Ordering number: EN 3238

Monolithic Linear IC

SANYO No.3238

LA5668

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) : 35μA typ

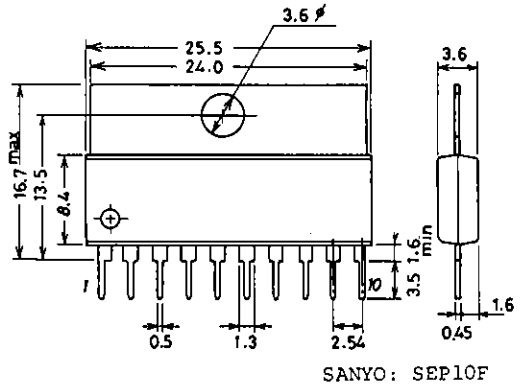
Maximum Ratings at Ta = 25°C

			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	Pd max	2.45	W
Operating Temperature	**Topr**	−30 to +85	°C
Storage Temperature	Tstg	−40 to +125	°C

Operating Conditions at Ta = 25°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)



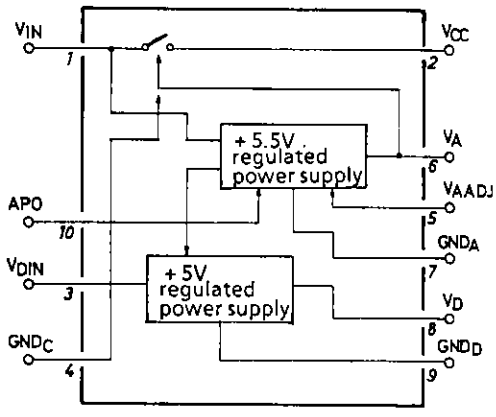
SANYO: SEP10F

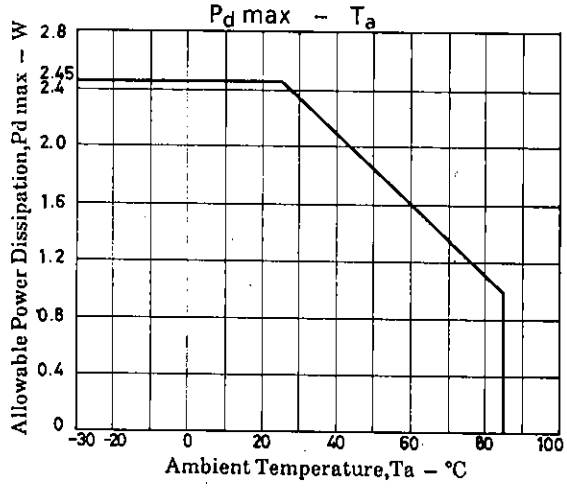
Operating Characteristics at Ta = 25°C

($V_{IN} = V_{DIN} = V_{APO} = 9V$, C1 = C2 = C3 = 22µF unless otherwise specified)

