

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

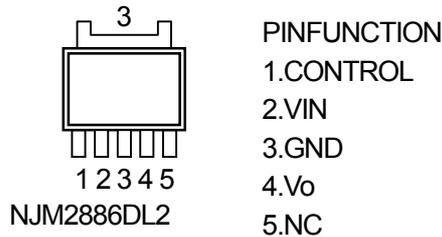


NJM2886DL2

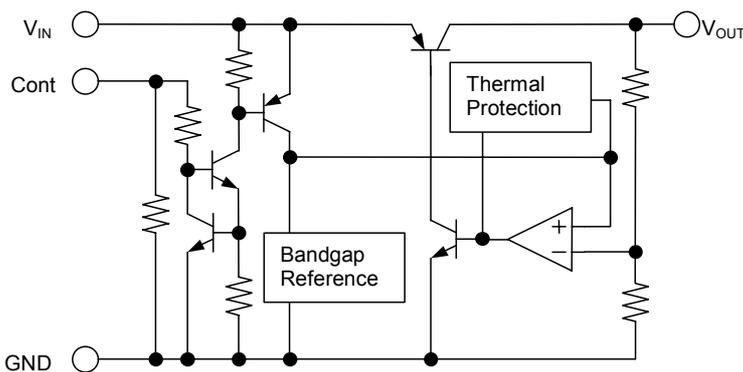
■ FEATURES

- High Ripple Rejection 75dB typ. (f=1kHz)
- Output Noise Voltage $V_{no}=45\mu V_{rms}$
- Output capacitor with 2.2 μF 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. ($I_o=300mA$)
- Internal Short Circuit Current Limit
- Internal Thermal Overload Protection
- Bipolar Technology
- Package Outline TO-252-5

■ PIN CONFIGURATION



■ EQUIVALENT CIRCUIT



■ OUTPUT VOLTAGE RANK LIST

Device Name	V _{out}
NJM2886DL2-18	1.8V
NJM2886DL2-25	2.5V
NJM2886DL2-26	2.6V
NJM2886DL2-03	3.0V
NJM2886DL2-33	3.3V
NJM2886DL2-05	5.0V

NJM2886

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V _{IN}	+14	V
Power Dissipation	P _D	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.

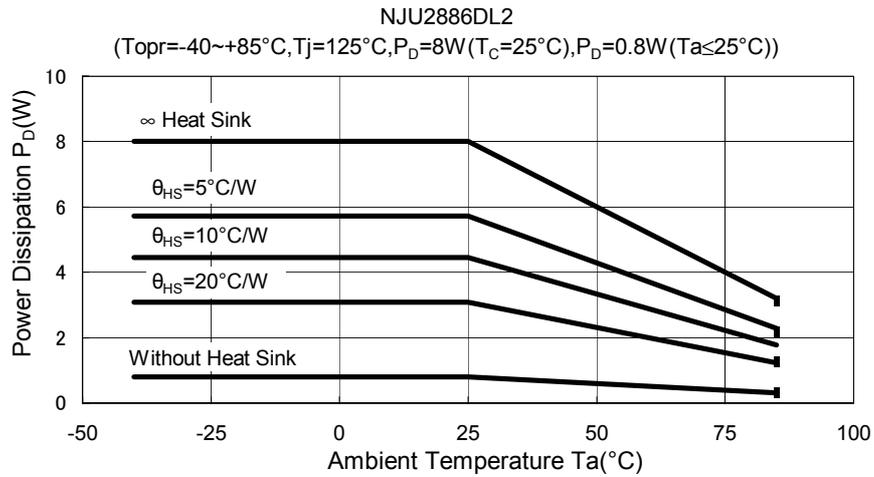
■ ELECTRICAL CHARACTERISTICS

(V_{IN}=V_o+1V, C_{IN}=0.33μF, Co=2.2μF: V_o≥2.7V (Co=4.7μF: V_o≤2.6V), Ta=25°C)

