

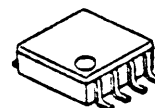
3OUTPUT LOW DROPOUT VOLTAGE REGULATOR

■GENERAL DESCRIPTION

The NJM2894 is a 3ch low dropout voltage regulator with ON/OFF Control in TVSP-8 package.

It is suitable for camcorder, IC decoder, camera and other portable items.

■PACKAGE OUTLINE

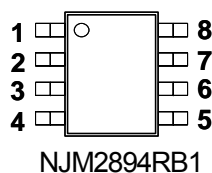


NJM2894RB1

■FEATURES

- High Ripple Rejection 75dB typ. at $f=1\text{kHz}$
- Low Noise 45 μV_{rms} typ.
- Output capacitor with 1.0 μF ceramic capacitor at $V_o \geq 2.7\text{V}$
- Output Current $I_o(\text{max.}) = \text{ch1}=150\text{mA}, \text{ch2,3}=80\text{mA}$
- High Precision Output $\pm 1.0\%$
- Low Dropout Voltage 0.1V typ. at $I_o=60\text{mA}$
- ON/OFF Control
- Internal Thermal Overload Protection
- Internal Short Circuit Current Limit
- Bipolar Technology
- Package Outline TVSP-8

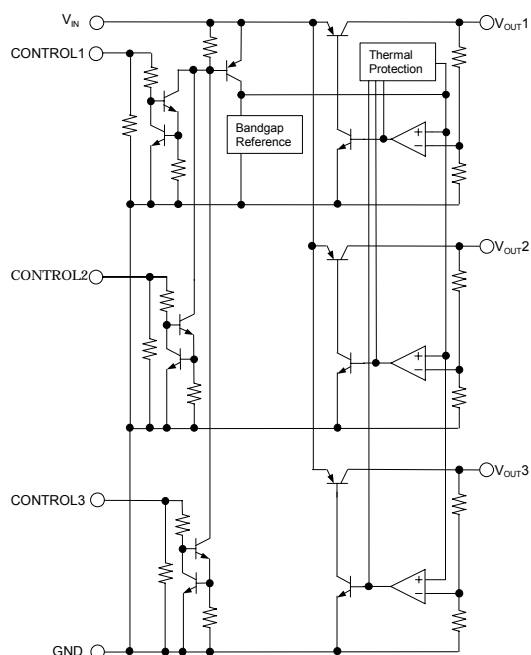
■PIN CONFIGURATION



PIN FUNCTION

1. V_{OUT1}	5. CONTROL3
2. V_{OUT2}	6. CONTROL2
3. V_{OUT3}	7. CONTROL1
4. GND	8. V_{IN}

■EQUIVALENT CIRCUIT



■ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V_{IN}	+14	V
Control Voltage	V_{CONT}	+14(note1)	V
Power Dissipation	P_D	320	mW
Operating Temperature	T_{opr}	-40 to +85	°C
Storage Temperature	T_{stg}	-40 to +125	°C

(note1) When input voltage is less than +14V, the absolute maximum control voltage is equal to the input voltage.

■ELECTRICAL CHARACTERISTICS

($V_{IN}=V_o+1V$, $C_{IN}=0.1\mu F$, $C_o=1.0\mu F$: $V_o\geq 2.7V$ ($C_o=2.2\mu F$: $V_o\leq 2.6V$), $T_a=25^\circ C$)

