

LOW DROPOUT VOLTAGE REGULATOR

■ GENERAL DISCRIPTION

NJU7741 is a low dropout voltage regulator with ON/OFF control.

Advanced CMOS technology achieves high ripple rejection and ultra low quiescent current.

It is suitable for portable applications.

■ PACKAGE OUTLINE

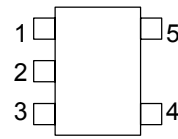


NJU7741F

■ FEATURES

- Ultra Low quiescent Current $I_q=1.5\mu\text{A typ.}(I_o=0\text{mA})$
- Output capacitor with 0.1 μF ceramic capacitor
- Output Current $I_o(\text{max.})=100\text{mA}$
- High Precision Output $V_o\pm 1.0\%$
- Low Dropout Voltage 0.17V typ. ($I_o=60\text{mA}$, $V_o=3\text{V}$)
- With ON/OFF Control (Active High)
- Internal Short Circuit Current Limit
- CMOS Technology
- Package Outline MTP5 (2.8 \times 2.9 \times 1.1mm)

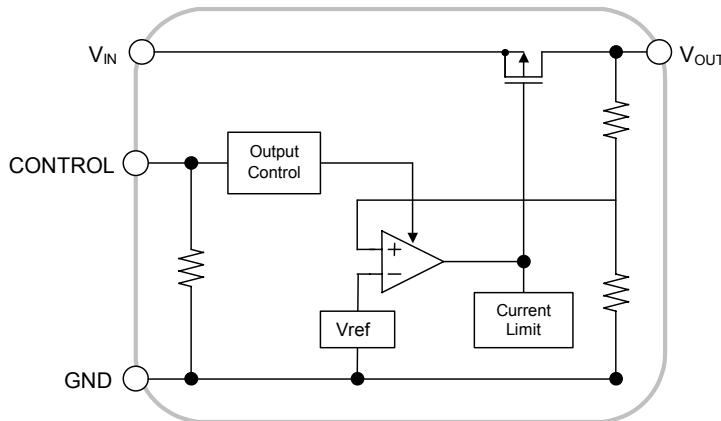
■ PIN CONFIGURATION



- PIN FUNCTION**
- 1.CONTROL
 - 2.GND
 - 3.N.C.
 - 4. V_{OUT}
 - 5. V_{IN}

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■ EQUIVALENT CIRCUIT



■ OUTPUT VOLTAGE RANK LIST

DEVICE NAME	V_{OUT}	DEVICE NAME	V_{OUT}
NJU7741F15	1.5V	NJU7741F03	3.0V
NJU7741F02	2.0V	NJU7741F33	3.3V
NJU7741F27	2.7V	NJU7741F06	6.0V
NJU7741F28	2.8V		

NJU7741

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V_{IN}	+10	V
Control Voltage	V_{CONT}	+10(note 1)	V
Power Dissipation	P_D	200	mW
Operating Temperature	T_{opr}	-40 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +125	°C

(note 1) When input voltage is less than +10V, the absolute maximum control voltage is equal to the input voltage.