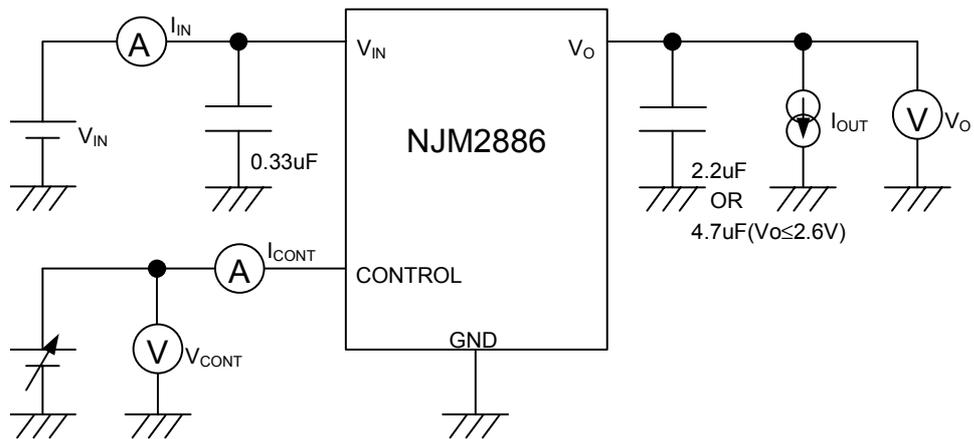
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	V _o	I _o =30mA	-1.0%	-	+1.0%	V
Quiescent Current	I _Q	I _o =0mA	-	200	300	μA
Quiescent Current at Control OFF	I _{Q(OFF)}	V _{CONT} =0V	-	-	100	nA
Output Current	I _o	V _o -0.3V	500	650	-	mA
Line Regulation	ΔV _o /ΔV _{IN}	V _{IN} =V _o +1V ~ V _o +6V, I _o =30mA	-	-	0.10	%/V
Load Regulation	ΔV _o /ΔI _o	I _o =0 ~ 500mA	-	-	0.03	%/mA
Dropout Voltage	ΔV _{L-O}	I _o =300mA	-	0.18	0.28	V
Ripple Rejection	RR	e _{in} =200mVrms, f=1kHz, I _o =10mA V _o =3V Version	-	75	-	dB
Average Temperature Coefficient of Output Voltage	ΔV _o /ΔTa	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
Control Voltage for ON-state	V _{CONT(ON)}		1.6	-	-	V
Control Voltage for OFF-state	V _{CONT(OFF)}		-	-	0.6	V

(note) Please confirm the specification separately because some parameters depend on output voltage.

