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.

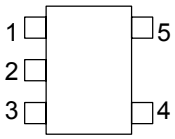
■ PACKAGE OUTLINE

NJU7741F

■ FEATURES

- Ultra Low quiescent Current Iq=1.5μA typ.(I_O=0mA)
- Output capacitor with 0.1uF ceramic capacitor
- Output Current I_O(max.)=100mA
- High Precision Output V_O±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)

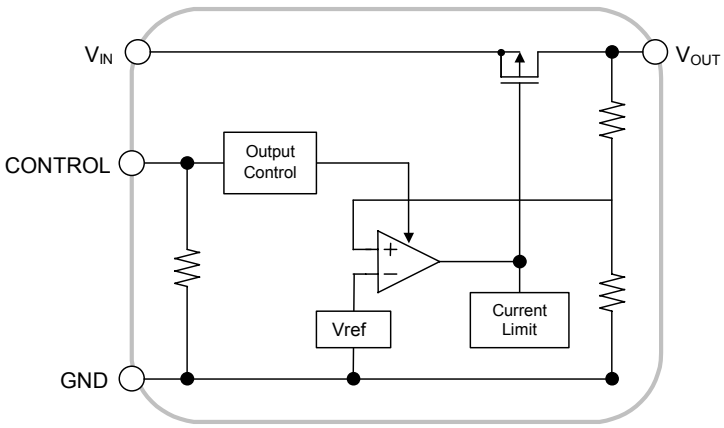
■ PIN CONFIGURATION



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

NJU7741F

■ 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	Topr	−40 ~ +85	°C
Storage Temperature	Tstg	−40 ~ +125	°C

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

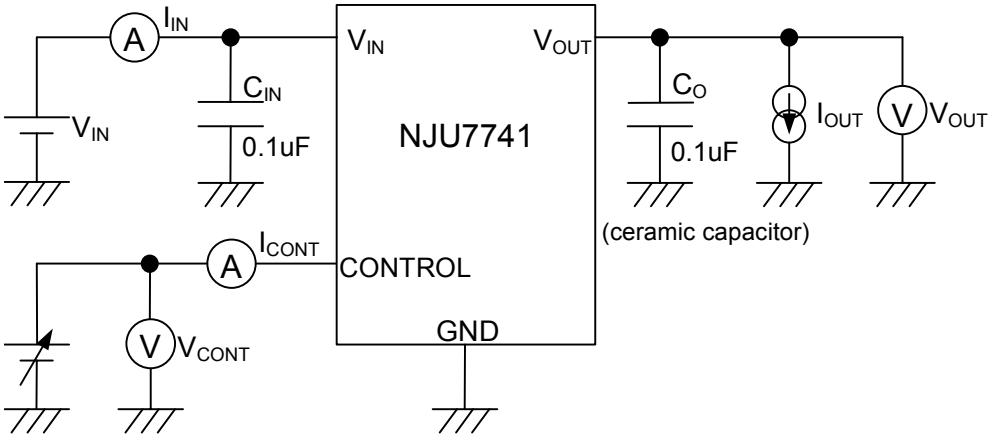
■ ELECTRICAL CHARACTERISTICS

(V_{IN}=V_O+1V, C_{IN}=0.1uF, C_O=0.1uF, Ta=25°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	$\Delta V_O / \Delta V_{IN}$	V_{IN}= V_O+1V~V_O+6.0V(V_O<3.0V) V_{IN}= V_O+1V~9.0V(V_O≥3.0V), I_O=30mA		–	–	0.30	%/V
Load Regulation	$\Delta V_O / \Delta V_O$	Io=0~100mA		–	–	0.30	%/mA
Dropout Voltage	ΔV_{I-O}	Io=40mA	1.5V≤V_O≤2.0V	–	0.19	0.40	V
		Io=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	$\Delta V_O / \Delta Ta$	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

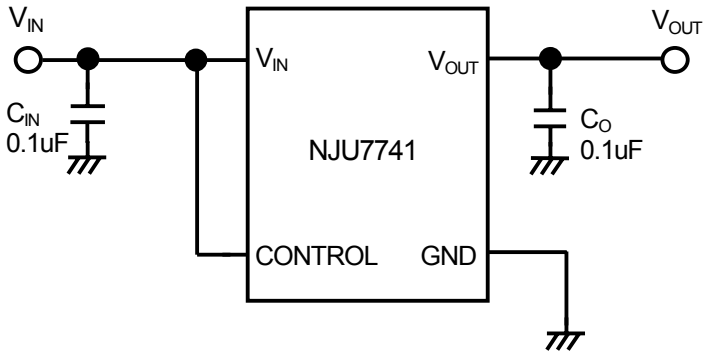
(note 2) The above specification is a common specification for all voltages.
Therefore, it may be different from the individual specification for a specific output Voltage.

■ TEST CIRCUIT



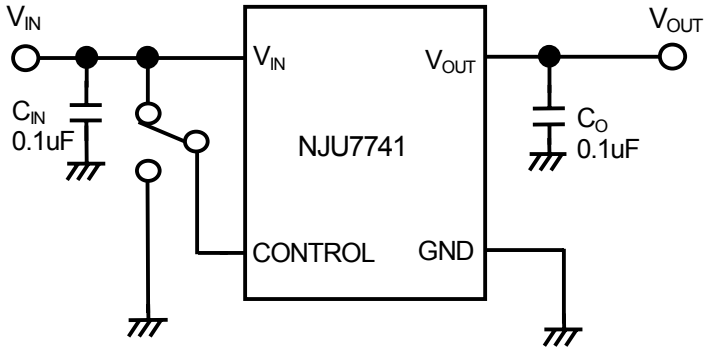
■ TYPICAL APPLICATION

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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