Preliminary

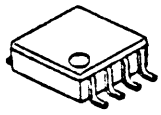
3OUTPUT LOW DROPOUT VOLTAGE REGULATOR

■GENRAL 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

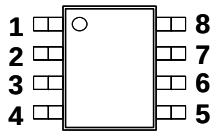


NJM2894RB1

■FEATURES

- ●High Ripple Rejection 75dB typ. at f=1kHz
- ●Low Noise 45μVrms typ.
- ●Output capacitor with 1.0μF ceramic capacitor at Vo≥2.7V
- ●Output Current Io(max.)=ch1=150mA ,ch2,3=80mA
- ●High Precision Output ±1.0%
- ●Low Dropout Voltage 0.1V typ. at Io=60mA
- ●ON/OFF Control
- ●Internal Thermal Overload Protection
- ●Internal Short Circuit Current Limit
- ●Bipolar Technology
- ●Package Outline TVSP-8

■PIN CONFIGURATION

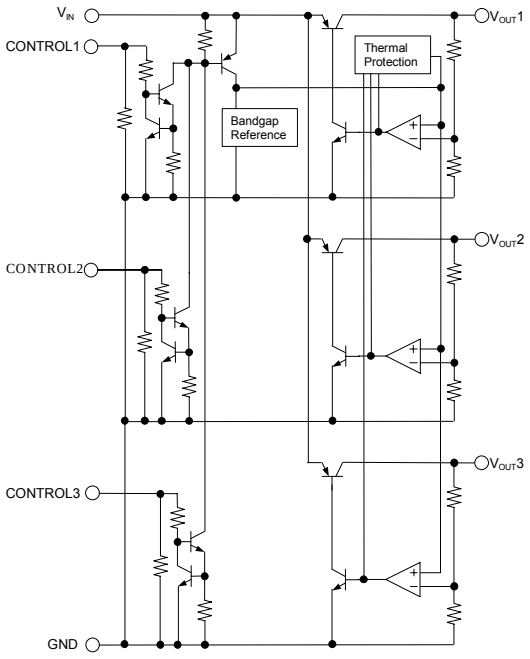


NJM2894RB1

PIN FUNCTION

1. $V_{OUT}1$	5. CONTROL3
2. $V_{OUT}2$	6. CONTROL2
3. $V_{OUT}3$	7. CONTROL1
4. GND	8. V_{IN}

■EQUIVALENT CIRCUIT



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■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	Topr	-40 to +85	°C
Storage Temperature	Tstg	-40 to+125	°C

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

■ERECRICAL CHARACTERISTICS

(V_{IN}=Vo+1V, C_{IN}=0.1μF, Co=1.0μF: Vo≥2.7V (Co=2.2μF: Vo≤2.6V), Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	Vo	Io=30mA	-1.0%	-	+1.0%	V
Quiescent Current1	I_{Q1}	V_{CONT}1= V_{IN}, V_{CONT}2= V_{CONT}3= 0V *1ch ON Io=0mA, expect Icont	-	140	220	μA
Quiescent Current2	I_{Q2}	V_{CONT}1= V_{CONT}2= V_{IN}, V_{CONT}3= 0V *2ch ON Io=0mA, expect Icont	-	240	370	μA
Quiescent Current3	I_{Q3}	V_{CONT}1= V_{CONT}2= V_{CONT}3= V_{IN} Io=0mA, expect Icont	-	340	520	μA
Quiescent Current at Control OFF	$I_{Q(OFF)}$	V_{CONT}=0V	-	-	100	nA
Output Current 1	Io1	Ch1 : Vo-0.3V	150	200	-	mA
Output Current 2	Io2	Ch2,3 : Vo-0.3V	80	100	-	mA
Line Regulation	$\Delta Vo/\Delta V_{IN}$	V_{IN}=Vo+1V to Vo+6V, Io=30mA	-	-	0.10	%/V
Load Regulation 1	$\Delta Vo/\Delta Io1$	Ch1 : Io=0 to 100mA	-	-	0.03	%/mA
Load Regulation 2	$\Delta Vo/\Delta Io2$	Ch2,3 : Io=0 to 60mA	-	-	0.03	%/mA
Dropout Voltage 1	ΔV_{I-O1}	Ch1 : Io=60mA	-	0.10	0.18	V
Dropout Voltage 2	ΔV_{I-O2}	Ch2,3 : Io=40mA	-	0.10	0.18	V
Ripple Rejection	RR	ein=200mVrms,f=1kHz,Io=10mA, Vo=3V	-	75	-	dB
Average Temperature Coefficient of Output Voltage	$\Delta Vo/\Delta Ta$	Ta=0 to 85°C, Io=10mA	-	±50	-	ppm/°C
Output Noise Voltage	V_{NO}	f=10Hz to 80kHz, Io=10mA, Vo=3V	-	45	-	μVrms
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