■ POWER DISSIPATION VS. AMBIENT TEMPERATURE



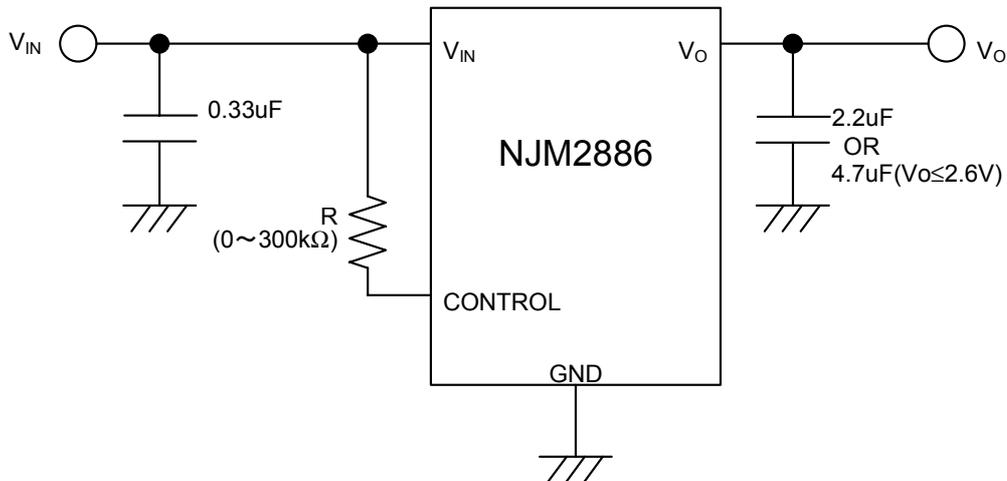
■ TEST CIRCUIT



NJM2886

■ TYPICAL APPLICATION

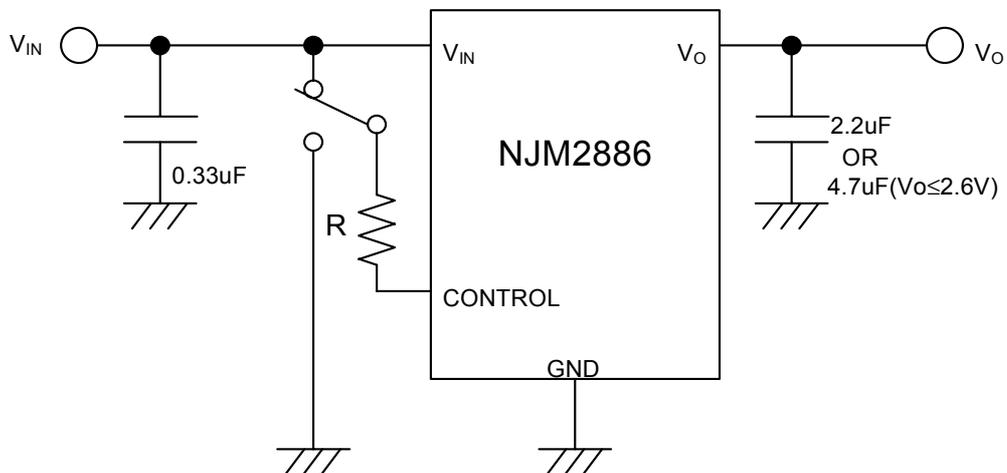
① In the case where ON/OFF Control is not required:



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”.

