

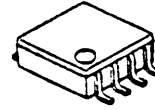
## 3OUTPUT LOW DROPOUT VOLTAGE REGULATOR

### ■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

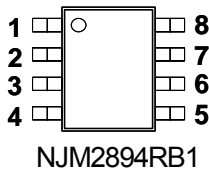


NJM2894RB1

### ■FEATURES

- High Ripple Rejection      75dB typ. at f=1kHz
- Low Noise                      45 $\mu$ Vrms typ.
- Output capacitor with 1.0 $\mu$ F ceramic capacitor at  $V_{O} \geq 2.7V$
- 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

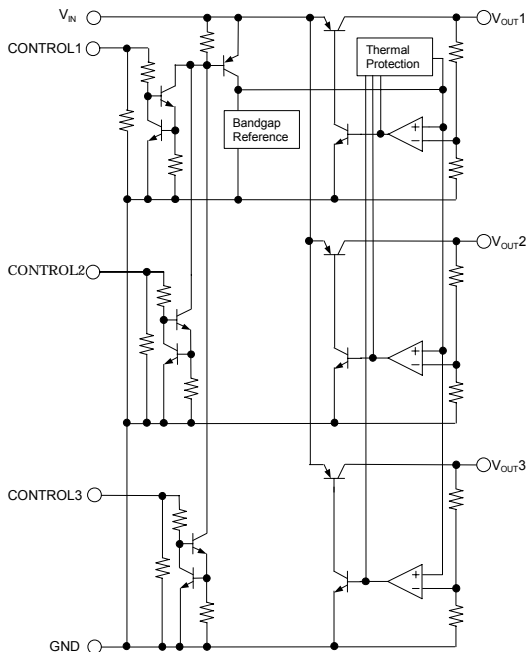
### ■PIN CONFIGURATION



### 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.

■RECRICAL CHARACTERISTICS

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

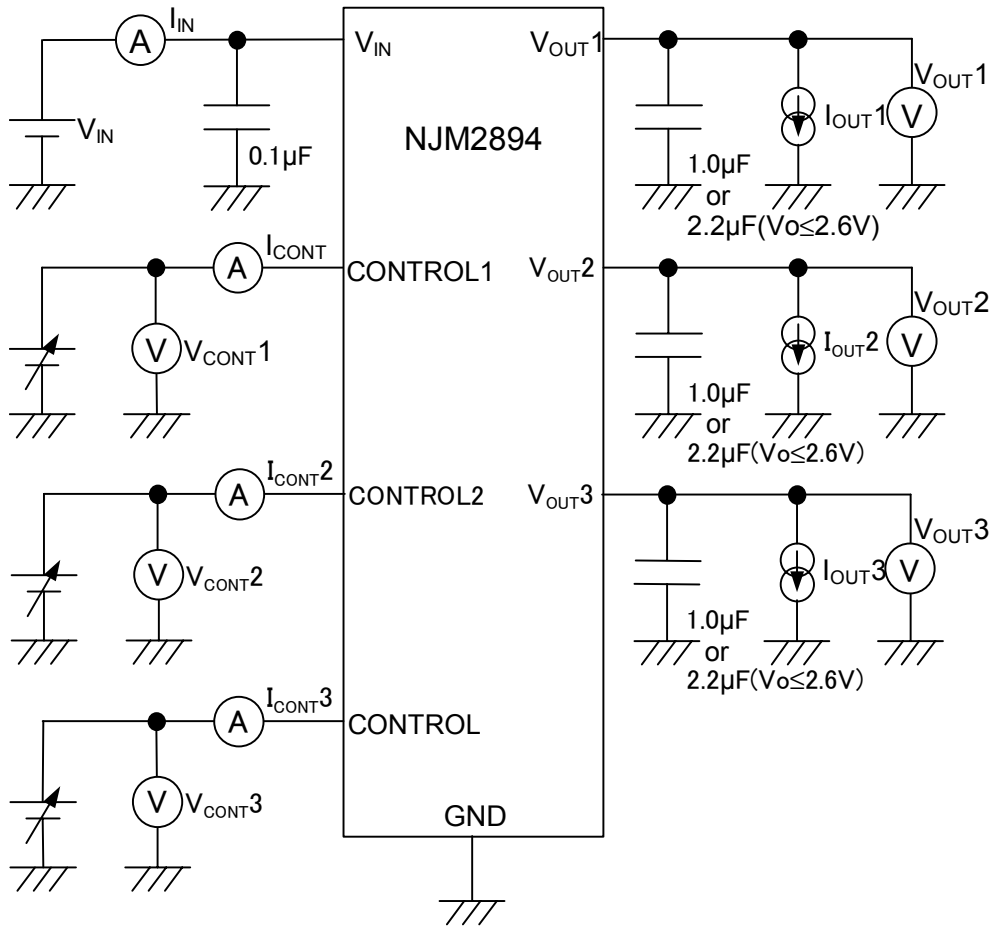
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	$V_o$	$I_o=30mA$	-1.0%	-	+1.0%	V
Quiescent Current1	$I_{Q1}$	$V_{CONT1}=V_{IN}$ , $V_{CONT2}=V_{CONT3}=0V$ *1ch ON $I_o=0mA$ , expect $I_{cont}$	-	140	220	$\mu A$
Quiescent Current2	$I_{Q2}$	$V_{CONT1}=V_{CONT2}=V_{IN}$ , $V_{CONT3}=0V$ *2ch ON $I_o=0mA$ , expect $I_{cont}$	-	240	370	$\mu A$
Quiescent Current3	$I_{Q3}$	$V_{CONT1}=V_{CONT2}=V_{CONT3}=V_{IN}$ $I_o=0mA$ , expect $I_{cont}$	-	340	520	$\mu A$
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	$\Delta V_{FO1}$	Ch1 : $I_o=60mA$	-	0.10	0.18	V
Dropout Voltage 2	$\Delta V_{FO2}$	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 $85^\circ C$ , $I_o=10mA$	-	$\pm 50$	-	ppm/°C
Output Noise Voltage	$V_{NO}$	$f=10Hz$ to $80kHz$ , $I_o=10mA$ , $V_o=3V$	-	45	-	$\mu V_{rms}$
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

