

Low Dropout Voltage Regulator with Reset

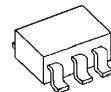
■ GENERAL DISCRIPTION

The NJM2800 is a low dropout voltage regulator with reset function.

It provides up to 150mA of logic supply, and the reset function monitors either input or output voltage of the regulator with 1% accuracy.

It is suitable for local power supply and reset for small micro controller and other logic chips.

■ PACKAGE OUTLINE



NJM2800F

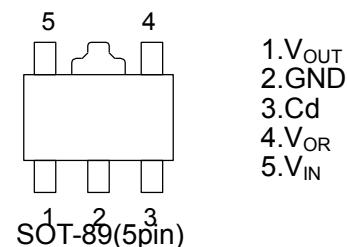
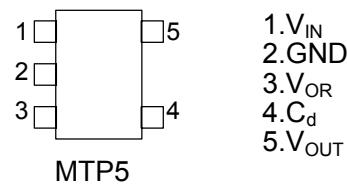


NJM2800U

■ FEATURES

- Output Voltage Accuracy $V_o = \pm 1.0\%$
- Reset Voltage Accuracy $V_{reset} = \pm 1.0\%$
- Reset Hold Time $t_d = 10mS \pm 1.0mS$
- Ripple Rejection 60dB typ. ($f=1kHz$)
- Quiescent Current $I_Q = 250\mu A$ (typ.)
- Input Voltage Monitor type
- Open Collector Output
- Internal Short Circuit Current Limit
- Internal Thermal Overload Protection
- Bipolar Technology
- Package Outline SOT89 (5pin) / MTP5

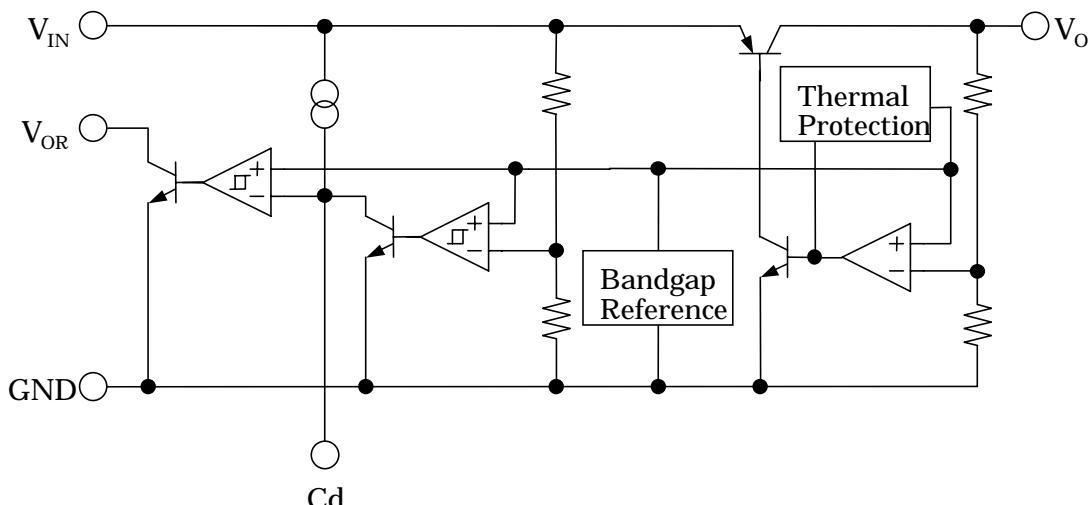
■ PIN CONFIGURATION



■ OUTPUT VOLTAGE/ DETECTION VOLTAGE

Device Name	Output Voltage	Detection Voltage
NJM2800F/U1803	1.8V	3.0V
NJM2800U3342	3.3V	4.2V

■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V _{IN}	+14	V
Power Dissipation	P _D	200 (MTP5)	mW
		350 (SOT-89)	
Operating Temperature	T _{opr}	-40~+85	°C
Storage Temperature	T _{stg}	-40~+125	°C