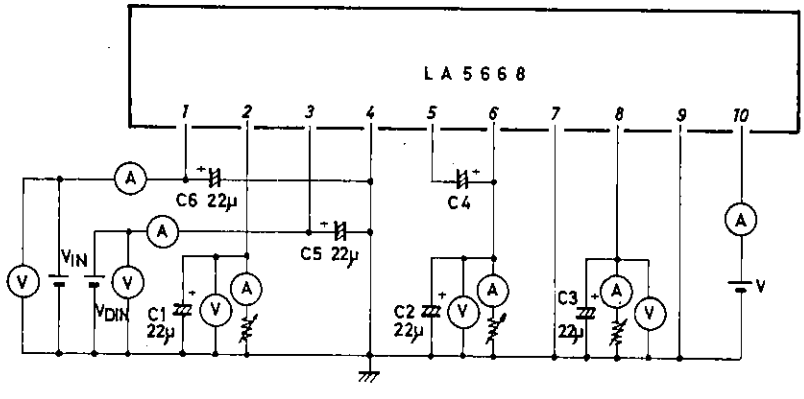
			min	typ	max	unit
Quiescent Current	I_{CC1}	$V_{APO} = 0V$		35	50	µA
	I_{CC2}	$V_{APO} = V_{IN}$		8.0	11.0	mA
Output Voltage	V_{AO}	$I_{AO} = 50mA$	5.05	5.5	5.95	V
	V_{D1O}	$V_{APO} = 0V, I_{DO} = 5mA$	4.55	5.0	5.45	V
	V_{D2O}	$V_{APO} = V_{IN}, I_{DO} = 50mA$	4.55	5.0	5.45	V
Line Regulation	V_{AO} Line	$7.0 \leqq V_{IN} \leqq 13V, I_{AO} = 50mA$			50	mV
	V_{D1O} Line	$7.0 \leqq V_{IN} \leqq 13V, V_{APO} = 0V, I_{DO} = 5mA$			50	mV
	V_{D2O} Line	$7.0 \leqq V_{IN} \leqq 13V, V_{APO} = V_{IN}, I_{DO} = 50mA$			50	mV
Load Regulation	V_{A1} Load	$1 \leqq I_{A1O} \leqq 40mA$			50	mV
	V_{A2} Load	$1 \leqq I_{A2O} \leqq 80mA$			100	mV
	V_{D1O} Load	$1 \leqq I_{DO} \leqq 10mA, V_{APO} = 0V$			50	mV
	V_{D2O} Load	$1 \leqq I_{DO} \leqq 80mA, V_{APO} = V_{IN}$			50	mV
Input-Output Voltage Difference	V_{dA}	V_{IN}-V_O at V_d:V_O 5% OFF, $I_{AO} = 50mA$		0.9	1.2	V
	V_{dD}	V_{IN}-V_O at V_d:V_O 5% OFF, $I_{DO} = 50mA$		0.9	1.2	V
	V_{dOC}	$I_{CD} = 500mA, V_{IN}$-V_D at $V_{IN} = 9V$		1.1	1.6	V
Ripple Rejection	R_{rA}	f = 50Hz,120Hz, $I_{AO} = 100mA$		40		dB
	R_{rD}	f = 50Hz,120Hz, $I_{DO} = 100mA$		45		dB
APO Input Current	I_{APO}	$V_{APO} = 5V$	66	86	123	µA
V_C ON-State Voltage	V_C ON	V_A voltage at $V_{APO} = 0V$	1.5			V
V_C OFF-State Voltage	V_C OFF	V_A voltage at $V_{APO} = 0V$			0.5	V
V_A-V_D Voltage	V_A-V_D	$I_{AO} = 25mA, I_{DO} = 15mA$ at $V_{CC} = 5.5V, 9V$	−0.3			V

Block Diagram and Pin Assignment





Test Circuit

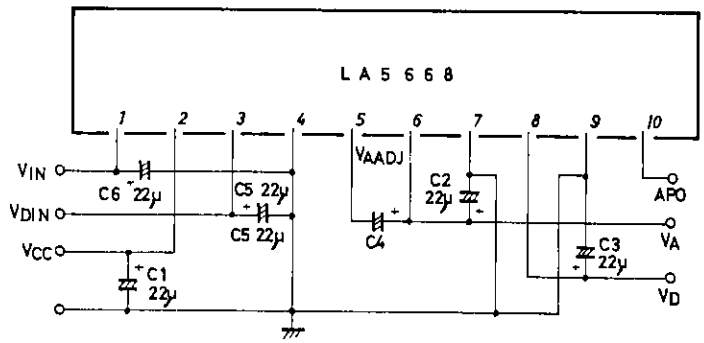


C1, C2, C3: OSC prevention, stabilization

C4: V_A rise adjustment

Unit (capacitance: F)

Sample Application Circuit



C1, C2, C3: OSC prevention, stabilization
C4: V_A rise adjustment

Unit (capacitance: F)