

Low Dropout Voltage Regulator with Reset

■ GENERAL DISCRIPTION

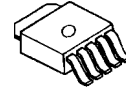
The NJM2807 is a low dropout voltage regulator with reset function.

It provides up to 500mA of logic supply, and the reset function monitors input voltage of the regulator with 1% accuracy. It is suitable for local power supply and reset for small micro controller and other logic chips.

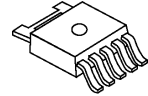
■ FEATURES

- Output Voltage Accuracy $V_o \pm 1.0\%$
- Reset Voltage Accuracy $V_{RT} \pm 1.0\%$
- Adjust reset delay time with external capacitor.
- Ripple Rejection 75dB typ. (f=1kHz)
- Output Voltage Monitor type
- Open Collector Output
- Internal Short Circuit Current Limit
- Internal Thermal Overload Protection
- Bipolar Technology
- Package Outline TO-252-5

■ PACKAGE OUTLINE

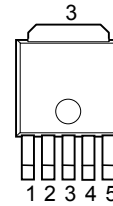


NJM2807DL2

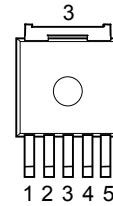


NJM2807DL3

■ PIN CONFIGURATION



NJM2806DL2



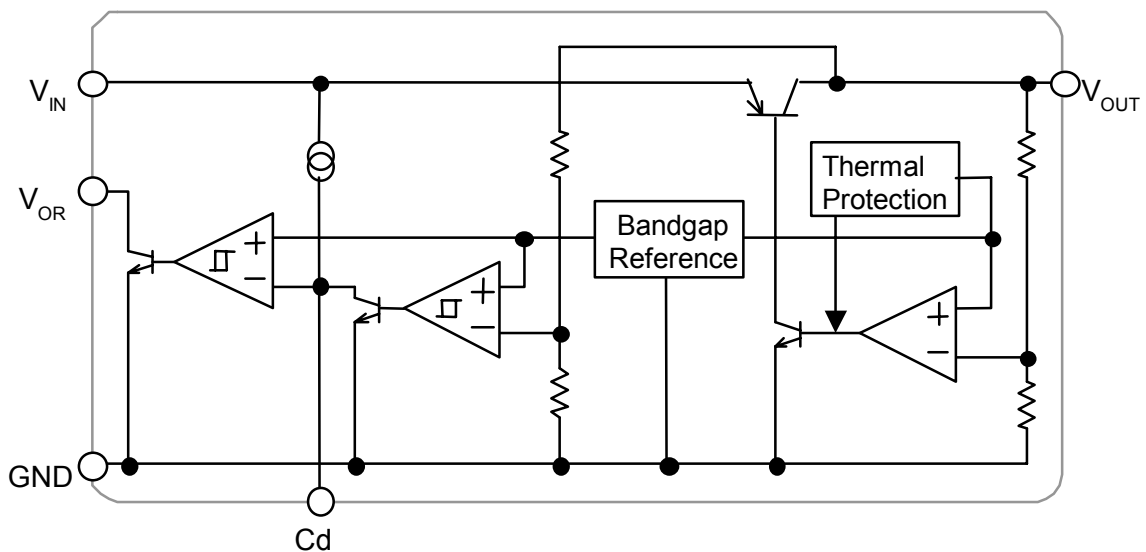
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- 1. V_{OR}
- 2. V_{IN}
- 3. GND
- 4. V_{OUT}
- 5. Cd

■ OUTPUT VOLTAGE/ DETECTION VOLTAGE

Device Name	Output Voltage	Detection Voltage
NJM2807DL*-0543	5.0V	4.3V

■ EQUIVALENT CIRCUIT



NJM2807

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V_{IN}	+14	V
Power Dissipation	P_D	8 (Tc=25°C)	W
		0.8 (Ta≤25°C)	
Operating Temperature	Topr	-40~+85	°C
Storage Temperature	Tstg	-40~+125	°C

