

LOW DROPOUT VOLTAGE REGULATOR

■ GENERAL DESCRIPTION

The NJU7777 is a 150mA output low dropout voltage regulator with ON/OFF control.

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

Small packaging and 1 μ F small decoupling capacitor make the NJU7777 suitable for space conscious applications.

■ PACKAGE OUTLINE

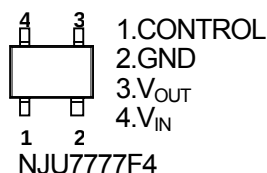


NJU7777F4

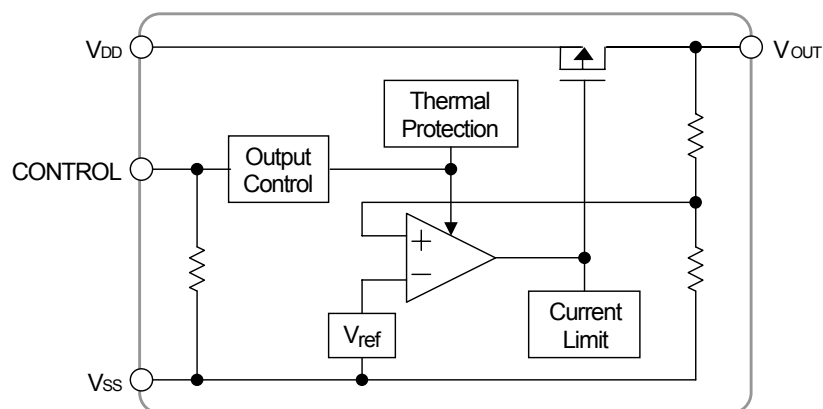
■ FEATURES

- High Ripple Rejection 65dB typ. (f=1kHz, V_o=3.0V version)
- Low quiescent Current I_q=18 μ A (I_o=0mA)
- Output Current I_o(max.)=150mA
- High Precision Output V_o±1.0%
- Output capacitor with 1.0 μ F ceramic capacitor (V_o≥2.1V version)
- Low Dropout Voltage 0.13V typ. (I_o=100mA, V_o=3.0V)
- ON/OFF Control
- Internal Short Circuit Current Limit
- Internal Thermal Overload Protection
- CMOS Technology
- Package Outline SC-82AB

■ PIN CONFIGURATION



■ EQUIVALENT CIRCUIT



■ OUTPUT VOLTAGE RANK LIST

Device Name	V _{OUT}	Device Name	V _{OUT}
NJU7777F4-15	1.5V	NJU7777F4-33	3.3V
NJU7777F4-18	1.8V	NJU7777F4-05	5.0V
NJU7777F4-21	2.1V		
NJU7777F4-24	2.4V		
NJU7777F4-03	3.0V		

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V _{IN}	+9	V
Control Voltage	V _{CONT}	+9(*1)	V
Power Dissipation	P _D	250(*2)	mW
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +125	°C

(*1) : When input voltage is less than +9V, the absolute maximum control voltage is equal to the input voltage.

(*2) : Mounted on glass epoxy board based on EIA/JEDEC. (114.3x76.2x1.6mm: 2Layers)

■ Operating voltage

V_{IN}=+2.3 ~ +8V (In case of Vo<2.1V version)

■ ELECTRICAL CHARACTERISTICS (V_{IN}=Vo+1V, C_{IN}=0.1μF, Co=1.0μF(Co=2.2μF: Vo≤2.0V), Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	Vo	Io=30mA	-1.0%	—	+1.0%	V
Input Voltage	V _{IN}		2.3	—	8	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	1.0	μA
Output Current	Io	Vo-0.1V (Vo≤2.0V Version) Vo-0.3V (Vo≥2.1V Version)	150	—	—	mA
Short Current Limit	I _{LIM}	Vo=0V	—	40	—	mA
Line Regulation	ΔVo/ΔV _{IN}	V _{IN} =Vo+1V ~ Vo+6.0V (Vo<2.0V Version) V _{IN} =Vo+1V ~ 8.0V (Vo≥2.0V Version), Io=30mA	—	—	0.20	%/V
Load Regulation	ΔVo/ΔIo	Io=0 ~ 100mA	—	—	0.03	%/mA
Dropout Voltage(*3)	ΔV _{I-O}	Io=100mA	2.1V≤Vo≤2.4V	—	0.17	0.22 V
			2.5V≤Vo≤2.7V	—	0.15	0.20 V
			2.8V≤Vo≤3.3V	—	0.13	0.18 V
			3.4V≤Vo≤5.0V	—	0.11	0.16 V
Ripple Rejection	RR	ein=200mVrms, f=1kHz, Io=10mA, Vo=3.0V Version	—	65	—	dB
Average Temperature Coefficient of Output Voltage	ΔVo/ΔTa	Ta=0 ~ 85°C, Io=10mA	—	±100	—	ppm/°C
Output Noise Voltage	V _{NO}	f=10Hz ~ 80kHz, Io=0mA, Vo=3.0V Version	—	75	—	μVrms
Pull-down Resistance	R _{CONT}		2	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

(*3): Except output voltage less than 2.1V.

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.