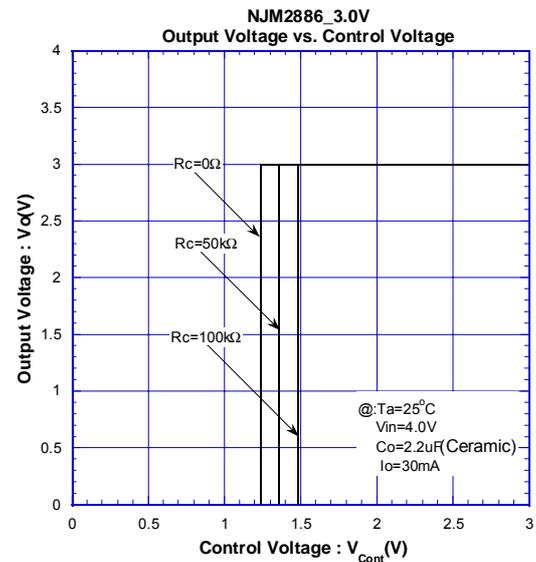
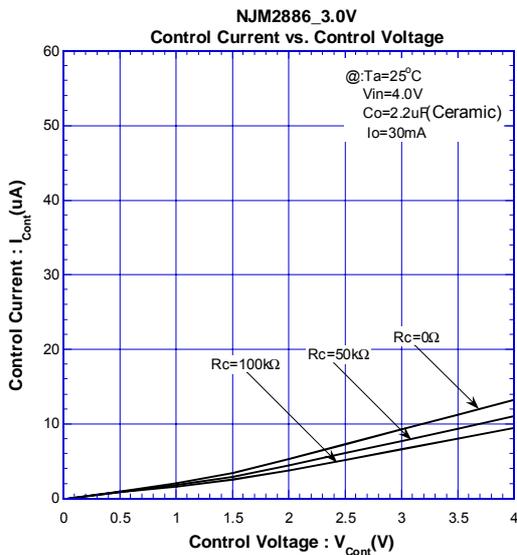
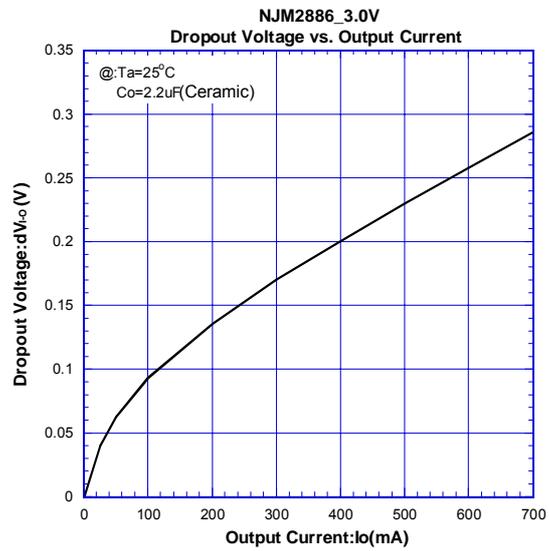
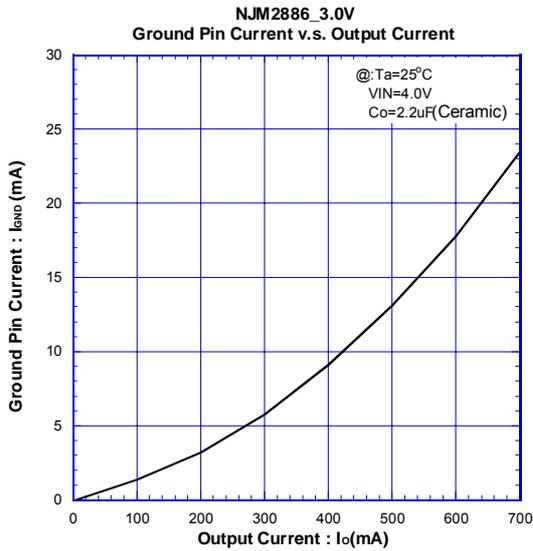
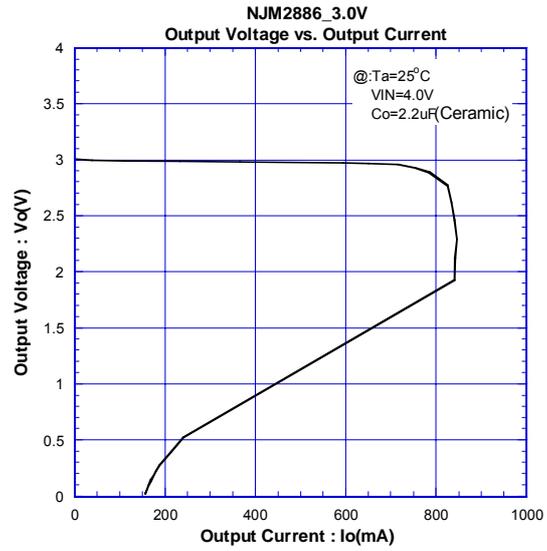
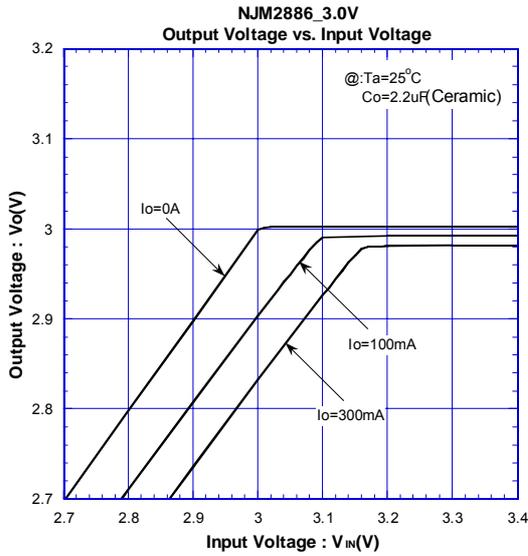
② In use of ON/OFF CONTROL:



State of control terminal:

