

Low Dropout Voltage Regulator with Reset

■ GENERAL DISCRIPTION

The NJM2805 is a low dropout voltage regulator with reset function.

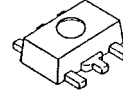
It provides up to 300mA of logic supply, and the reset function monitors output voltage of the regulator with 1% accuracy.

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

■ FEATURES

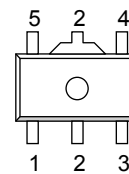
- Output Voltage Accuracy $V_o \pm 1.0\%$
- Reset Voltage Accuracy $V_{RT} \pm 1.0\%$
- Adjust reset delay time with external capacitor.
- Ripple Rejection 75dB typ. (f = 1kHz)
- Output Voltage Monitor type
- Open Collector Output
- Internal Short Circuit Current Limit
- Internal Thermal Overload Protection
- Bipolar Technology
- Package Outline SOT-89 -5

■ PACKAGE OUTLINE



NJM2805U1

■ PIN CONFIGURATION



NJM2805U1

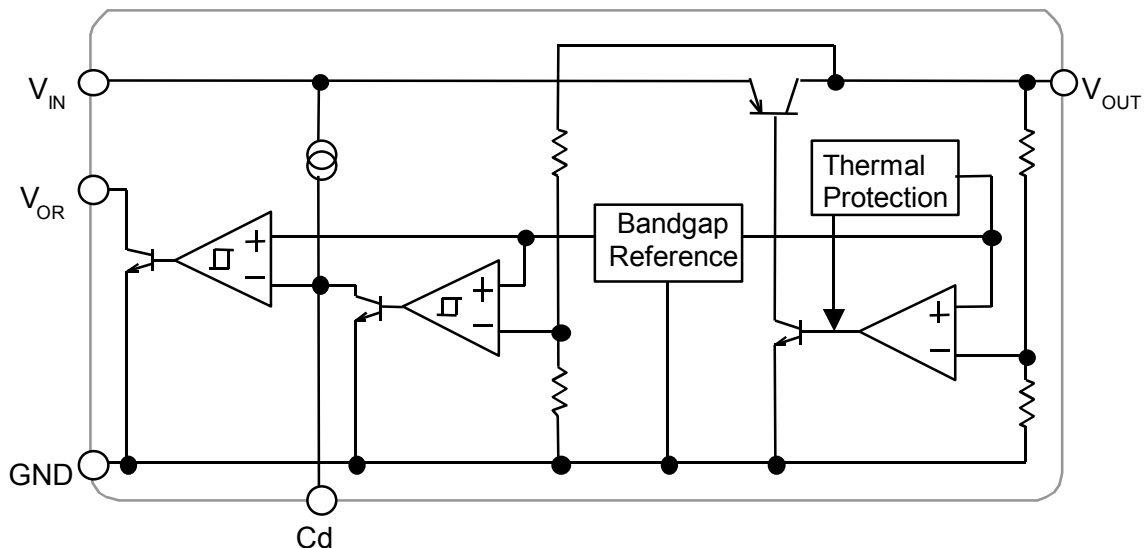
PIN FUNCTION

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

■ OUTPUT VOLTAGE/ DETECTION VOLTAGE

Device Name	V_{OUT}	V_{DET}
NJM2805U1-2923	2.9V	2.3V
NJM2805U1-3329	3.3V	2.9V
NJM2805U1-0543	5.0V	4.3V

■ EQUIVALENT CIRCUIT



NJM2805

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V _{IN}	+14	V
Power Dissipation	P _D	350	mW
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +125	°C

