

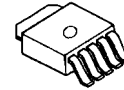
## LOW DROPOUT VOLTAGE REGULATOR

### ■ GENERAL DESCRIPTION

The NJM2886 is low dropout voltage regulator designed for portable application.

Advanced Bipolar technology achieves low noise, high ripple rejection and low quiescent current.

### ■ PACKAGE OUTLINE

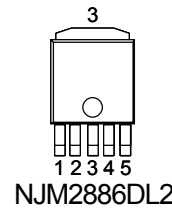


NJM2886DL2

### ■ FEATURES

- High Ripple Rejection      75dB typ. (f=1kHz)
- Output Noise Voltage       $V_{no}=45\mu V_{rms}$
- Output capacitor with 2.2 $\mu F$  ceramic capacitor ( $V_o \geq 2.7V$ )
- Output Current               $I_o(max.)=500mA$
- High Precision Output       $V_o \pm 1.0\%$
- Low Dropout Voltage      0.18V typ. ( $I_o=300mA$ )
- ON/OFF Control
- Internal Short Circuit Current Limit
- Internal Thermal Overload Protection
- Bipolar Technology
- Package Outline              TO-252-5

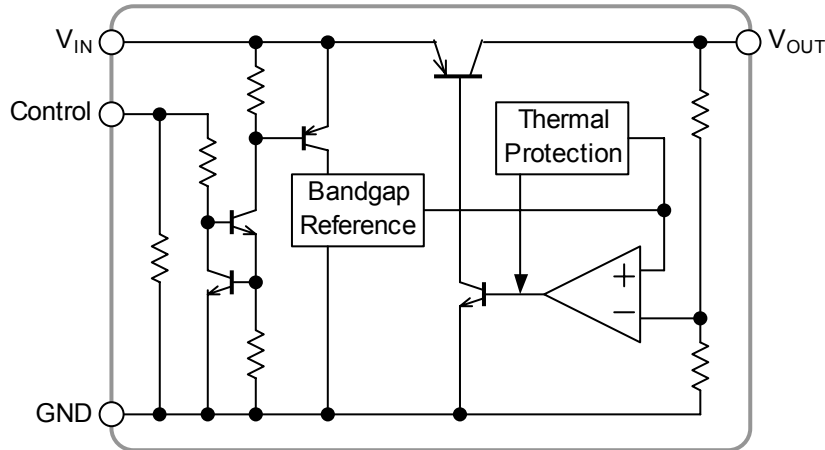
### ■ PIN CONFIGURATION



NJM2886DL2

- PIN FUNCTION
1. CONTROL
  2.  $V_{IN}$
  3. GND
  4.  $V_{OUT}$
  5. NC

### ■ EQUIVALENT CIRCUIT



### ■ OUTPUT VOLTAGE RANK LIST

Device Name	$V_{OUT}$	Device Name	$V_{OUT}$
NJM2886DL2-18	1.8V	NJM2886DL2-03	3.0V
NJM2886DL2-21	2.1V	NJM2886DL2-33	3.3V
NJM2886DL2-25	2.5V	NJM2886DL2-35	3.5V
NJM2886DL2-26	2.6V	NJM2886DL2-38	3.8V
NJM2886DL2-28	2.8V	NJM2886DL2-05	5.0V

# NJM2886

## ■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V <sub>IN</sub>	+14(*note 1)	V
Power Dissipation	P <sub>D</sub>	8(Tc=25°C) 0.8(Ta≤25°C)	mW
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +125	°C

(\*note 1): When input voltage is less than +14V, the absolute maximum control voltage is equal to the input voltage.

