

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

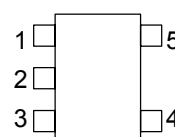


NJU7741F

■ FEATURES

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

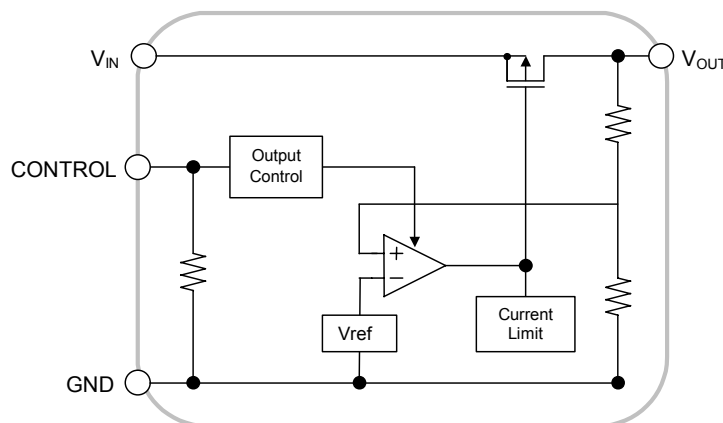
■ PIN CONFIGURATION



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		

■ 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

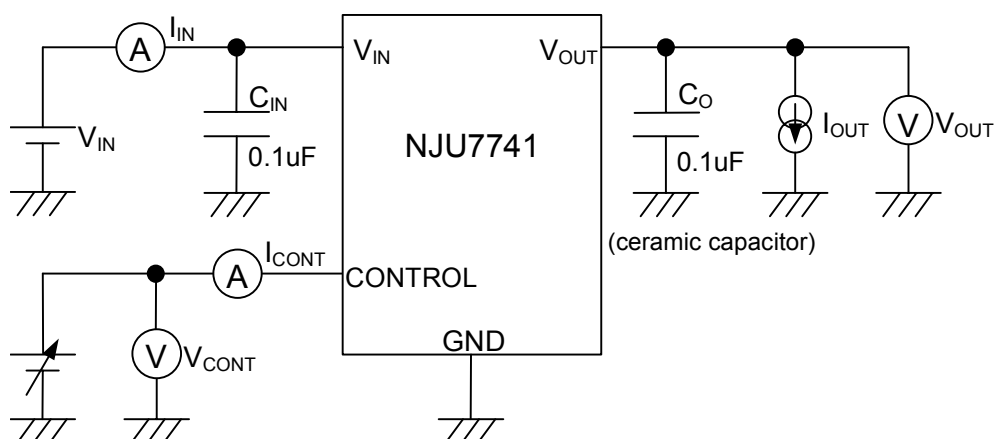
($V_{IN}=V_O+1V$, $C_{IN}=0.1\mu F$, $C_O=0.1\mu F$, $T_a=25^\circ C$)

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	uA
Quiescent Current at Control OFF	I _{Q(OFF)}	V _{CONT} =0V		—	0.1	1	uA
Output Current	I _O	V _O -0.3V		100	—	—	mA
Short Circuit Limit	I _{LIM}	V _O =0V		—	25	—	mA
Line Regulation	ΔV _O /ΔV _{IN}	V _{IN} = V _O +1V~V _O +6.0V(V _O <3.0V) V _{IN} = V _O +1V~9.0V(V _O ≥3.0V), I _O =30mA		—	—	0.30	%/V
Load Regulation	ΔV _O /ΔV _O	I _o =0~100mA		—	—	0.30	%/mA
Dropout Voltage	ΔV _{I-O}	I _o =40mA	1.5V≤V _O ≤2.0V	—	0.19	0.40	V
		I _o =60mA	2.1V≤V _O ≤2.4V	—	0.19	0.29	V
			2.5V≤V _O ≤2.7V	—	0.18	0.27	V
			2.8V≤V _O ≤3.3V	—	0.17	0.26	V
			3.4V≤V _O ≤5.0V	—	0.16	0.24	V
			5.1V≤V _O ≤6.0V	—	0.15	0.22	V
Average Temperature Coefficient of Output Voltage	ΔV _O /ΔTa	Ta=0~85°C, V _O =10mA		—	±100	—	ppm/°C
Pull-down Resistance	R _{CONT}			2.5	5	10	MΩ
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.

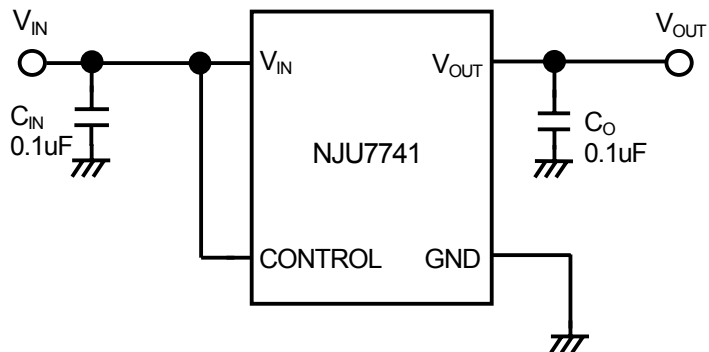
Therefore, it may be different from the individual specification for a specific output Voltage.

■ TEST CIRCUIT



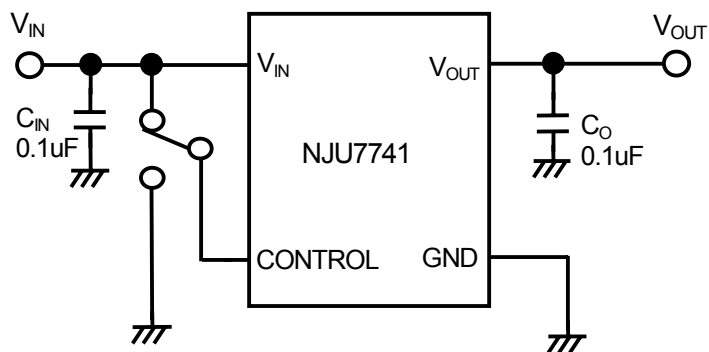
■ TYPICAL APPLICATION

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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