HIGH PRECISION C-MOS 2-OUTPUT POSTIVE VOLTAGE REGULATOR

PRELIMINARY

■ GENERAL DESCRIPTION

The NJU7224 series is a high precision 2-output voltage (±2%) C-MOS positive voltage regulator which contains dual system of internal accurate voltage reference, error amplifier, control transistor output voltage setting resistor and strobe circuit.

The regulation voltage is fixed by internal circuits and two types of voltage outputs are available.

The strobe circuit which control the regulation voltage output On / Off, effectiveness is programmable.

This series is suitable for battery operated items and battery back-up systems because of low operating current and low dropout voltage.

■ PACKAGE OUTLINE

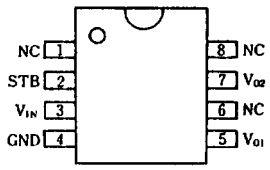
NJU7224M

NJU7224V

■ FEATURES

- Positive Voltage Two-Output (Programmable)
- Low Stand-By Current (5 μA MAX)
- High Precision Output Voltage (±2%)
- Wide Operating Voltage 3.0V ~ 12.0V
- Low Dropout Voltage ($\triangle V_{IO}$<0.6V, I_O=40mA)
- Small Temperature Coefficient of Output Voltage
- Build-In Strobe Circuit
- Strobe Function Programmable
- Package Outline DMP/SSOP 8
- C-MOS Technology

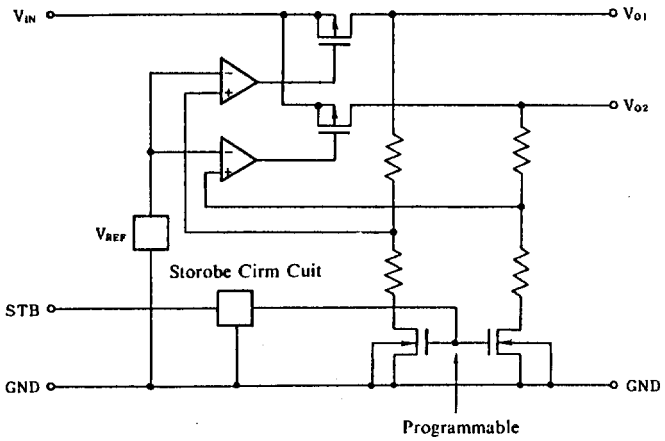
■ PIN CONFIGURATION



■ SERIES REFERENCE

VERSION	V_{O1}[V]	V_{O2}[V]	STB "H" or Open
NJU7224A	3.0	5.0	V_{O1}, V_{O2} Output "OFF"

■ EQUIVALENT CIRCUIT



■ TERMINAL DESCRPTION

NO.	SYMBOL	FUNCTION
1	NC	Non Connection
2	V_{IN}	Power Supply Terminal
3	STB	Output ON/OFF Control Terminal
4	GND	Ground
5	V_{O1}	Output Terminal 1
6	NC	Non Connection
7	V_{O2}	Output Terminal 2
8	NC	Non Connection

(Note) During the STB terminal is "L", regulation voltage is output and during the STB is "H" or "OPEN", the output is disablement. The V_{O1} and V_{O2} regulation voltage can be assigned by pre-fix voltage selected from 1.2V to 8.5V and its ON/OFF can also be set by using the programmable strobe function.

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25℃)

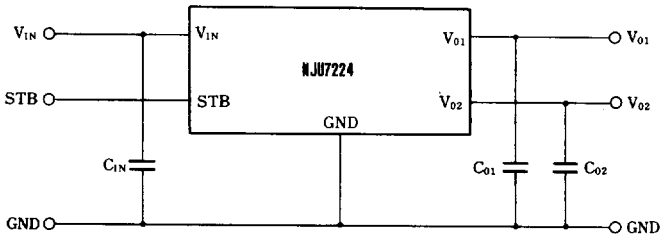
PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V_{IN}	14	V
Strobe Input Voltage	V_{ST}	$V_{IN} \geqq V_{ST}$	V
Output Voltage	V_{O1} V_{O2}	GND − 0.3 ~ V_{IN}+0.3	V
Output Current	I_{O1} I_{O2}	100	mA
Power Dissipation	P_D	250 (SSOP) 300 (DMP)	mW
Operating Temperature Range	T_{opr}	−25 ~ +75	℃
Storage Temperature Range	T_{stg}	−40 ~ +125	℃

■ ELECTRICAL CHARACTERISTICS

(C_{IN}=0.1 μF, C_{O1}=C_{O2}=0.01 μF, Ta=25℃, V_{IN}=7V, V_{O1}=3V, V_{O2}=5V)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{O1}	I_{O1}=10mA	2.94		3.06	V
	V_{O2}	I_{O2}=30mA	4.90		5.10	V
Input Voltage	V_{IN}				12.0	V
Dropout Voltage	ΔV_{IO1}	I_{O1}=20mA		0.2	0.6	V
	ΔV_{IO2}	I_{O2}=40mA		0.3	0.6	V
Stand−By Current	I_O	V_{ST}=7V		3.0	5.0	μA
Load Regulation	$\Delta V_{O1} / \Delta I_{O1}$	I_{O1}=1 ~ 20mA		80	120	mV
	$\Delta V_{O2} / \Delta I_{O2}$	I_{O2}=1 ~ 40mA		120	180	mV
Line Regulation	$\Delta V_{O1} / (\Delta V_{IN} \cdot V_{O1})$	V_{IN}=6V ~ 12V		0.1		%/V
	$\Delta V_{O2} / (\Delta V_{IN} \cdot V_{O2})$			0.1		%/V
Strobe "H" Input Volt	V_{STH}		5.0			V
Strobe "L" Input Volt	V_{STL}				2.0	V
Strobe Input Current	I_{ST}	V_{ST}=0V	5.0	10	20	μA
Operating Current	I_{DD}			30	60	μA

■ MEASUREMENT CIRCUIT



$C_{IN}=0.1\mu F$, $C_{01}=C_{02}=0.01\mu F$