## ■ ELECTRICAL CHARACTERISTICS

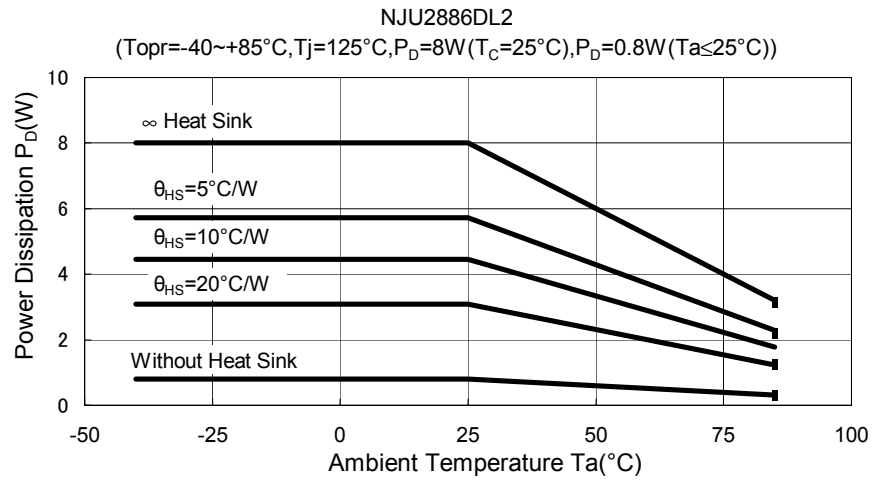
(V<sub>IN</sub>=V<sub>O</sub>+1V, C<sub>IN</sub>=0.33μF, Co=2.2μF: V<sub>O</sub>≥2.7V (Co=4.7μF: V<sub>O</sub>≤2.6V), Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	V <sub>O</sub>	I <sub>O</sub> =30mA	-1.0%	-	+1.0%	V
Quiescent Current	I <sub>Q</sub>	I <sub>O</sub> =0mA	-	200	300	μA
Quiescent Current at Control OFF	I <sub>Q(OFF)</sub>	V <sub>CONT</sub> =0V	-	-	100	nA
Output Current	I <sub>O</sub>	V <sub>O</sub> =0.3V	500	650	-	mA
Line Regulation	ΔV <sub>O</sub> /ΔV <sub>IN</sub>	V <sub>IN</sub> =V <sub>O</sub> +1V ~ V <sub>O</sub> +6.0V, I <sub>O</sub> =30mA	-	-	0.10	%/V
Load Regulation	ΔV <sub>O</sub> /ΔI <sub>O</sub>	I <sub>O</sub> =0 ~ 500mA	-	-	0.03	%/mA
Dropout Voltage	ΔV <sub>LO</sub>	I <sub>O</sub> =300mA	-	0.18	0.28	V
Ripple Rejection	RR	e <sub>in</sub> =200mVrms, f=1kHz, I <sub>O</sub> =10mA V <sub>O</sub> =3.0V Version	-	75	-	dB
Average Temperature Coefficient of Output Voltage	ΔV <sub>O</sub> /ΔTa	Ta=0-85°C, I <sub>O</sub> =10mA	-	±50	-	ppm/°C
Output Noise Voltage	V <sub>NO</sub>	f=10Hz-80kHz, I <sub>O</sub> =10mA, V <sub>O</sub> =3.0V Version	-	45	-	μVrms
Control Voltage for ON-state	V <sub>CONT(ON)</sub>		1.6	-	-	V
Control Voltage for OFF-state	V <sub>CONT(OFF)</sub>		-	-	0.6	V

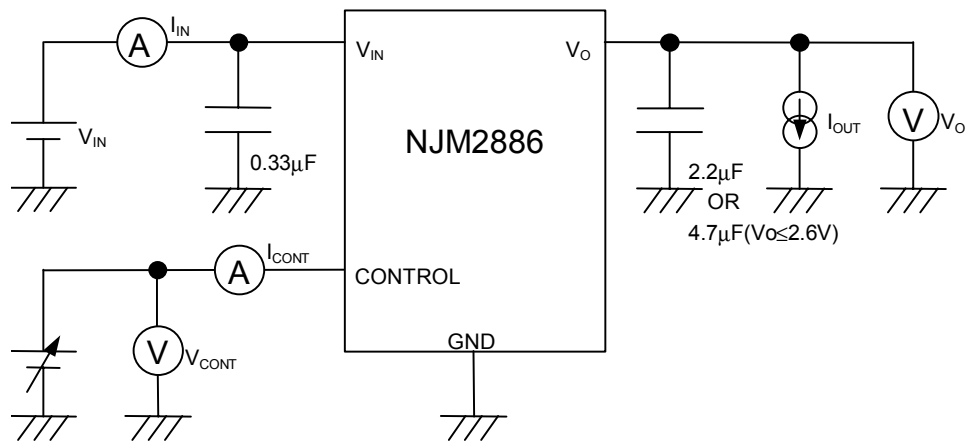
(\*note 2): The above specification is a common specification for all output voltages.

Therefore, it may be different from the individual specification for a specific output voltage.