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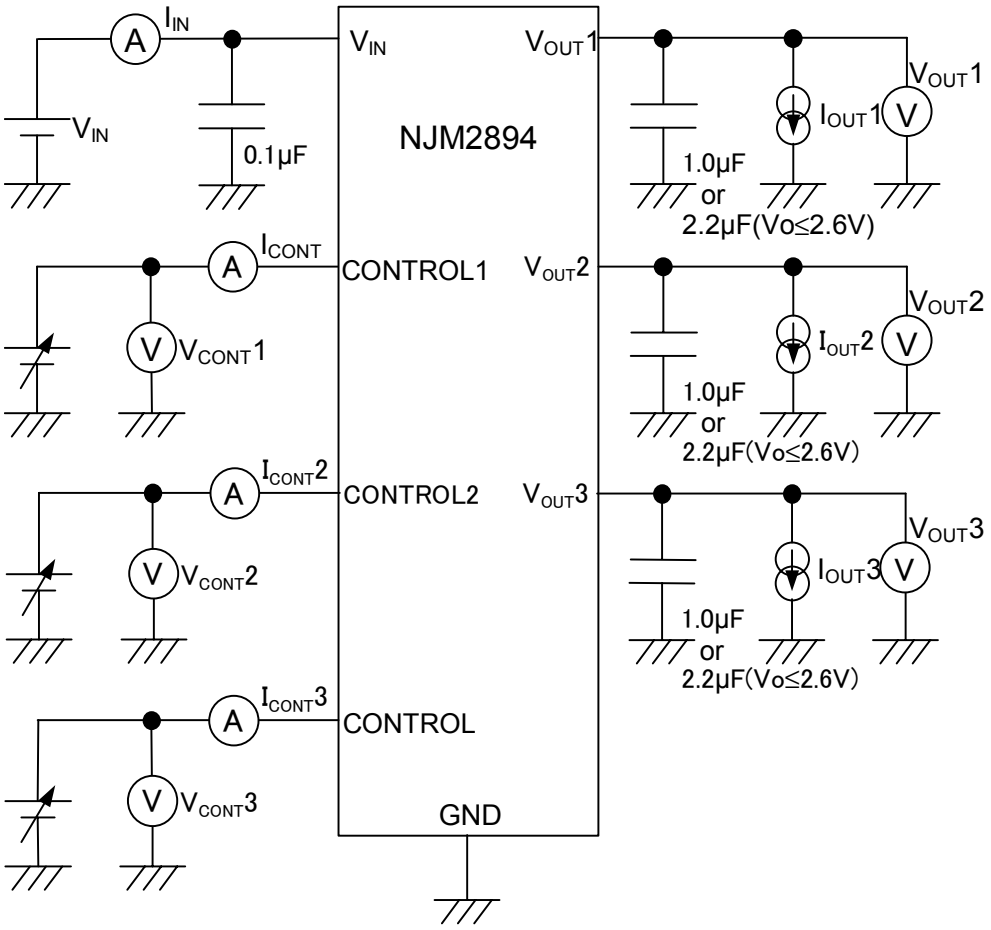
■TEST CIRCUIT



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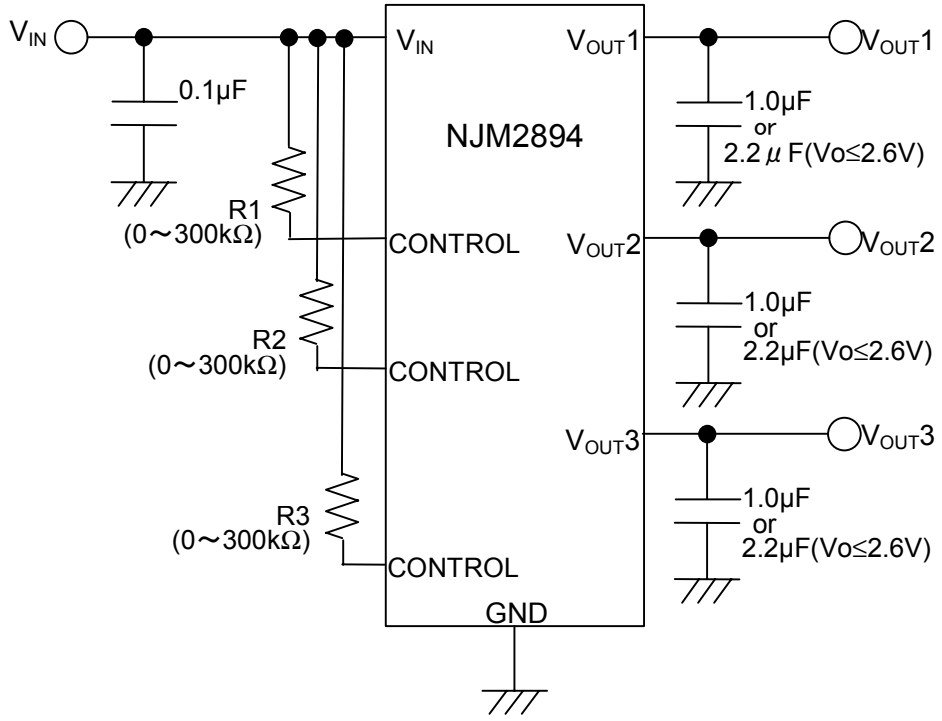
■TYPICAL APPLICATION