■ ELECTRICAL CHARACTERISTICS

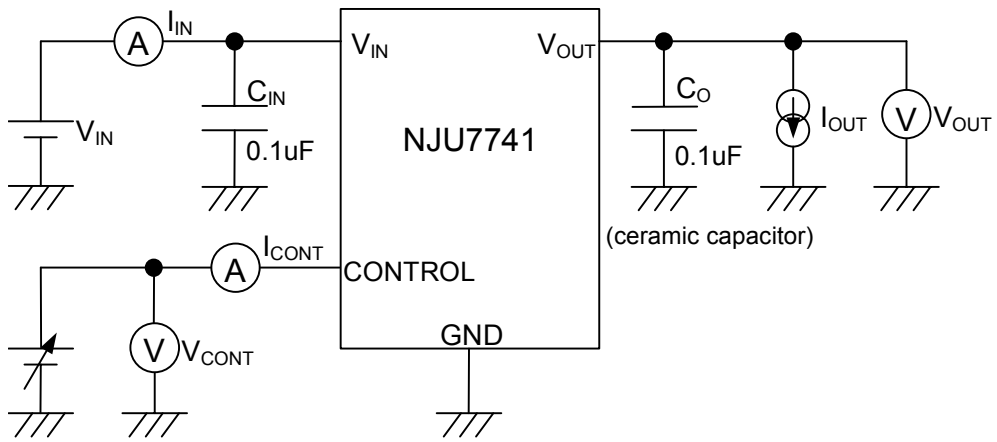
($V_{IN}=V_O+1V$, $C_{IN}=0.1\mu F$, $C_O=0.1\mu F$, $T_a=25^\circ C$)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Output Voltage	V_O	$I_O=30mA$	-1.0%	-	+1.0%	V	
Input Voltage	V_{IN}		-	-	9	V	
Quiescent Current	I_Q	$I_O=0mA$, $V_{CONT}=V_{IN}$, except I_{CONT}	-	1.5	3.5	μA	
Quiescent Current at Control OFF	$I_{Q(OFF)}$	$V_{CONT}=0V$	-	0.1	1	μA	
Output Current	I_O	$V_O-0.3V$	100	-	-	mA	
Short Circuit Limit	I_{LIM}	$V_O=0V$	-	25	-	mA	
Line Regulation	$\Delta V_O / \Delta V_{IN}$	$V_{IN}=V_O+1V-V_O+6.0V(V_O<3.0V)$ $V_{IN}=V_O+1V-9.0V(V_O\geq 3.0V)$, $I_O=30mA$	-	-	0.30	%/V	
Load Regulation	$\Delta V_O / \Delta V_O$	$I_O=0\sim 100mA$	-	-	0.30	%/mA	
Dropout Voltage	ΔV_{I-O}	$I_O=40mA$	$1.5V\leq V_O\leq 2.0V$	-	0.19	0.40	V
		$I_O=60mA$	$2.1V\leq V_O\leq 2.4V$	-	0.19	0.29	V
			$2.5V\leq V_O\leq 2.7V$	-	0.18	0.27	V
			$2.8V\leq V_O\leq 3.3V$	-	0.17	0.26	V
			$3.4V\leq V_O\leq 5.0V$	-	0.16	0.24	V
			$5.1V\leq V_O\leq 6.0V$	-	0.15	0.22	V
Average Temperature Coefficient of Output Voltage	$\Delta V_O / \Delta T_a$	$T_a=0\sim 85^\circ C$, $V_O=10mA$	-	± 100	-	ppm/°C	
Pull-down Resistance	R_{CONT}		2.5	5	10	$M\Omega$	
Control Voltage for ON-State	$V_{CONT(ON)}$		1.6	-	V_{IN}	V	
Control Voltage for OFF-State	$V_{CONT(OFF)}$		0	-	0.3	V	

(note 2) The above specification is a common specification for all voltages.

Therefore, it may be different from the individual specification for a specific output Voltage.

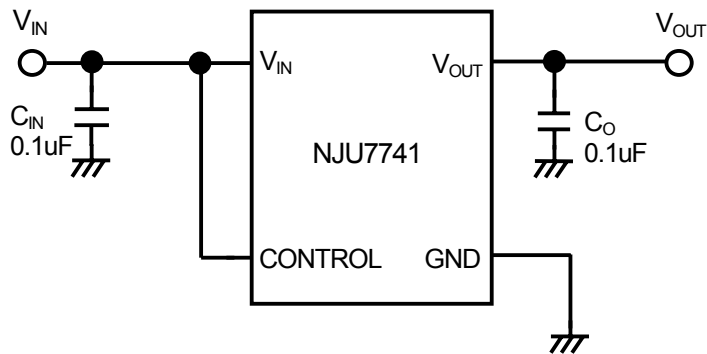
■ TEST CIRCUIT



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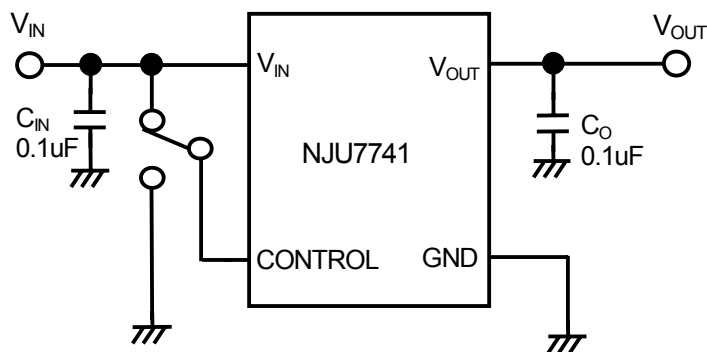
■ TYPICAL APPLICATION

① In case that ON/OFF Control is not required:



Connect control terminal to V_{IN} terminal.

② In use of ON/OFF Control



State of control terminal:

- "H" → output is enabled.
- "L" or "open" → output is disabled.

[CAUTION]

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