■ ELECTRICAL CHARACTERISTICS

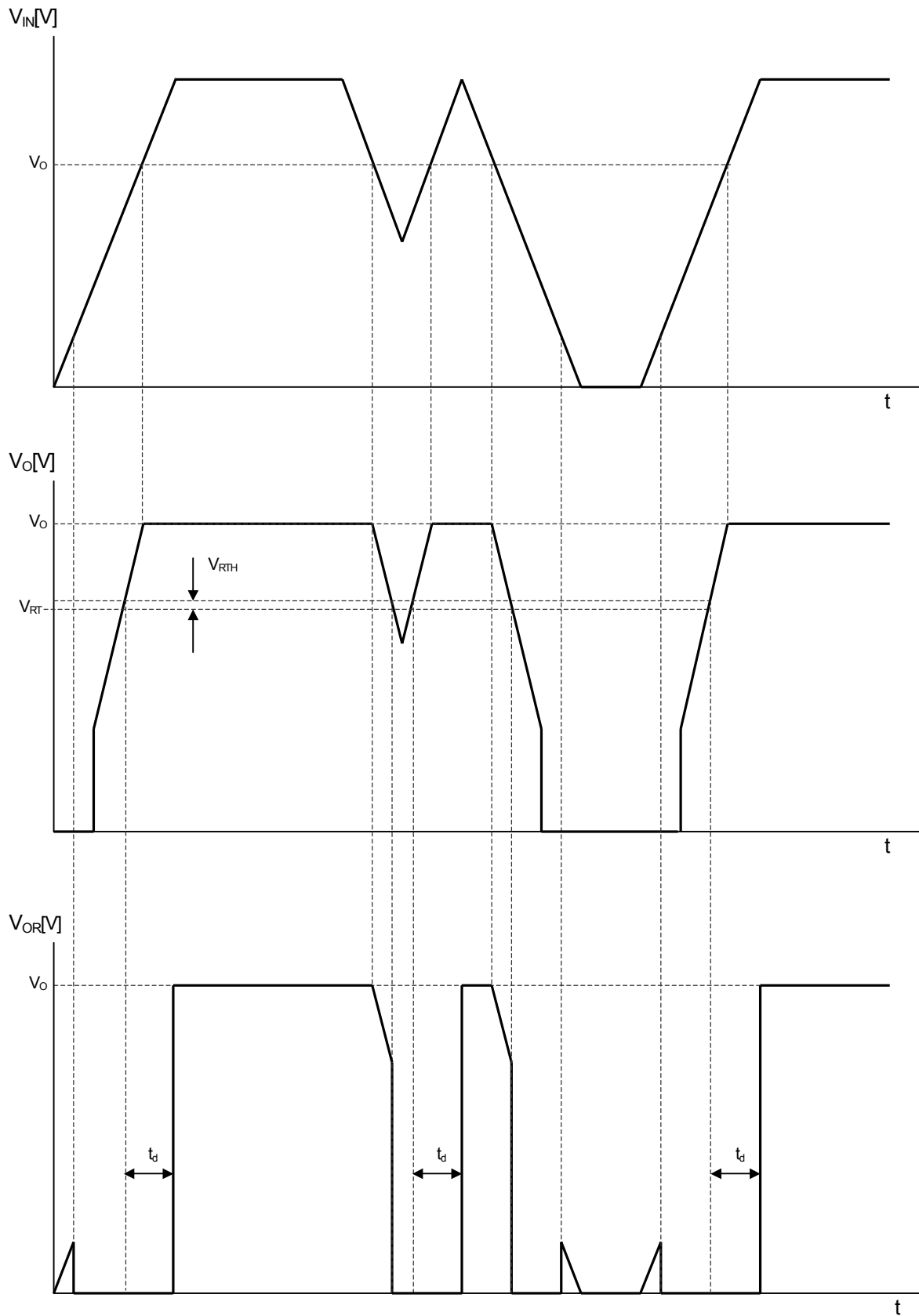
(V_{IN}=V_o+1V, C_{IN}=0.1μF, C_o=1μF (C_o=2.2μF: V_o≤2.6V) Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I _Q	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	300	400	–	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 ~ 300mA	–	–	0.03	%/mA
Dropout Voltage	ΔV _{L_O}	I _o =100mA	–	0.10	0.18	V
Ripple Rejection	RR	e _{in} =200mVrms, f=1kHz, I _o =10mA, V _o =3V Version	–	75	–	dB
Output Voltage Temperature Coefficient	ΔV _o /ΔT	Ta=0 ~ 85°C, I _o =10mA	–	±50	–	ppm/°C
Output Noise Voltage	V _{NO}	f=10Hz ~ 80kHz, I _o =10mA, V _o =3V Version	–	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%	V
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	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.