■ ELECTRICAL CHARACTERISTICS

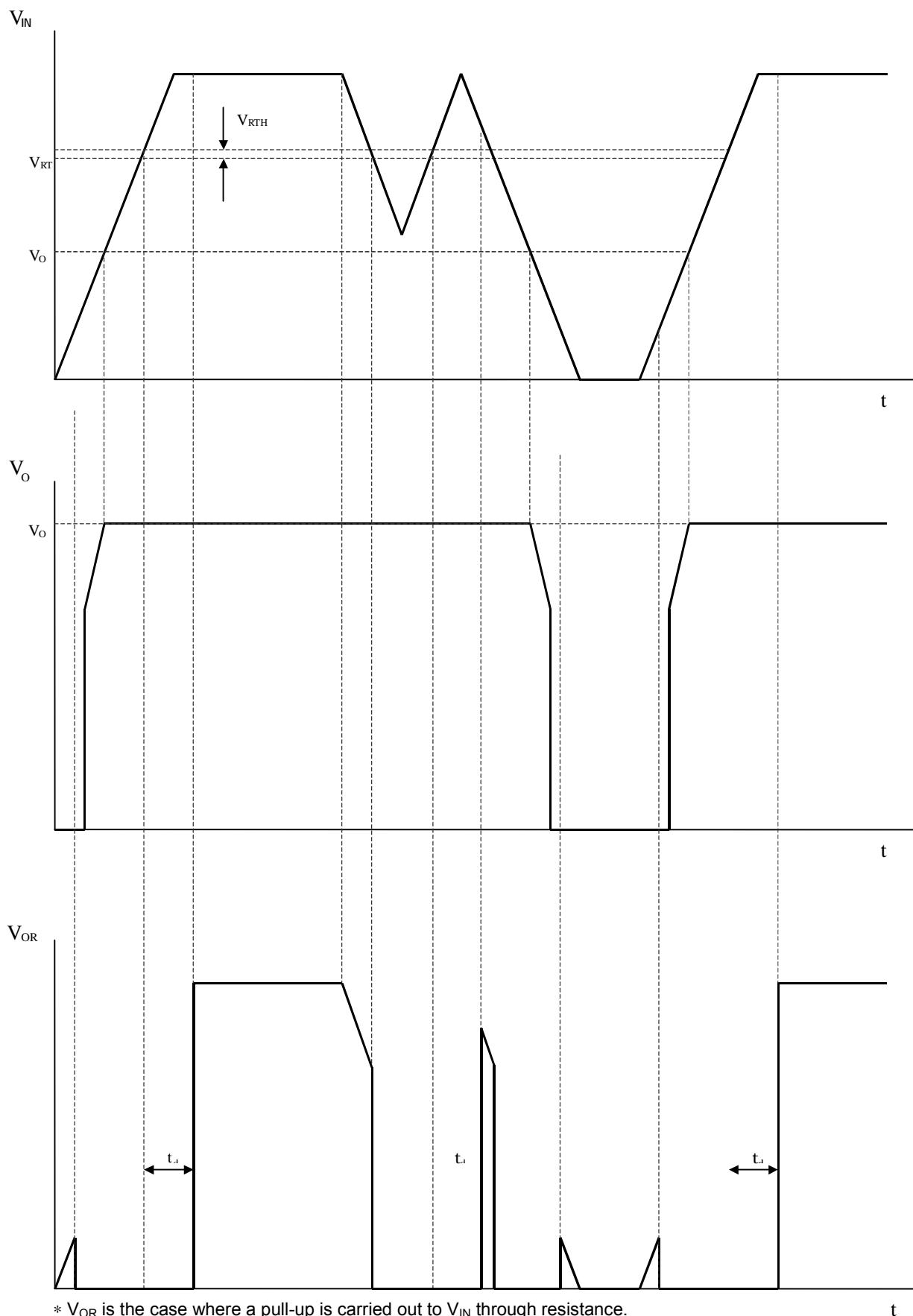
(V_{IN}=V_O+1V, C_{IN}=0.1μF, C_O=1μF (V_O≤2.6V: C_O=2.2μF) Ta=25°C)