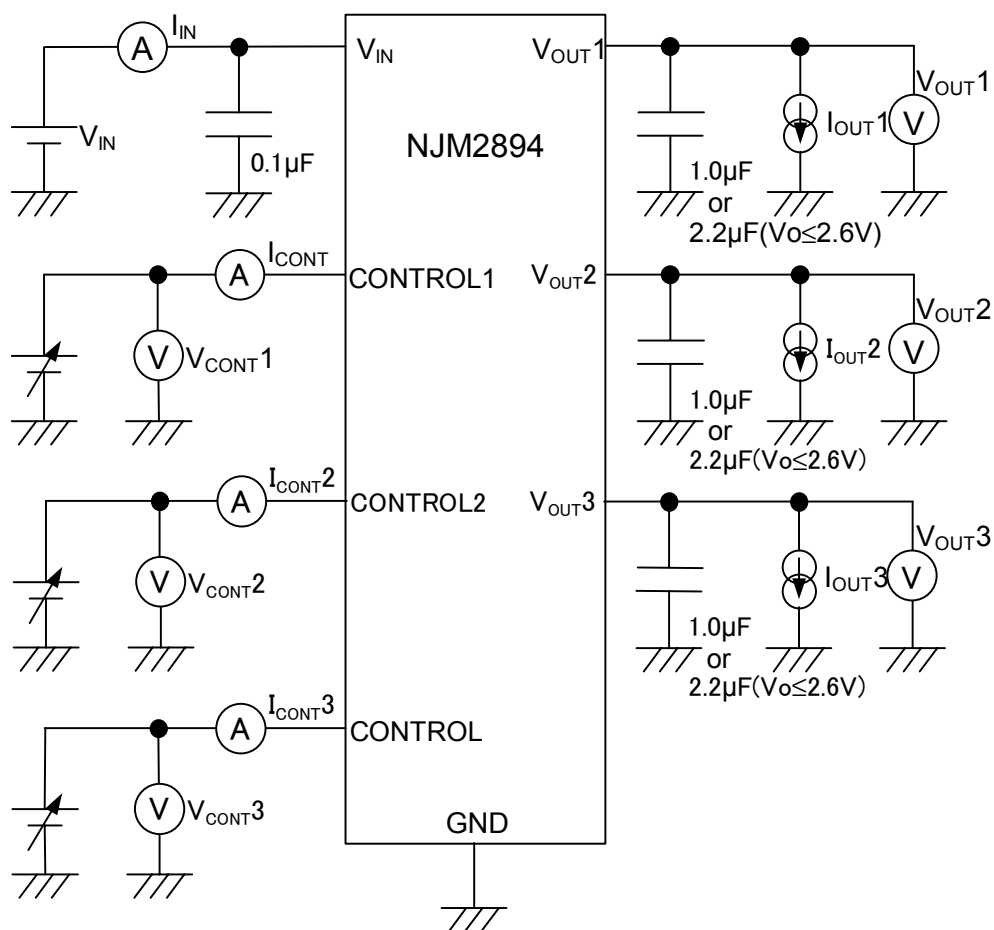
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_o	$I_o=30mA$	-1.0%	-	+1.0%	V
Quiescent Current1	I_{Q1}	$V_{CONT1}=V_{IN}$, $V_{CONT2}=V_{CONT3}=0V$ *1ch ON $I_o=0mA$, expect I_{cont}	-	140	220	μA
Quiescent Current2	I_{Q2}	$V_{CONT1}=V_{CONT2}=V_{IN}$, $V_{CONT3}=0V$ *2ch ON $I_o=0mA$, expect I_{cont}	-	240	370	μA
Quiescent Current3	I_{Q3}	$V_{CONT1}=V_{CONT2}=V_{CONT3}=V_{IN}$ $I_o=0mA$, expect I_{cont}	-	340	520	μA
Quiescent Current at Control OFF	$I_{Q(OFF)}$	$V_{CONT}=0V$	-	-	100	nA
Output Current 1	I_{o1}	Ch1 : $V_o-0.3V$	150	200	-	mA
Output Current 2	I_{o2}	Ch2,3 : $V_o-0.3V$	80	100	-	mA
Line Regulation	$\Delta V_o/\Delta V_{IN}$	$V_{IN}=V_o+1V$ to V_o+6V , $I_o=30mA$	-	-	0.10	%/V
Load Regulation 1	$\Delta V_o/\Delta I_{o1}$	Ch1 : $I_o=0$ to 100mA	-	-	0.03	%/mA
Load Regulation 2	$\Delta V_o/\Delta I_{o2}$	Ch2,3 : $I_o=0$ to 60mA	-	-	0.03	%/mA
Dropout Voltage 1	ΔV_{FO1}	Ch1 : $I_o=60mA$	-	0.10	0.18	V
Dropout Voltage 2	ΔV_{FO2}	Ch2,3 : $I_o=40mA$	-	0.10	0.18	V
Ripple Rejection	RR	$e_{in}=200mV_{rms}$, $f=1kHz$, $I_o=10mA$, $V_o=3V$	-	75	-	dB
Average Temperature Coefficient of Output Voltage	$\Delta V_o/\Delta T_a$	$T_a=0$ to $85^\circ C$, $I_o=10mA$	-	± 50	-	ppm/°C
Output Noise Voltage	V_{NO}	$f=10Hz$ to $80kHz$, $I_o=10mA$, $V_o=3V$	-	45	-	μV_{rms}
Control Voltage for ON-state	$V_{CONT(ON)}$		1.6	-	-	V
Control Voltage for OFF-state	$V_{CONT(OFF)}$		-	-	0.6	V