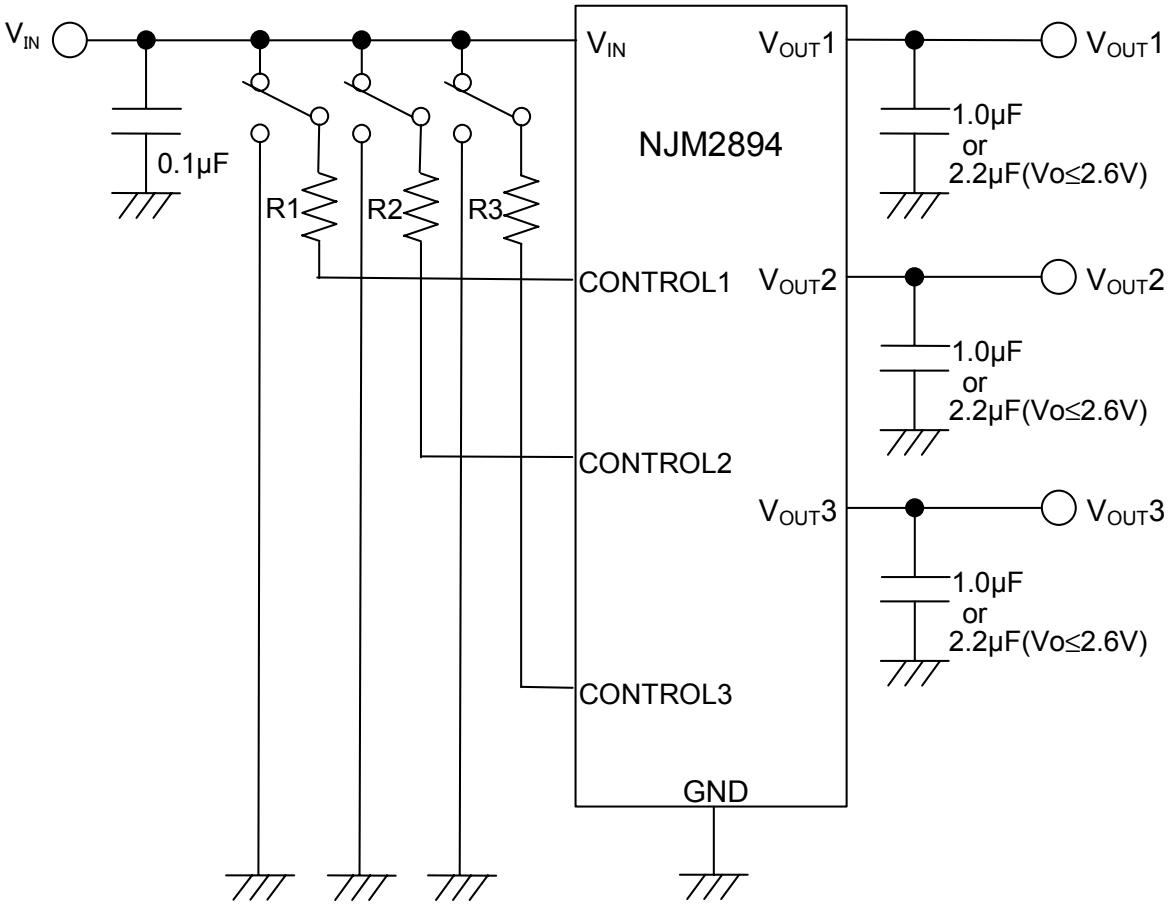
(1) In the case where ON/OFF Control is not required:



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.

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