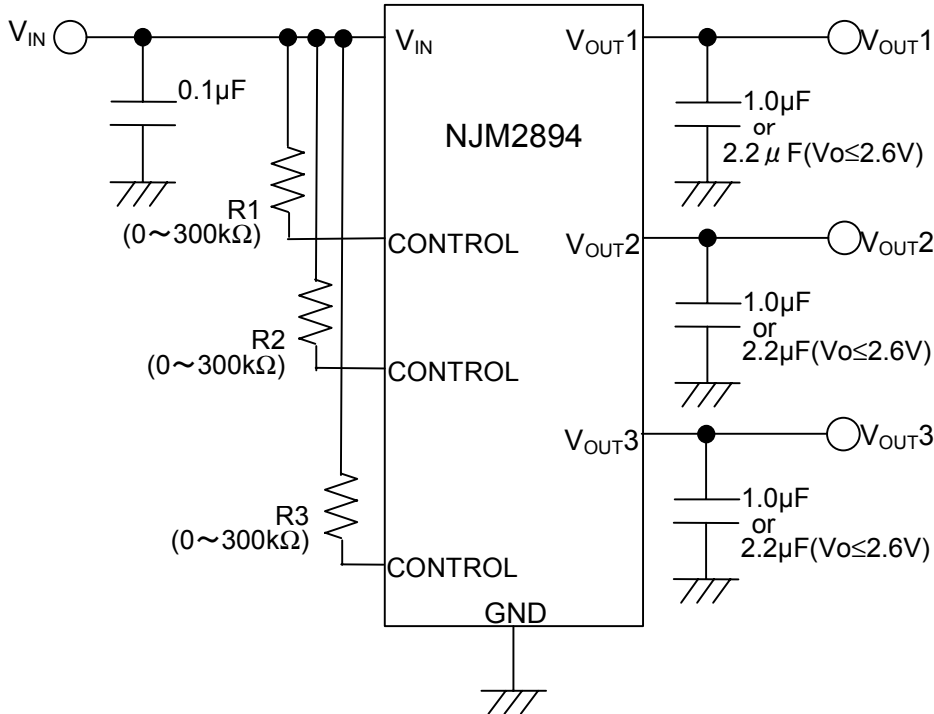
Device Name	VOUT		
	CH1	CH2	CH3
NJM2893RB1-CCC	2.1V	2.1V	2.1V
NJM2893RB1-LLL	3.0V	3.0V	3.0V
NJM2893RB1-YLC	5.0V	3.0V	2.1V