(note2) Please confirm the specification separately because some parameters depend on output voltage.

■OUTPUT VOLTAGE RANK LIST

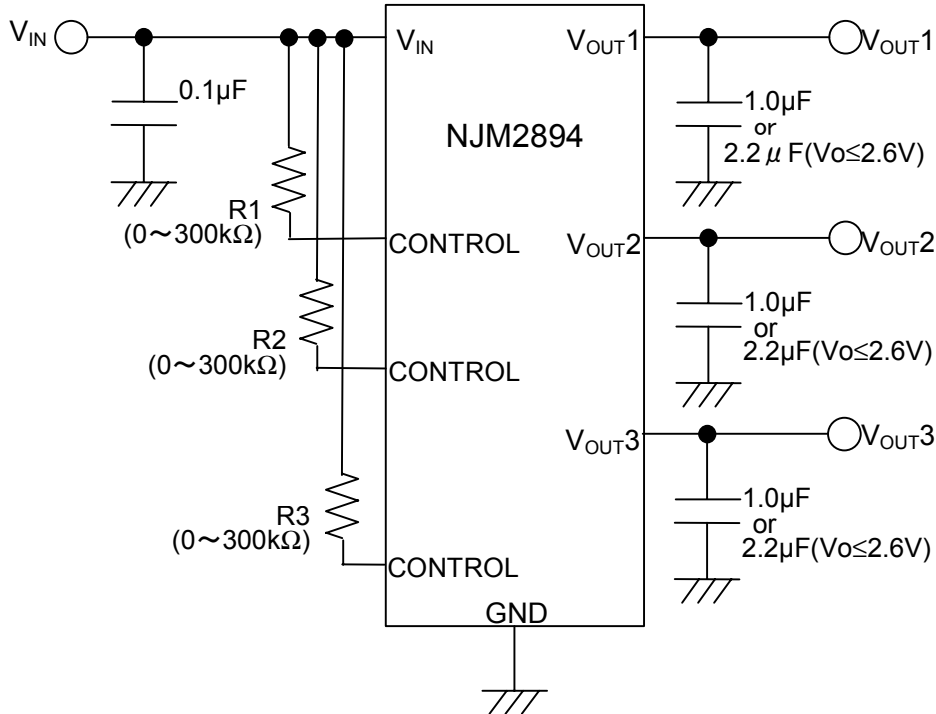
Device Name	VOUT		
	CH1	CH2	CH3
NJM2893RB1-CCC	2.1V	2.1V	2.1V
NJM2893RB1-LLL	3.0V	3.0V	3.0V
NJM2893RB1-YLC	5.0V	3.0V	2.1V