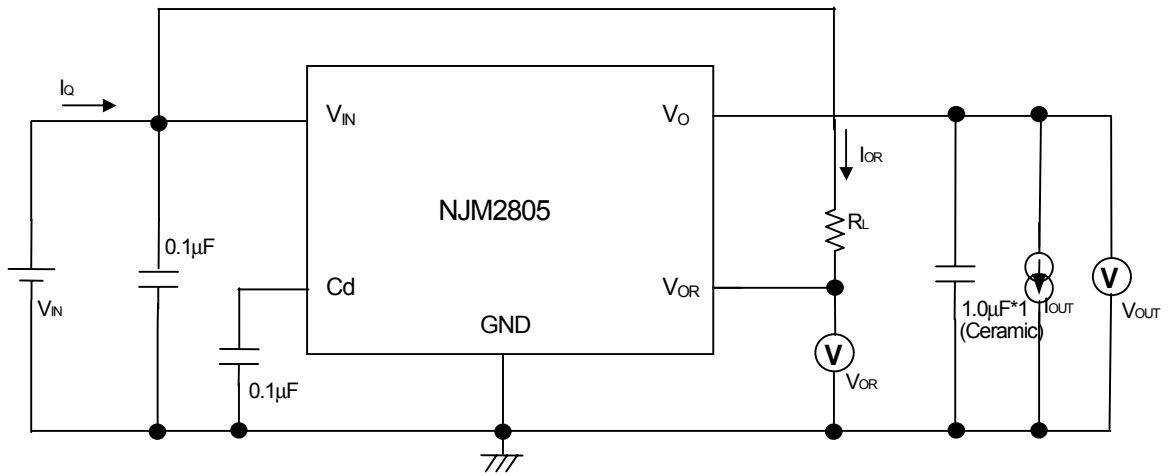
■ TIMING CHART



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

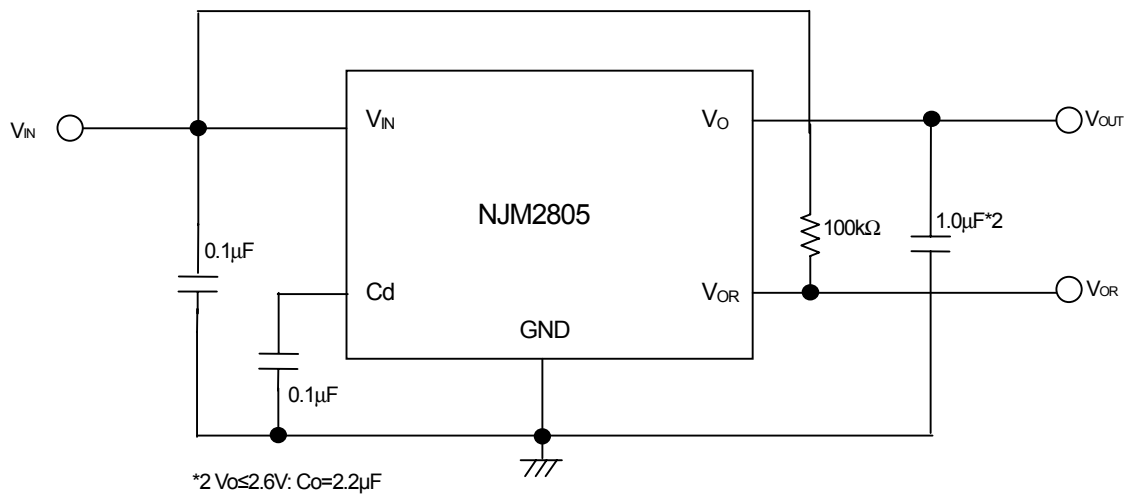
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■ TEST CIRCUIT