■ ELECTRICAL CHARACTERISTICS

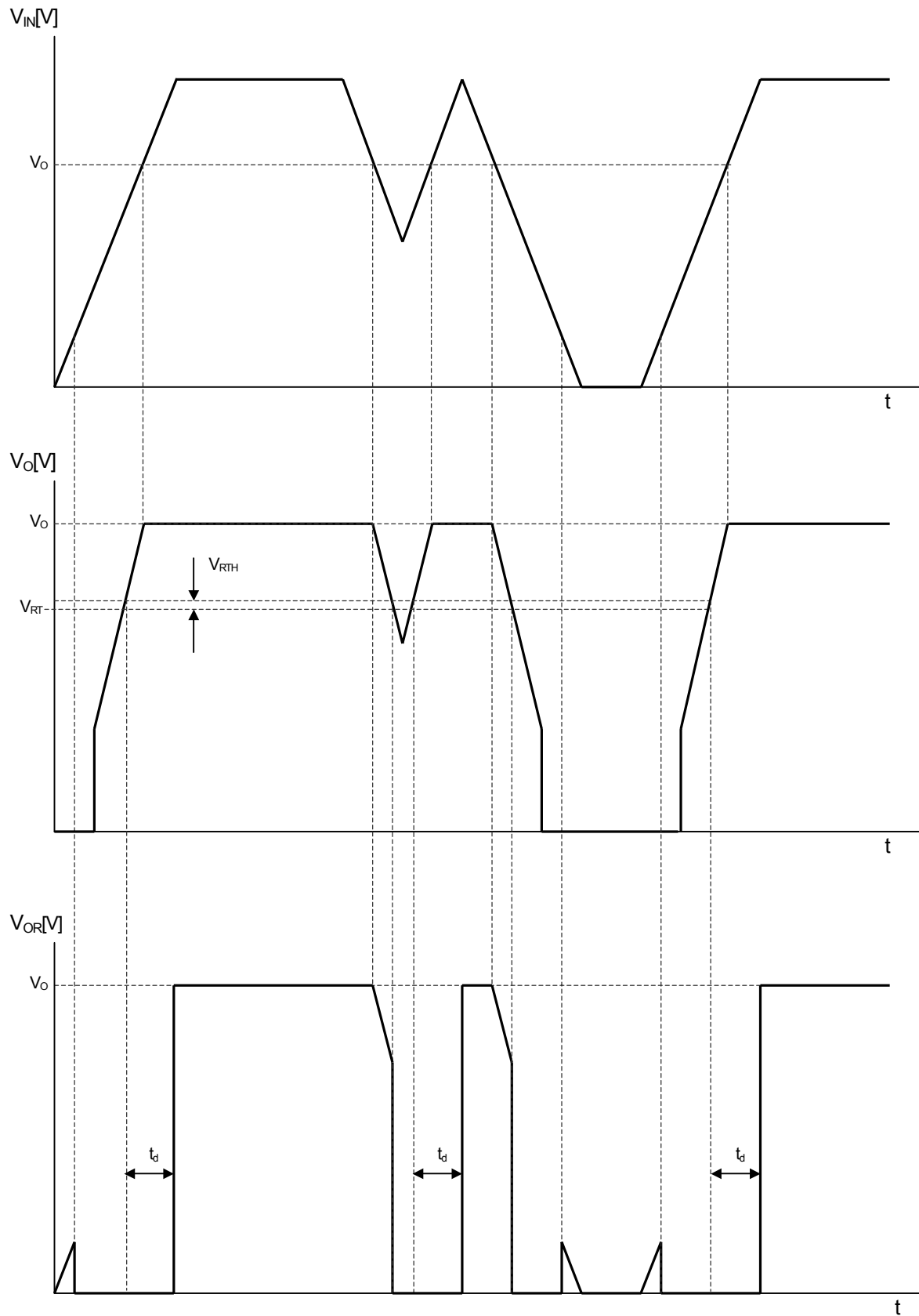
($V_{IN}=V_o+1V$, $C_{IN}=0.33\mu F$, $C_o=1.0\mu F$ ($C_o=2.2\mu F$: $V_o\leq 2.4V$) Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I_Q	$V_{IN}=V_o+2V$, $I_o=0mA$	-	330	430	μA
Regulator Block						
Output Voltage	V_o	$I_o=30mA$	-1.0%	-	+1.0%	V
Output Current	I_o	$V_o=0.3V$	500	650	-	mA
Line Regulation	$\Delta V_o/\Delta V_{IN}$	$V_{IN}=V_o+1V-V_o+6.0V$, $I_o=30mA$	-	-	0.10	%/V
Load Regulation	$\Delta V_o/\Delta I_o$	$I_o=0-500mA$	-	-	0.03	%/mA
Dropout Voltage	ΔV_{I_O}	$I_o=300mA$	-	0.18	0.28	V
Ripple Rejection	RR	$e_{in}=200mV_{rms}$, $f=1kHz$, $I_o=10mA$, $V_o=3.0V$ Version	-	75	-	dB
Output Voltage Temperature Coefficient	$\Delta V_o/\Delta T$	Ta=0~85°C, $I_o=10mA$	-	±50	-	ppm/°C
Output Noise Voltage	V_{NO}	$f=10Hz-80kHz$, $I_o=10mA$, $V_o=3.0V$ Version	-	50	-	μV_{rms}
Reset Block						
Voltage Detection	V_{RT}	$V_{IN}=H\rightarrow L$	-1.0%	-	+1.0%	V
Hysteresis Voltage	V_{RTH}	$V_{IN}=H\rightarrow L\rightarrow H$	$V_{RT} \times 3\%$	$V_{RT} \times 5\%$	$V_{RT} \times 8\%$	mV
Low Level Output Voltage	R_{ORL}	$V_{IN}=V_{RT}-0.5V$, $R_L=100k\Omega$	-	100	300	mV
Output Leak Current	I_{ORH}	$V_{IN}=V_{RT}+0.5V$	-	-	0.1	μA
On time Output Current	I_{ORL}	$V_{IN}=V_{RT}-0.5V$, $R_L=0\Omega$	5	-	-	mA
Reset Output Delay Time	t_d	$V_{IN}=(V_{RT}-0.5V)\rightarrow (V_{RT}+0.5V)$, $C_d=0.1\mu F$	9	10	11	ms
Operation Voltage Limit	V_{OPL}	$V_{ORL}=0.4V$	-	0.9	-	V