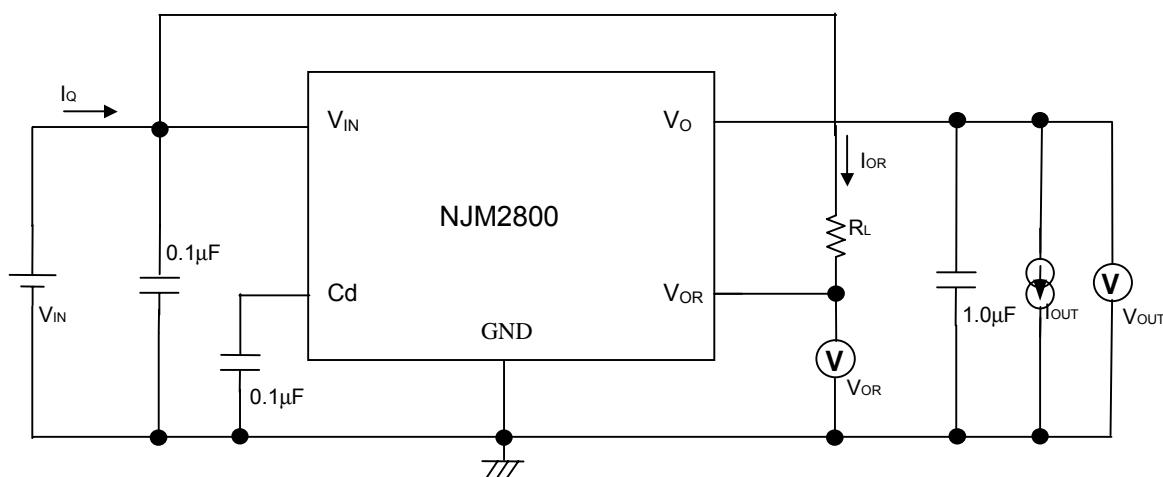
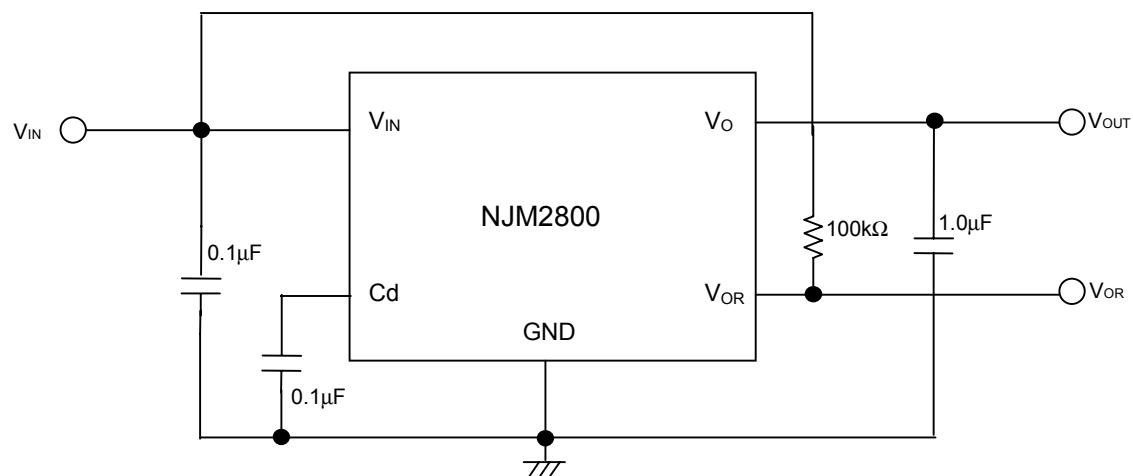
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I _Q	V _{IN} =V _O +2V, I _O =0mA	—	250	350	μA
Regulator Block						
Output Voltage	V _O	I _O =30mA	-1.0%	—	+1.0%	V
Output Current	I _O	V _O -0.3V	150	200	—	mA
Line Regulation	ΔV _O /ΔV _{IN}	V _{IN} =V _O +1V~V _O +6V, I _O =30mA	—	—	0.10	%/V
Load Regulation	ΔV _O /ΔI _O	I _O =0~100mA	—	—	0.03	%/mA
Dropout Voltage	ΔV _{L_O}	I _O =60mA	—	0.10	0.18	V
Ripple Rejection	RR	e _{IN} =200mVrms, f=1kHz, I _O =10mA, V _O =3V	—	60	—	dB
Output Voltage Temperature Coefficient	ΔV _O /ΔT	T _a =0~85°C, I _O =10mA	—	±50	—	ppm/°C
Output Noise Voltage	V _{NO}	f=10Hz~100kHz, I _O =10mA, V _O =3V	—	45	—	μVrms
Reset Block						
Voltage Detection	V _{RT}	V _{IN} =H→L	-1.0%	—	+1.0%	V
Hysteresis Voltage	V _{RTH}	V _{IN} =H→L→H	V _{RT} ×3%	V _{RT} ×5%	V _{RT} ×8%	mV
Low Level Output Voltage	R _{ORL}	V _{IN} =V _{RT} -0.5V, R _L =100kΩ	—	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 =0Ω	5	—	—	mA
Reset Output Delay Time	t _d	V _{IN} =(V _{RT} -0.5V)→(V _{RT} +0.5V), C _d =0.1μF	9	10	11	μs
Operation Voltage Limit	V _{OPL}	V _{ORL} =0.4V	—	0.9	—	V

(note 1) 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



■ TEST CIRCUIT**■ TYPICAL APPLICATIONS**

[CAUTION]
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