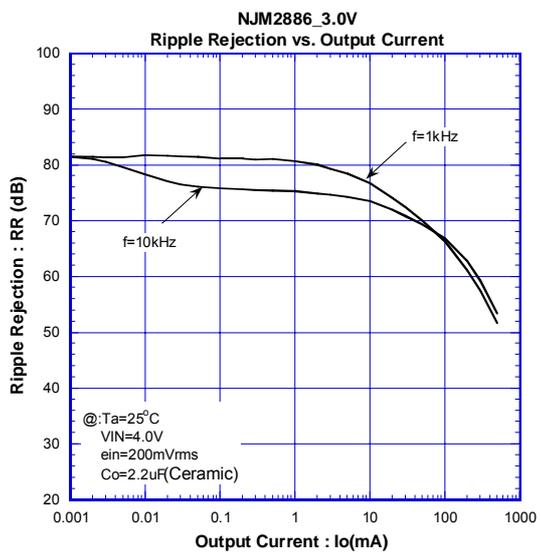
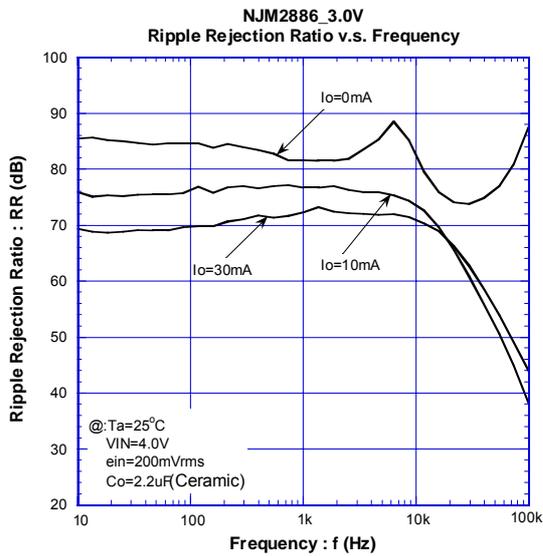
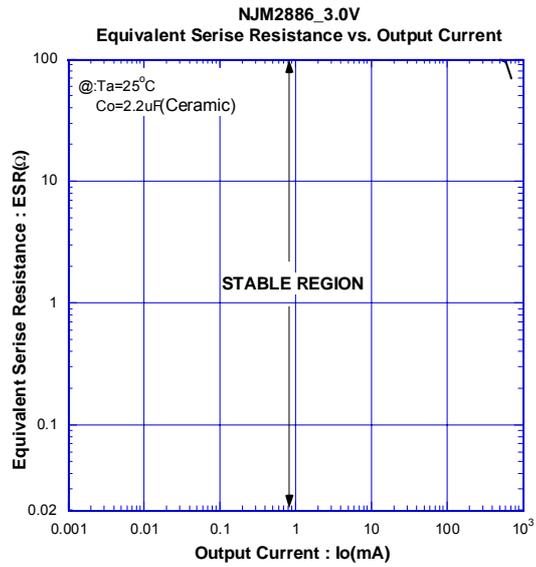
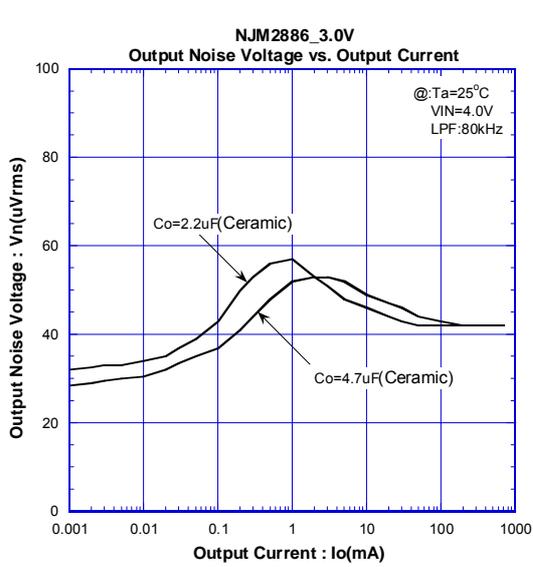
- “H” → output is enabled.
- “L” or “open” → output is disabled.