■ TEST CIRCUIT



■ TYPICAL APPLICATION

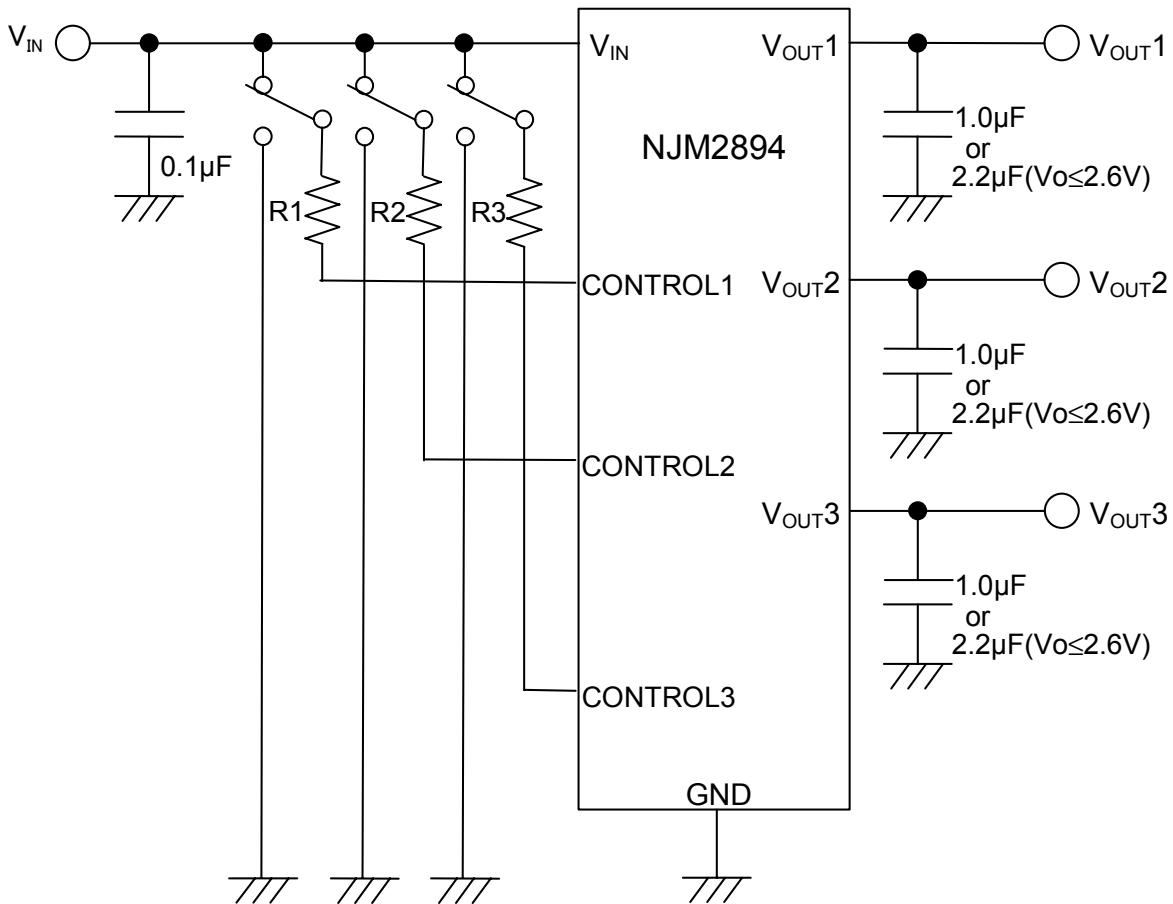
(1) In the case where ON/OFF Control is not required:



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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