PRELIMINARY

LOW DROPOUT VOLTAGE REGULATOR

■ GENERAL DESCRIPTION

NJU7771/72/73 is a low dropout voltage regulator designed for cellular phone application.
Advanced CMOS technology achieves high ripple rejection and low quiescent current.

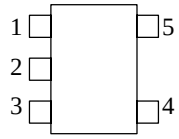
■ PACKAGE OUTLINE

NJU7771F/72F/73F

■ FEATURES

- ●High Ripple Rejection 65dB typ. (f=1kHz)
- ●Low quiescent Current Iq=18μA
- ●Output capacitor with 1.0uF ceramic capacitor
- ●Output Current Io(max.)=150mA
- ●High Precision Output Vo±1.5%
- ●Low Dropout Voltage 0.15V typ. (Io=100mA,Vo=3V)
- ●ON/OFF Control (Active High)
- ●Internal Short Circuit Current Limit
- ●Internal Thermal Overload Protection
- ●CMOS Technology
- ●Package Outline MTP5 (2.8×2.9×1.1mm)

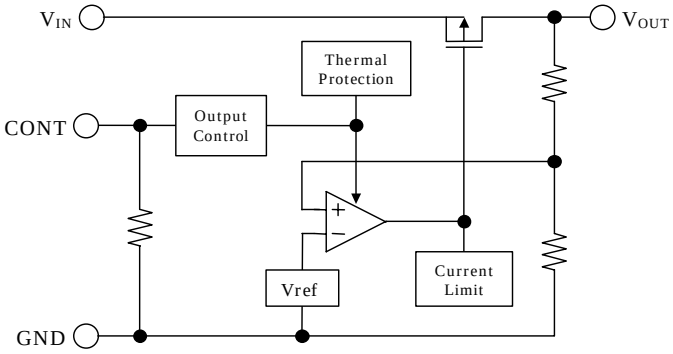
■ PIN CONFIGURATION



PIN FUNCTION

1.CONTROL	1.V_{IN}	1.V_{OUT}
2.GND	2.GND	2.GND
3.NC	3.CONTROL	3.V_{IN}
4.V_{OUT}	4.NC	4.CONTROL
5.V_{IN}	5.V_{OUT}	5.NC
NJU7771F	NJU7772F	NJU7773F

■ EQUIVALENT CIRCUIT



■ OUTPUT VOLTAGE RANK LIST

Device Name	V_{OUT}
NJU777×F21	2.1V
NJU777×F27	2.7V
NJU777×F28	2.8V
NJU777×F03	3.0V
NJU777×F05	5.0V

PRELIMINARY

■ 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

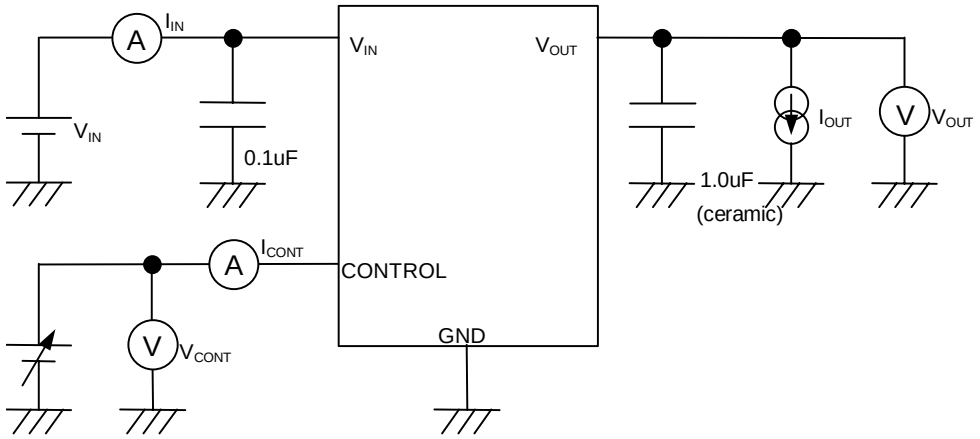
(V_{IN}=Vo+1V, C_{IN}=0.1µF, Co=1.0µF, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	Vo	Io=30mA	-1.5%	–	+1.5%	V
	V_{IN}		–	–	9	V
Quiescent Current	I_Q	Io=0mA, V_{CONT}=V_{IN}	-	18	35	µA
Quiescent Current at Control OFF	$I_{Q(OFF)}$	V_{CONT}=0V	–	0.1	1	µA
Output Current	Io	Vo-0.3V	150	–	–	mA
Short Current Limit	I_{LIM}	Vo=0V	–	50	–	mA
Line Regulation	$\Delta Vo/\Delta V_{IN}$	V_{IN}=Vo+1V~Vo+6V (Vo<3.0V) V_{IN}=Vo+1V~9.0V (Vo≥3.0V), Io=30mA	–	–	0.20	%/V
Load Regulation	$\Delta Vo/\Delta Io$	Io=0~100mA	–	–	0.03	%/mA
Dropout Voltage	ΔV_{I-O}	Io=100mA, 2.1V≤Vo≤2.4V	–	0.2	0.3	V
		Io=100mA, 2.5V≤Vo≤2.7V	–	0.18	0.28	V
		Io=100mA, 2.8V≤Vo≤3.3V	–	0.15	0.25	V
		Io=100mA, 3.4V≤Vo≤5.0V	–	0.12	0.22	V
Ripple Rejection	RR	ein=200mVrms, f=1kHz, Io=10mA, Vo=3V version	–	65	–	dB
Average Temperature Coefficient of Output Voltage	$\Delta Vo/\Delta Ta$	Ta=0~+85°C, Io=10mA	–	±100	–	ppm/°C
Output Noise Voltage	V_{NO1}	f=10Hz~80kHz, Io=0mA, Vo=3V version	–	40	–	µVrms
	V_{NO2}	f=10Hz~80kHz, Io=10mA, Vo=3V version	–	70	–	µVrms
Pull-down Resistance	R_{CONT}		2.0	5	10	MΩ
Control Voltage for ON-state	$V_{CONT(ON)}$		1.6	–	–	V
Control Voltage for OFF-state	$V_{CONT(OFF)}$		–	–	0.3	V

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

PRELIMINARY

■ TEST CIRCUIT



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