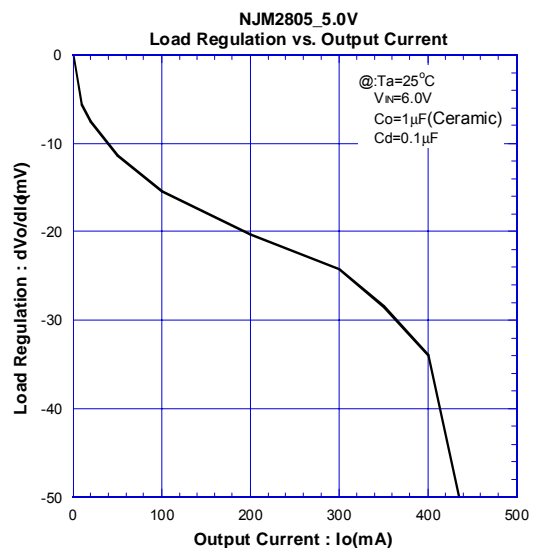
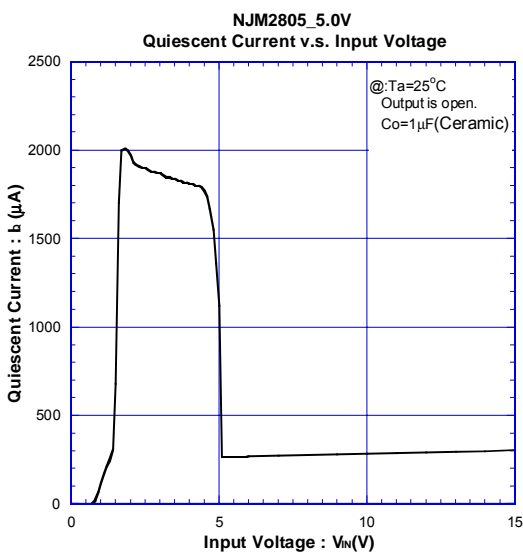
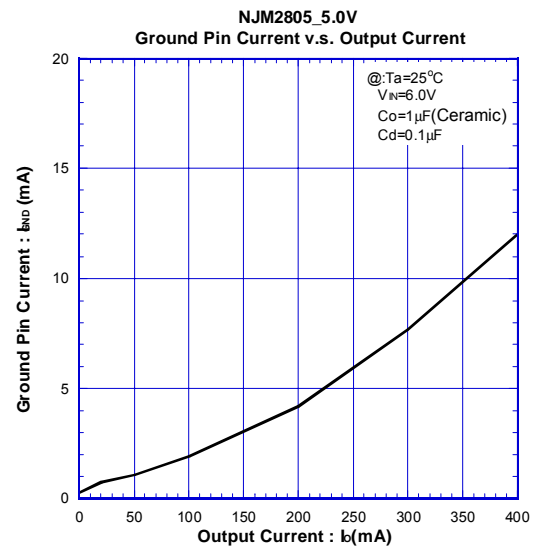
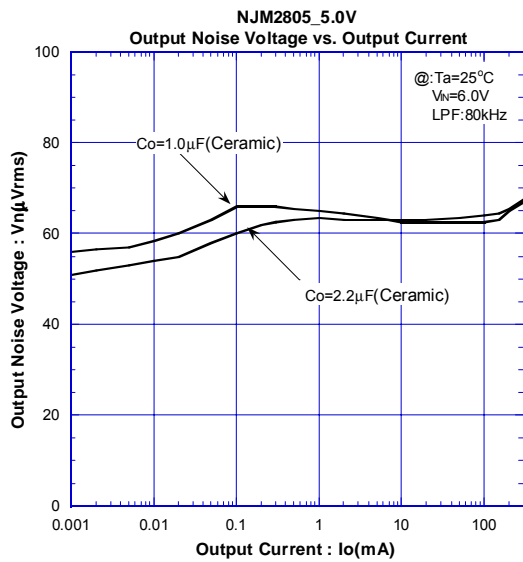