## POWER DISSIPATION VS. AMBIENT TEMPERATURE



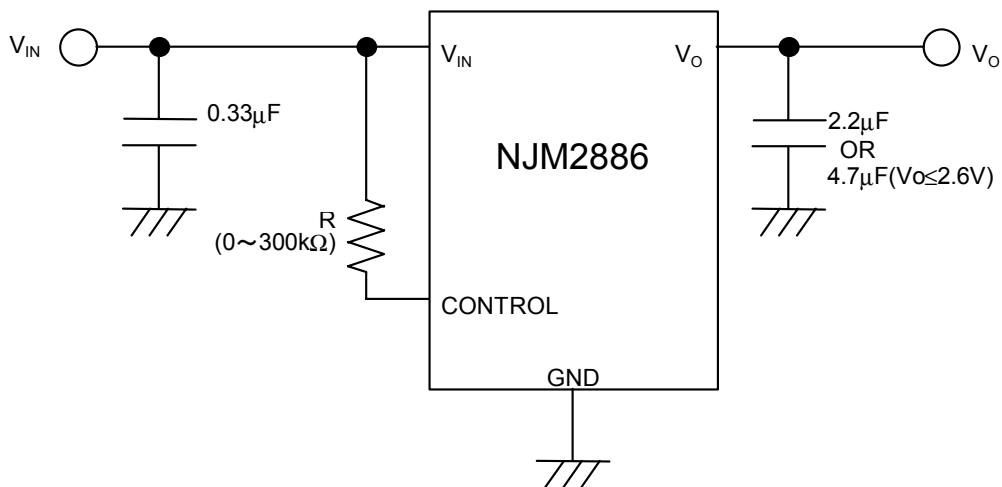
## TEST CIRCUIT



# NJM2886

## ■ TYPICAL APPLICATION

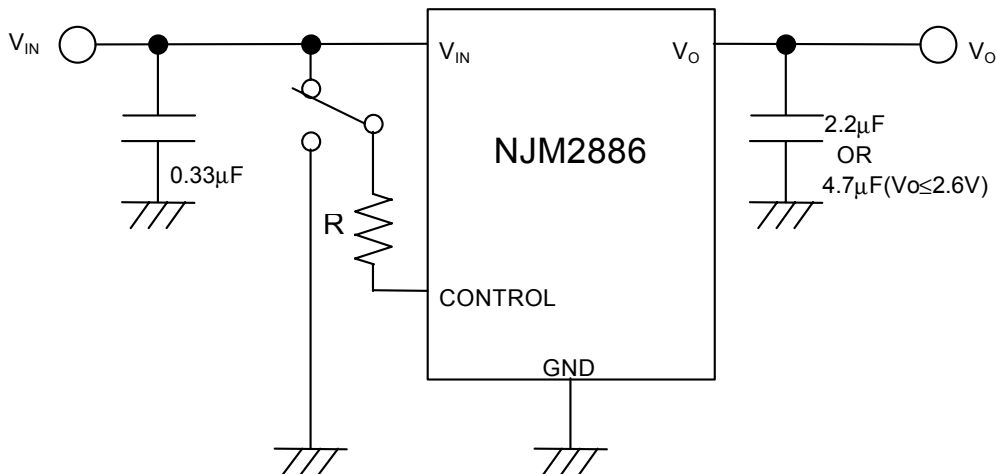
① In the case where ON/OFF Control is not required:



Connect control terminal to  $V_{IN}$  terminal

The quiescent current can be reduced by using a resistance “R”. Instead, it increases the minimum operating voltage. For further information, please refer to Figure “Output Voltage vs. Control Voltage”.