■TEST CIRCUIT



■TYPICAL APPLICATION

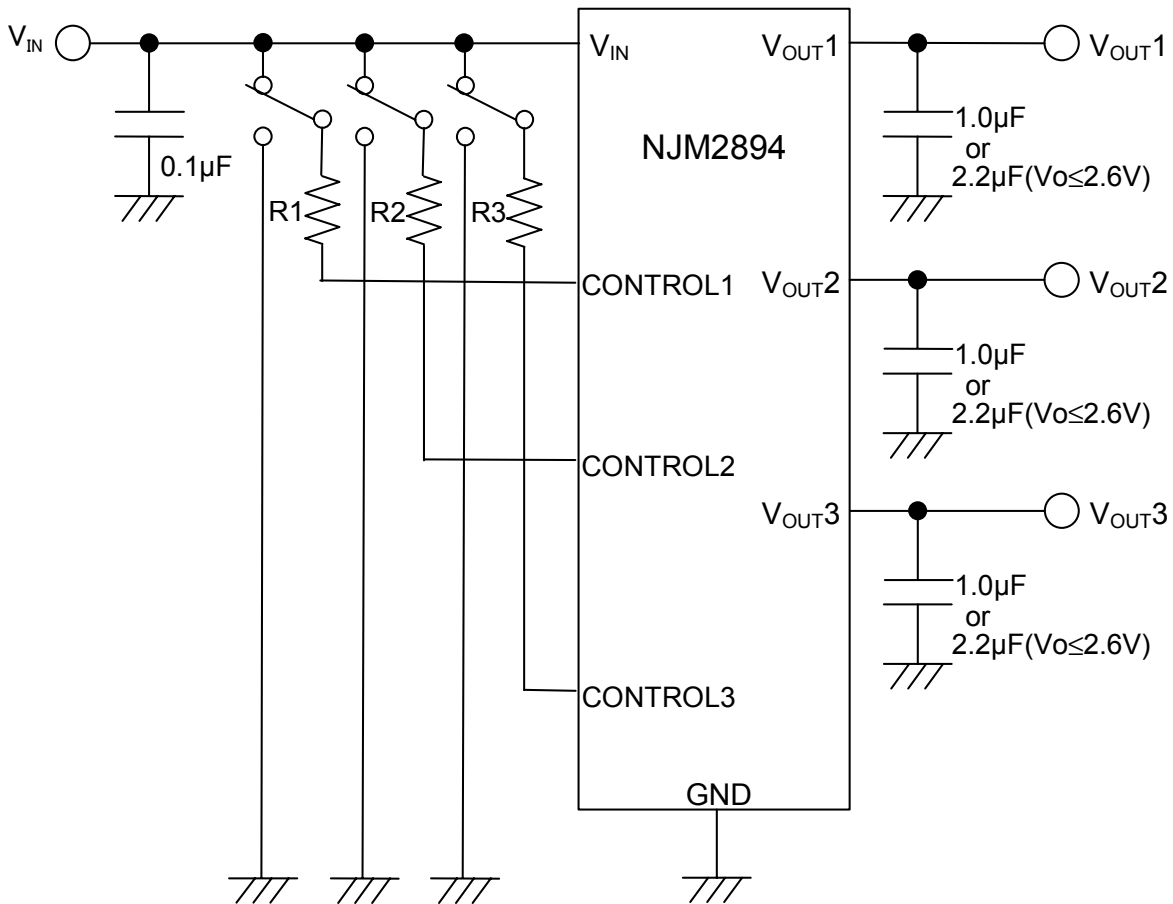
(1) In the case where ON/OFF Control is not required:



Connect control terminal to VIN terminal

In case a resistance "R" is used, the quiescent current will be decreased. However, the but minimum operating voltage will be increase as well. Please refer to a figure of Output Voltage vs. Control Voltage.

(2) In use of ON/OFF Control:



In case the control terminal is "H", the output is enabled.
The control terminal is "L" or "open", the output is disabled.

[CAUTION]

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