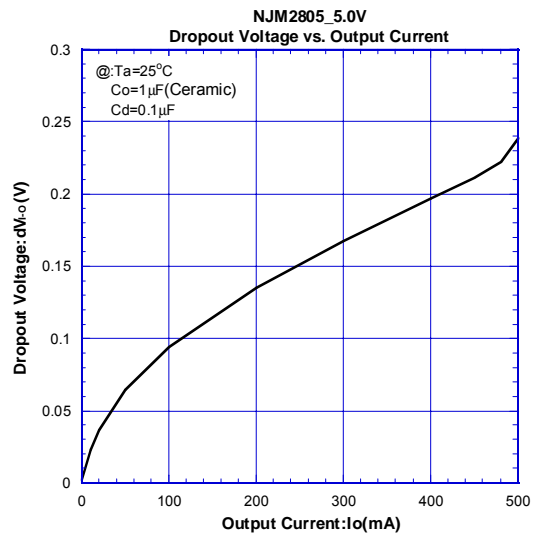
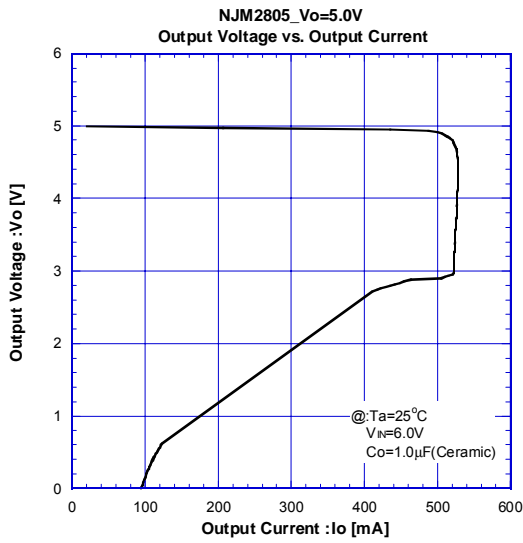
*1 $V_{OS} \leq 2.6V$; $C_O = 2.2\mu F$ (Ceramic)

