{mA}$	0.9	1.2		V
	V_{dD}	$V_{IN} - V_O$ at $V_d: V_O$ 5% OFF, $I_{DO} = 50\text{mA}$	0.9	1.2		V
	V_{dOC}	$I_{CD} = 500\text{mA}, V_{IN} - V_D$ at $V_{IN} = 9\text{V}$	1.1	1.6		V
Ripple Rejection	R_{rA}	$f = 50\text{Hz}, 120\text{Hz}, I_{AO} = 100\text{mA}$	40			dB
	R_{rD}	$f = 50\text{Hz}, 120\text{Hz}, I_{DO} = 100\text{mA}$	45			dB
APO Input Current	I_{APO}	$V_{APO} = 5\text{V}$	66	86	123	μA
V_C ON-State Voltage	V_C ON	V_A voltage at $V_{APO} = 0\text{V}$	1.5			V
V_C OFF-State Voltage	V_C OFF	V_A voltage at $V_{APO} = 0\text{V}$			0.5	V
$V_A - V_D$ Voltage	$V_A - V_D$	$I_{AO} = 25\text{mA}, I_{DO} = 15\text{mA}$ at $V_{CC} = 5.5\text{V}, 9\text{V}$	-0.3			V

Block Diagram and Pin Assignment

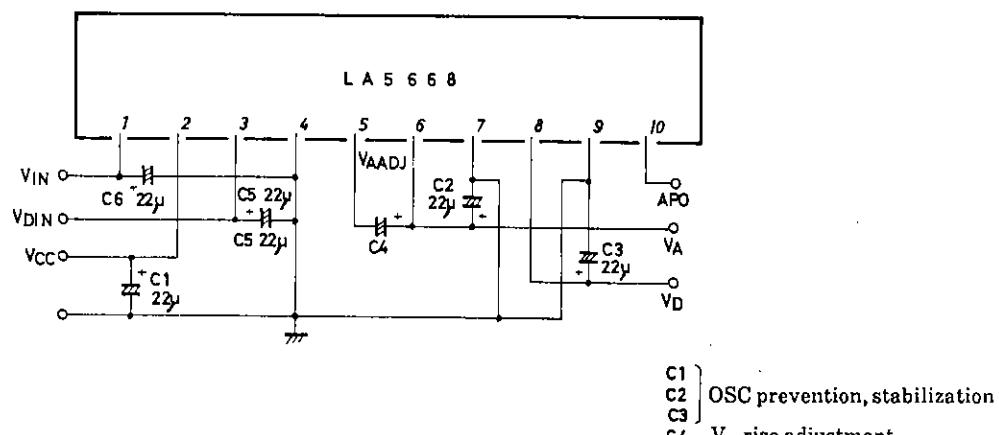


Test Circuit

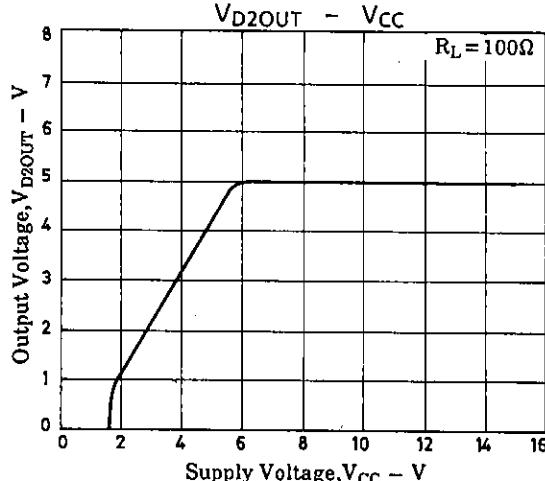
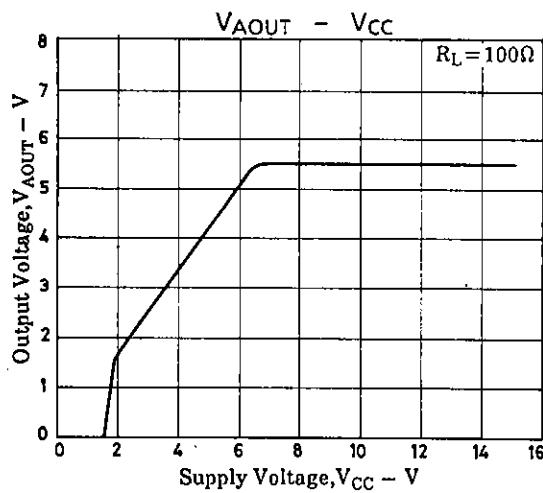
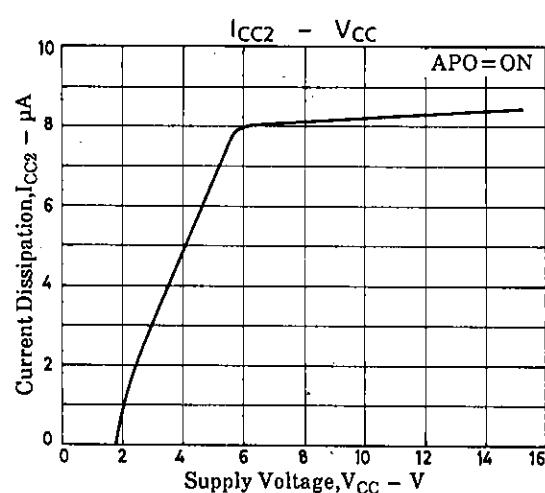
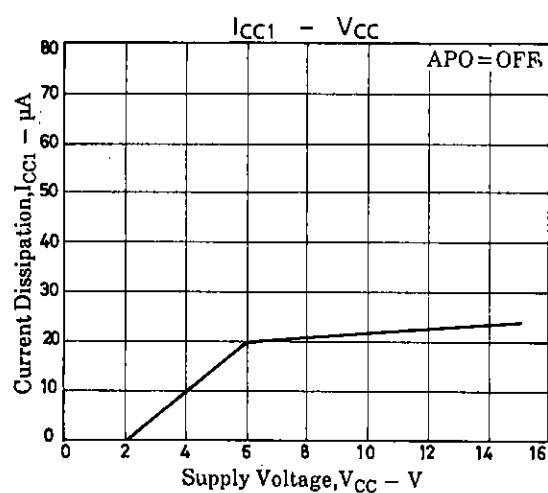