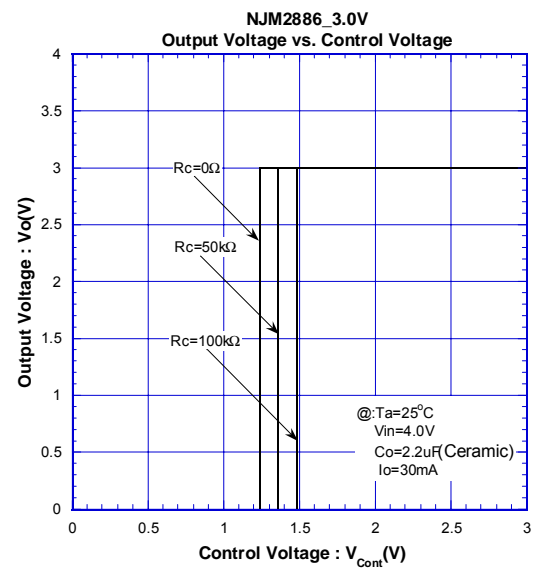
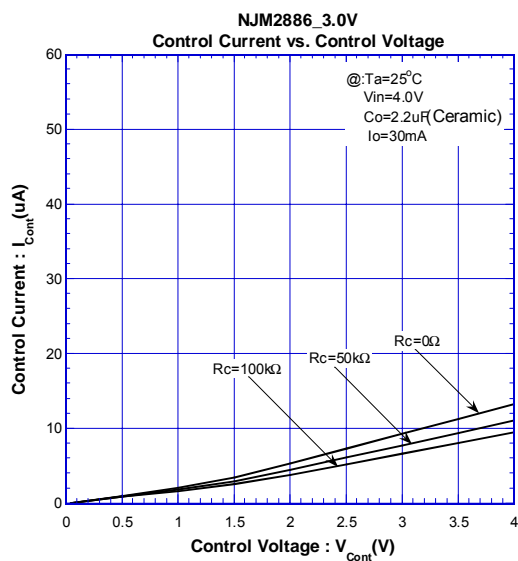
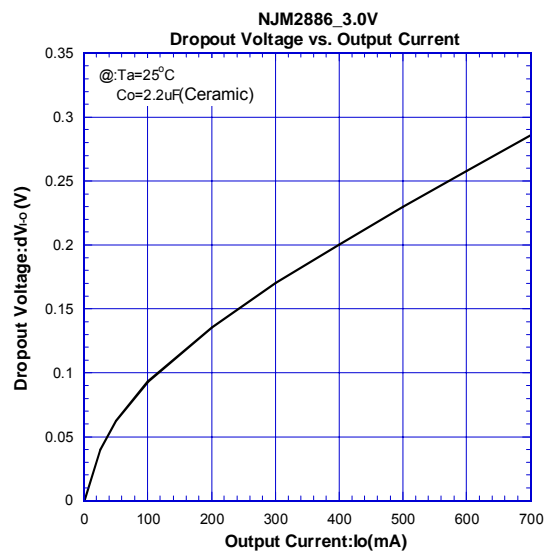
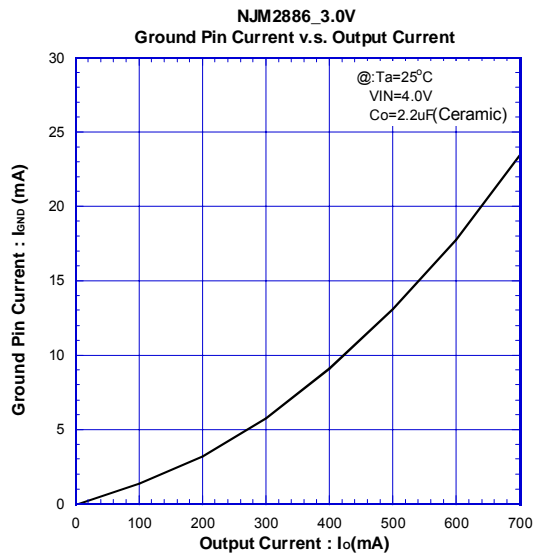
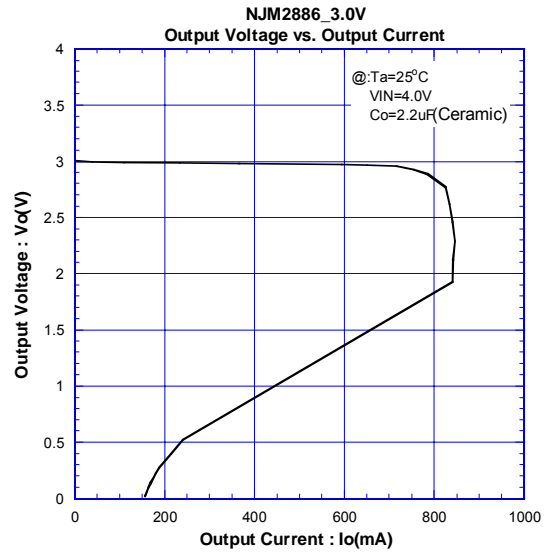
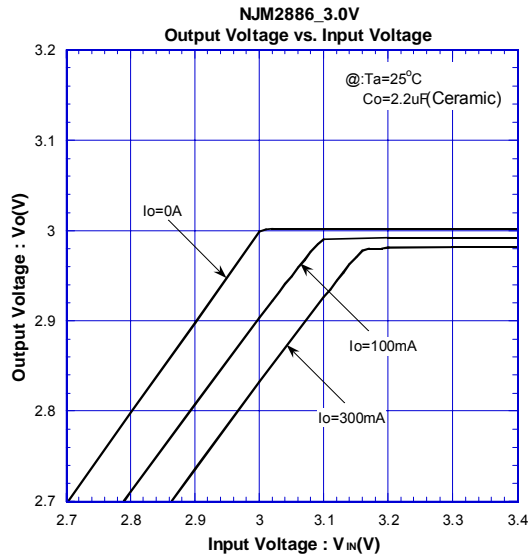
② In use of ON/OFF CONTROL:



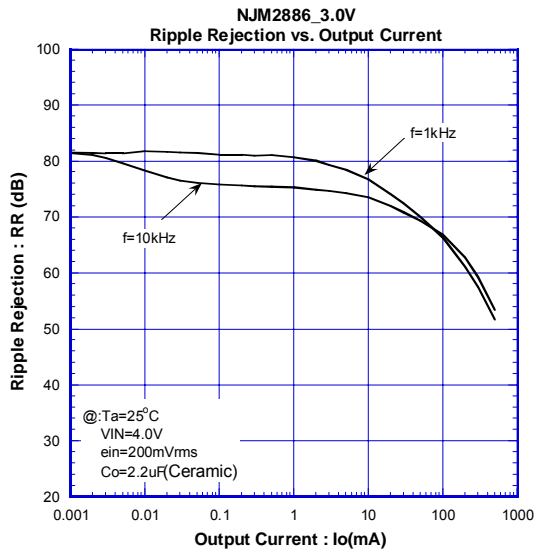
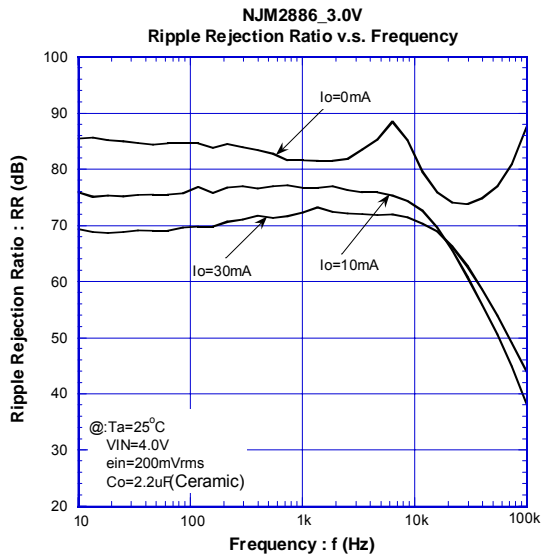
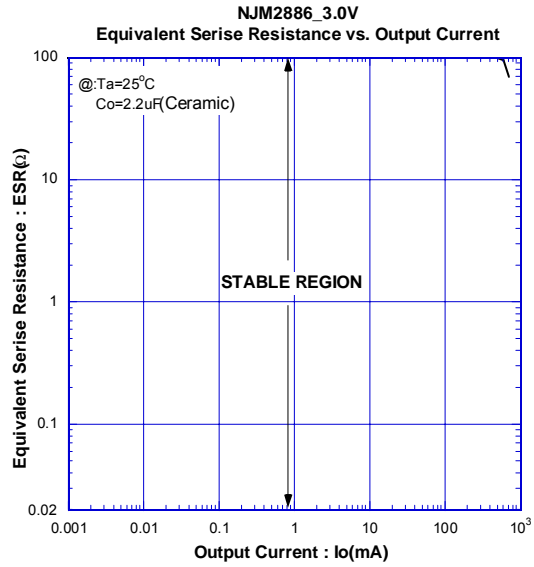
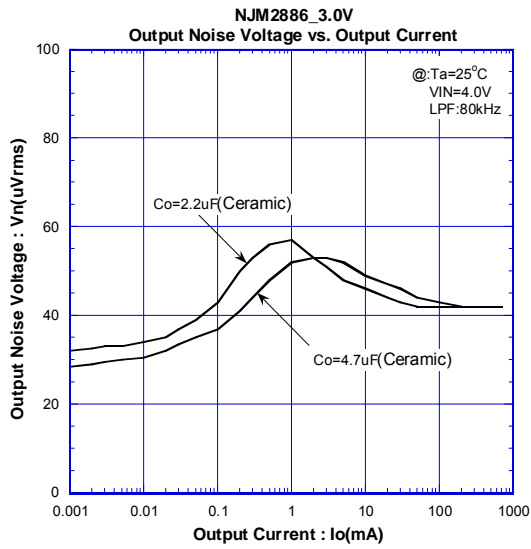
State of control terminal:

- “H” → output is enabled.
- “L” or “open” → output is disabled.