■ TYPICAL APPLICATIONS



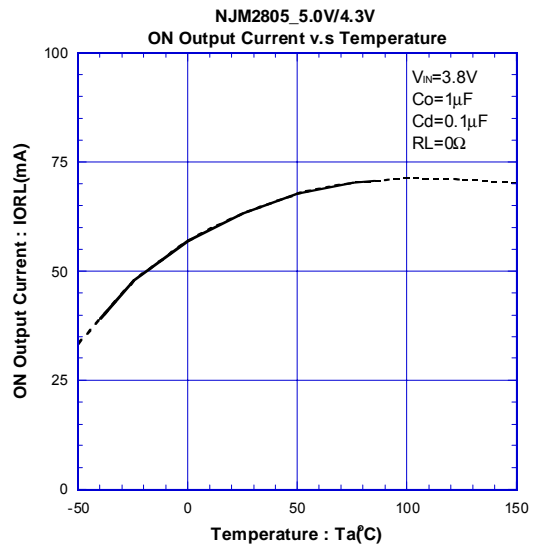
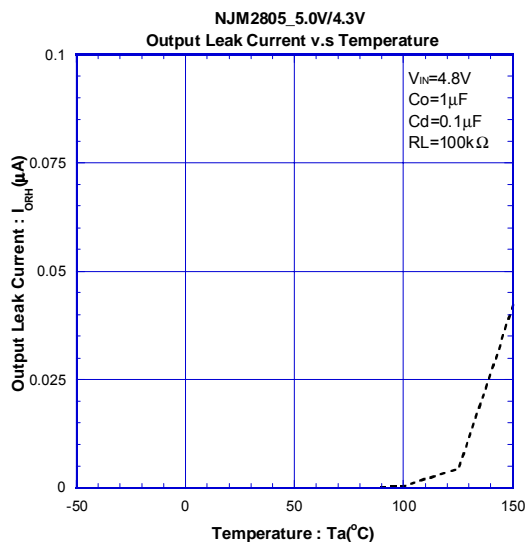
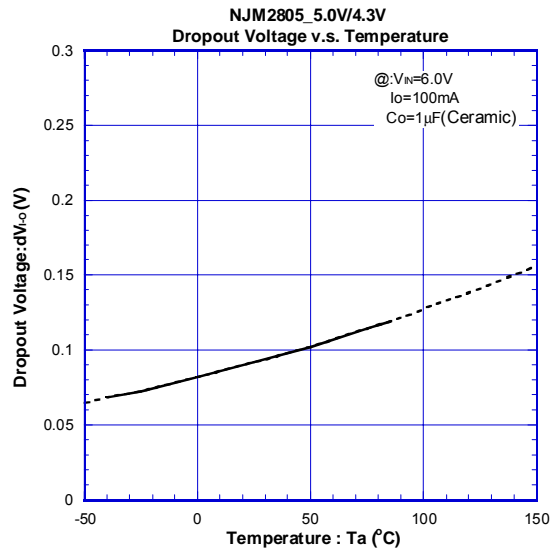
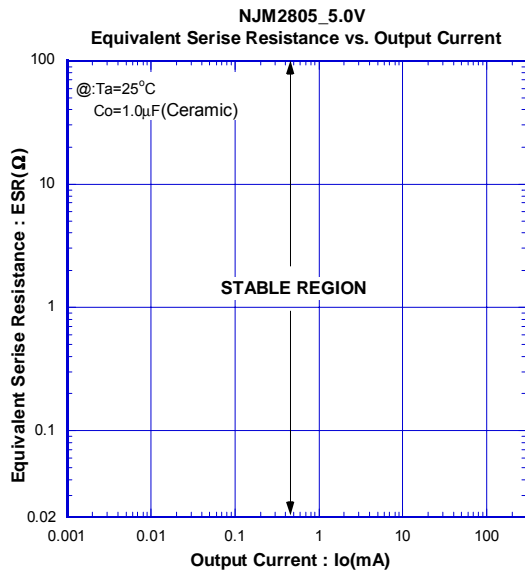
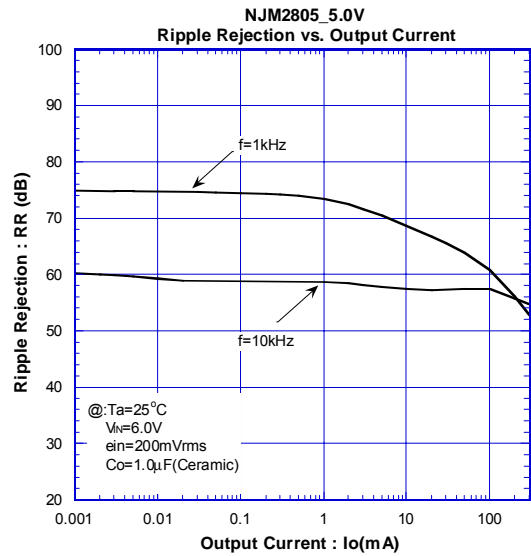
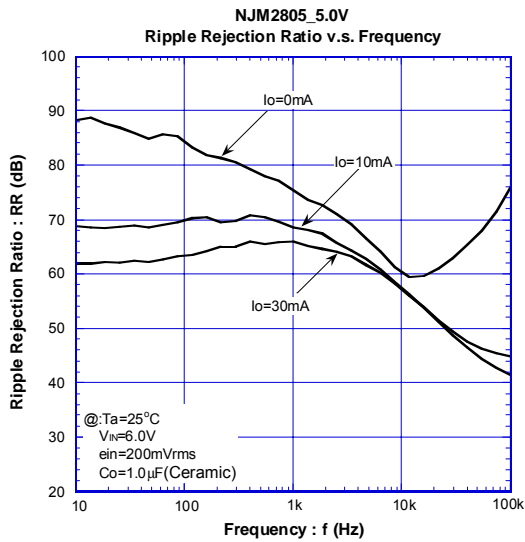
*2 $V_{OS} \leq 2.6V$; $C_O = 2.2\mu F$