■ ELECTRICAL CHARACTERISTICS

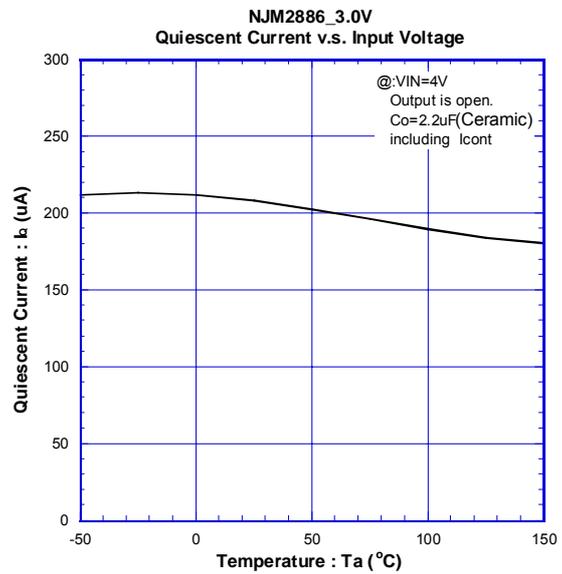
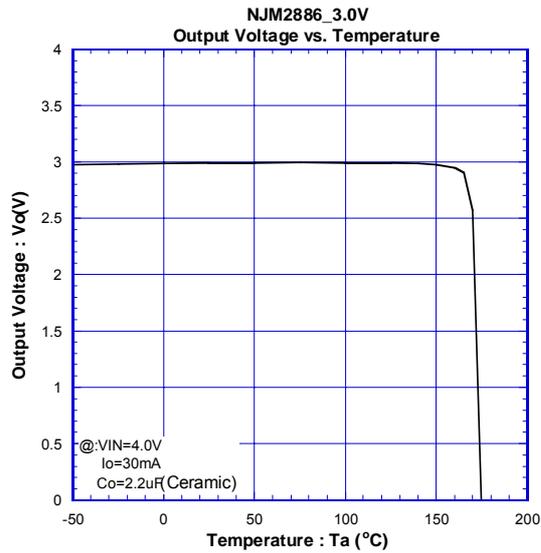
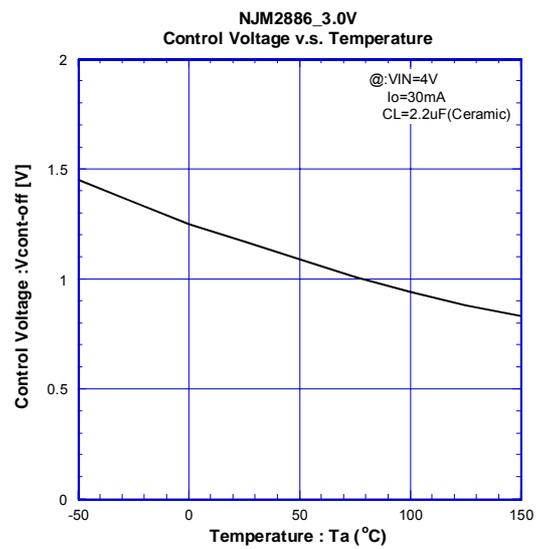
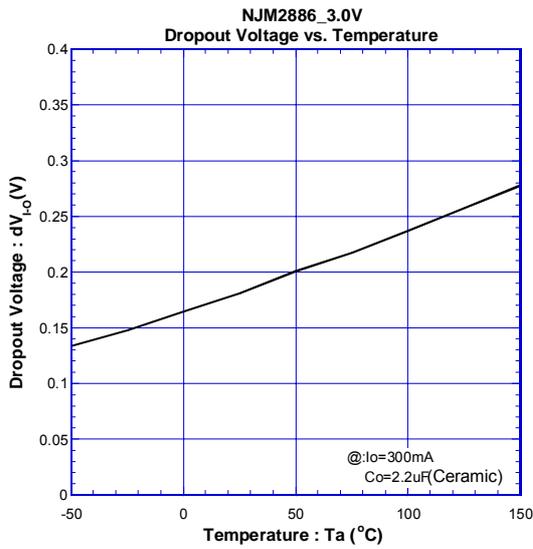


NJM2886

■ ELECTRICAL CHARACTERISTICS



■ ELECTRICAL CHARACTERISTICS



[CAUTION]

The specifications on this databook are only given for information, without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.