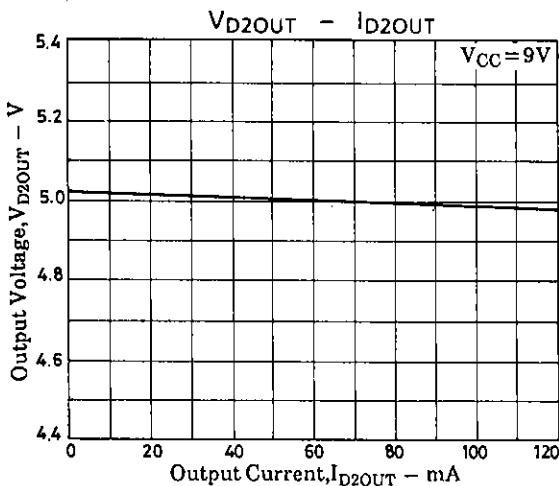
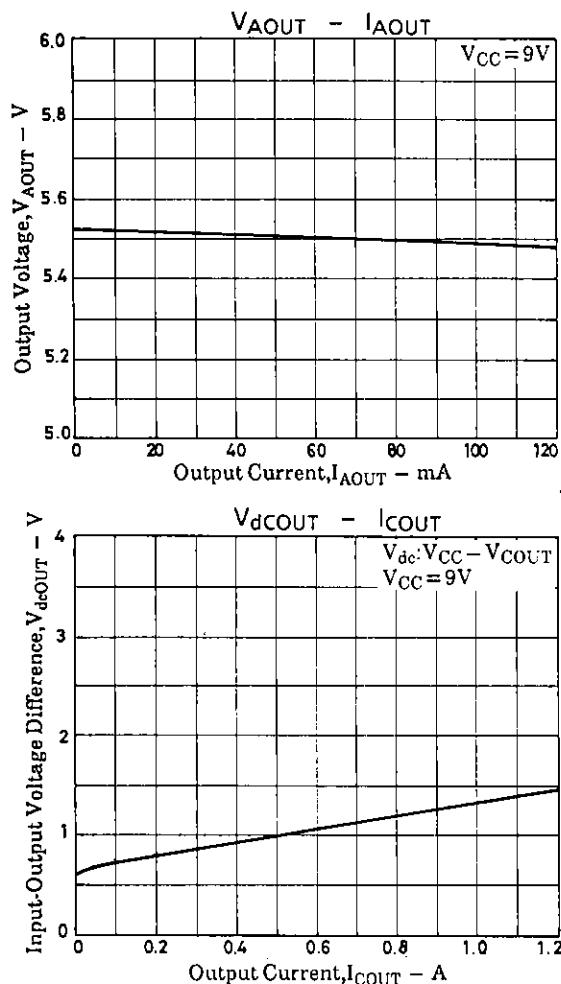
Unit (capacitance: F)

Sample Application Circuit



Unit (capacitance: F)





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