ELECTRICAL CHARISTICS

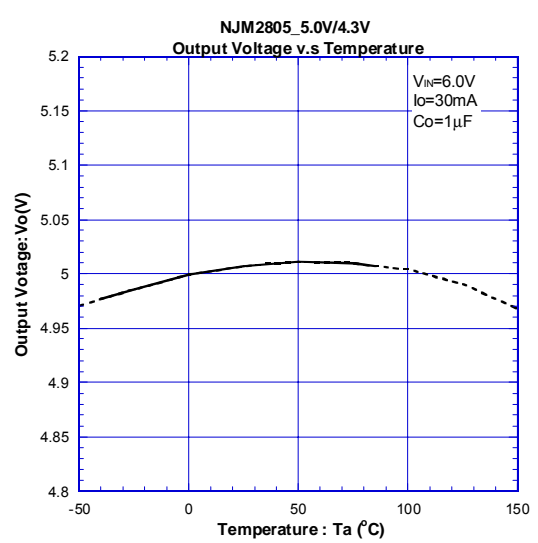
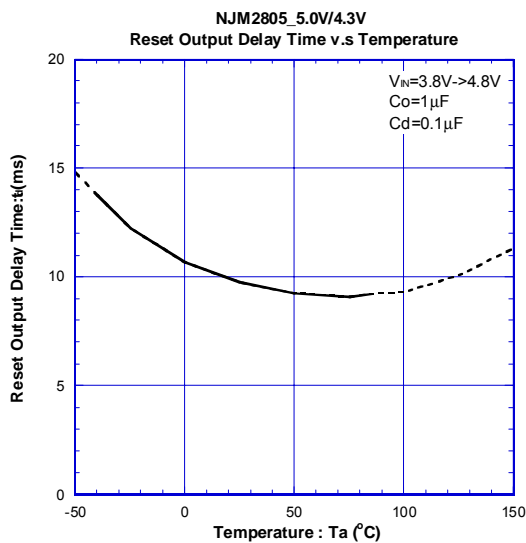
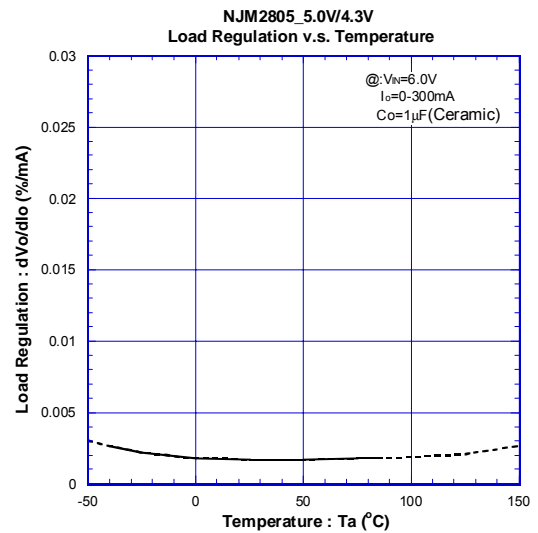
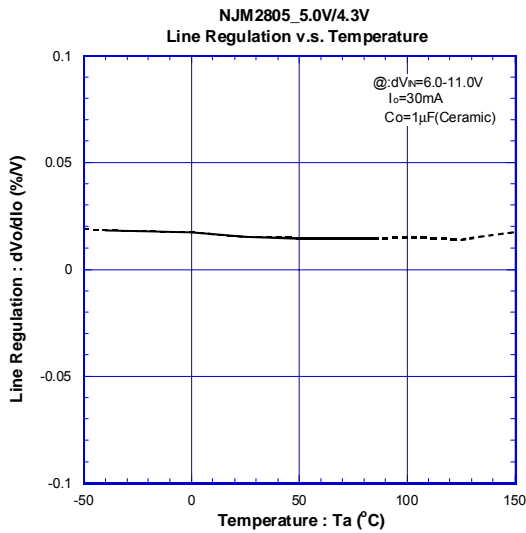
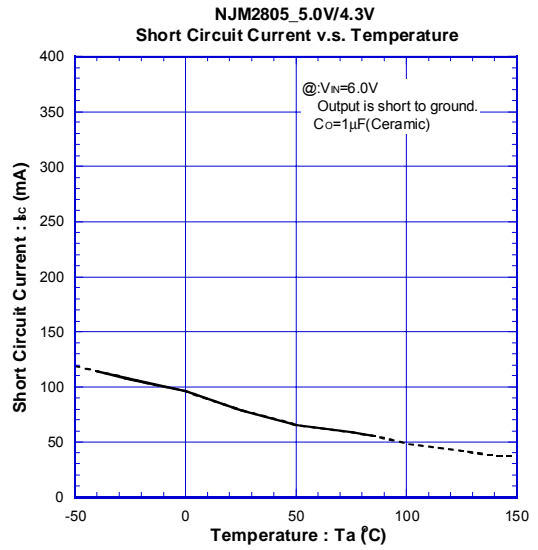
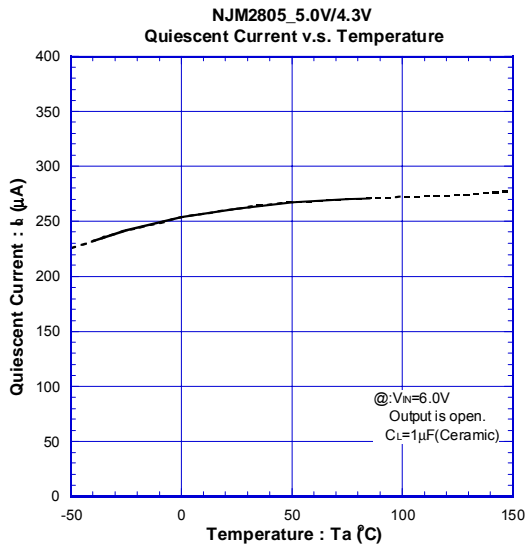