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.

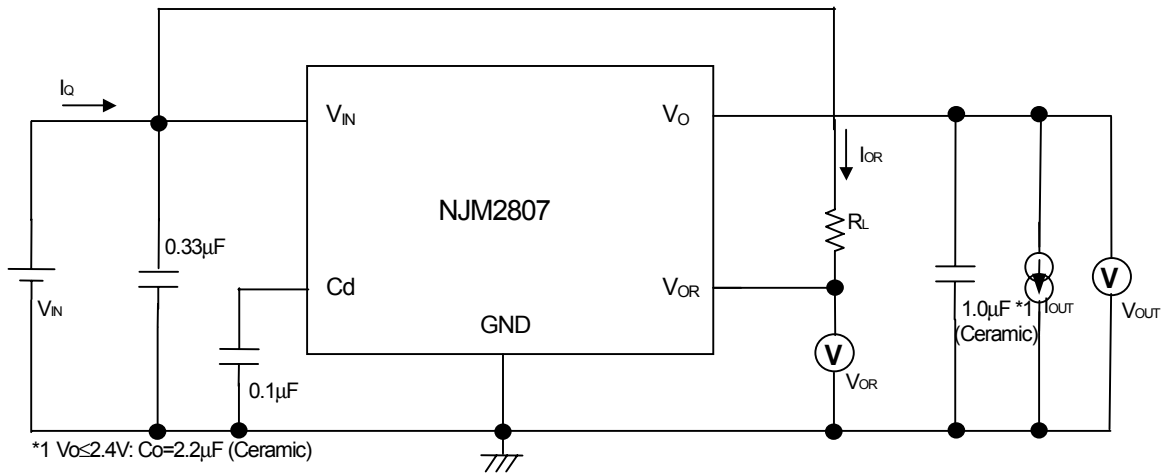
■ TIMING CHART



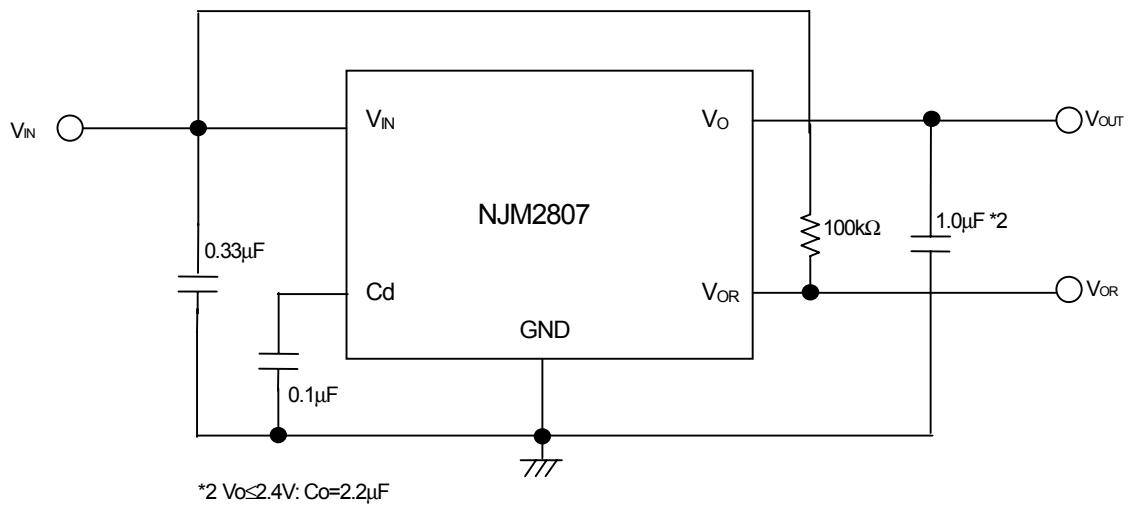
* When the pull-up of the V_{OR} is carried out to V_{IN} through resistance.

NJM2807

■ TEST CIRCUIT



■ TYPICAL APPLICATIONS



[CAUTION]

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