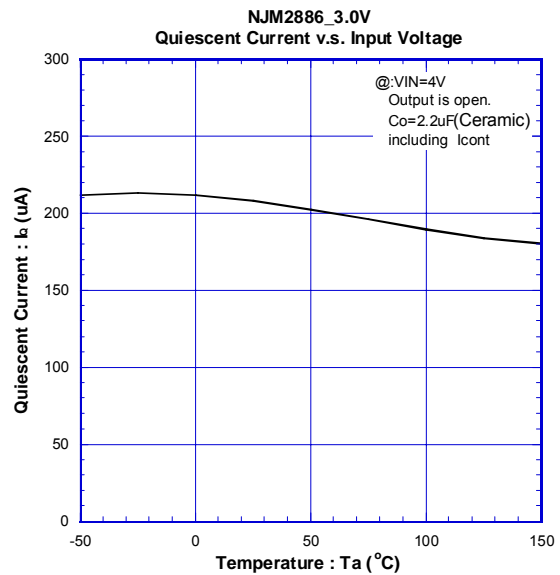
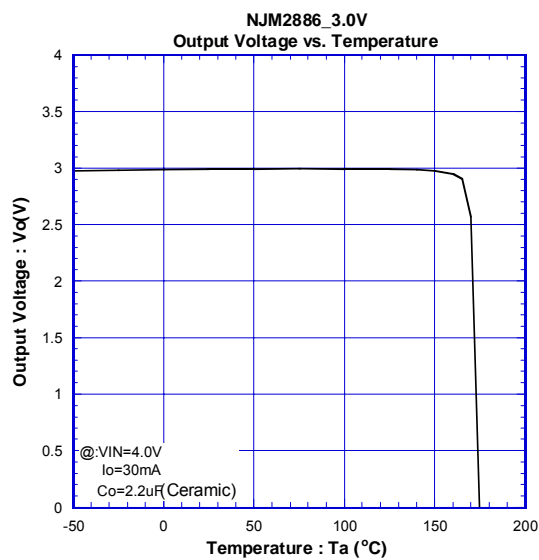
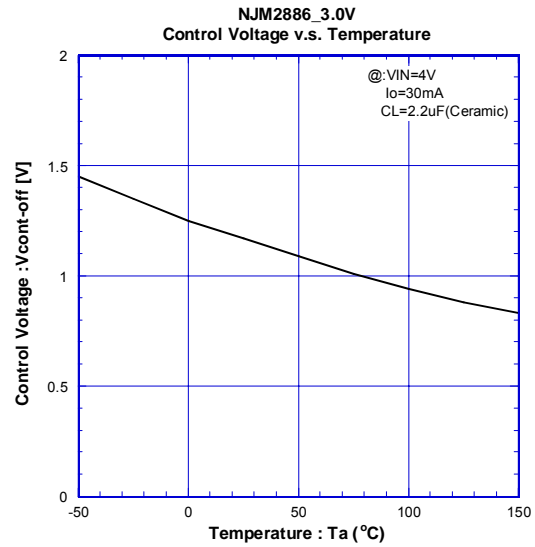
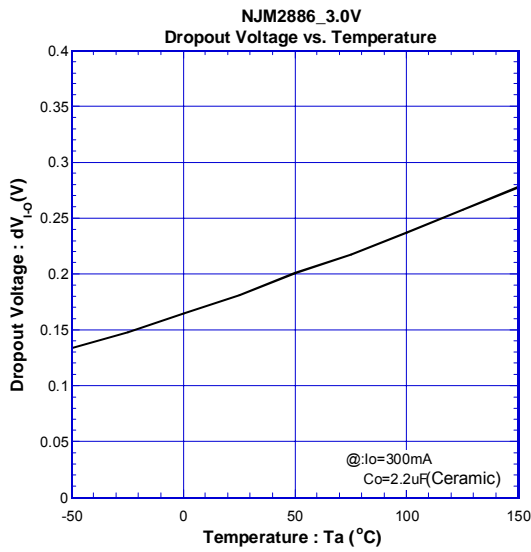
## ELECTRICAL CHARACTERISTICS



## ■ ELECTRICAL CHARACTERISTICS



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[CAUTION]

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