NJM2805

ELECTRICAL CHARACTERISTICS

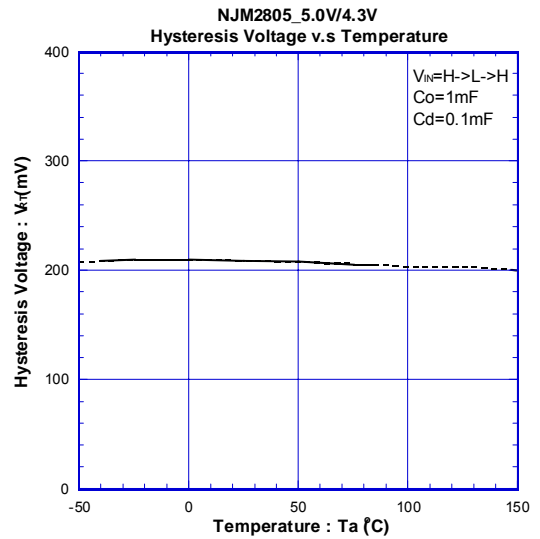
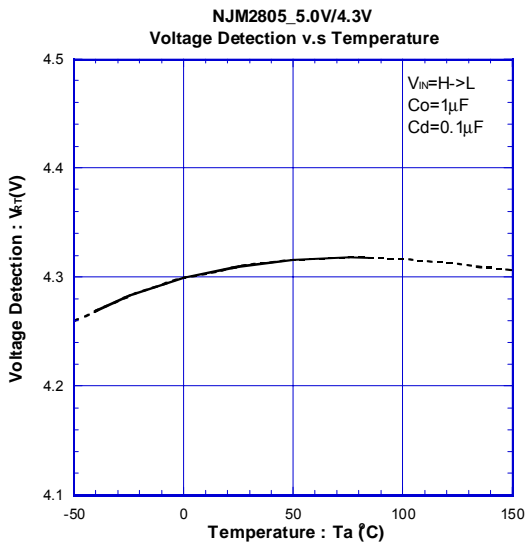
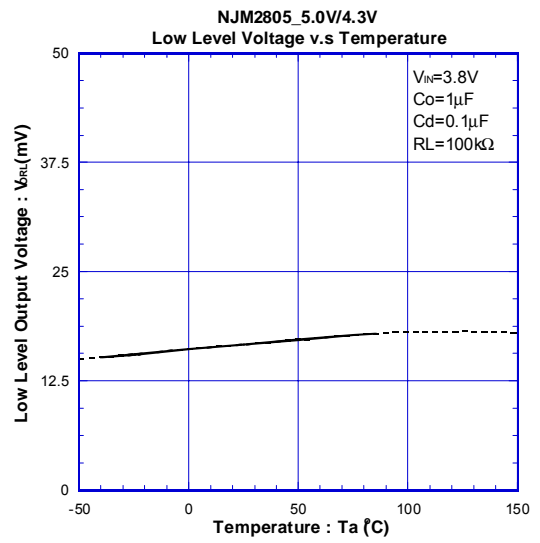
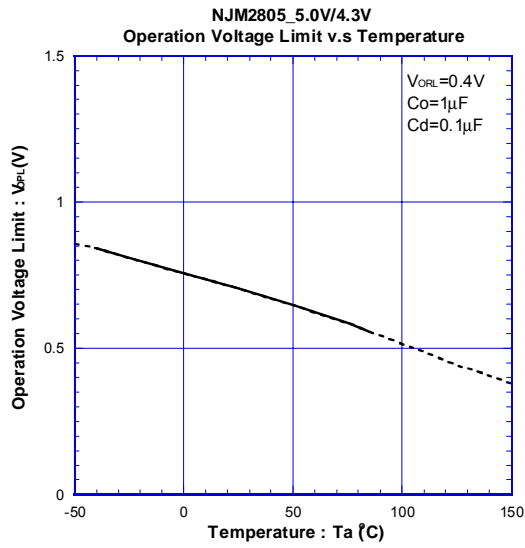


■ ELECTRICAL CHARISTICS



NJM2805

■ ELECTRICAL CHARISTICS



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