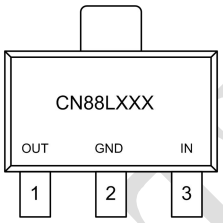
■ Introduction

The CN88LXXX series is a high accuracy, high input voltage low quiescent current, high speed, and low dropout Liner regulator with high ripple rejection. The device is manufactured with BCD process.

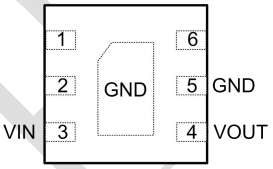
The CN88LXXX offers over temperature protection,over current protection to ensure the device working in well conditions.

■ APPLICATIONS

- Smart Electric Meter
- Switch Power



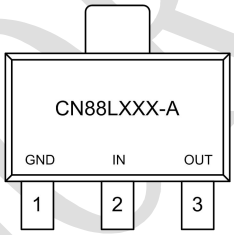
SOT89-3 Top View



DFN2x2–6 Top View

■ Features

- 3-Terminal Regulators
- Supply Voltage: 4.75V~35V
- Output Range: 2.5V, 3.3V, 4.0V, 5.0V, 5.6V,12V
- Output Current Up to150mA
- Output Accuracy: <±2%
- Quiescent Current 6μA@VIN=VO+2V(Typ.)
- Internal Thermal Overload Protection
- Internal Short-Circuit Limiting
- Recommend Capacitor: 1~10uF



SOT89-3 Top View

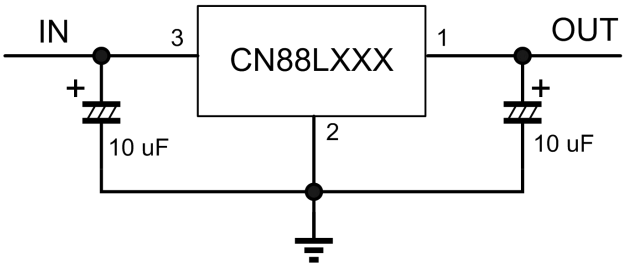
Part NO.	Output Voltage
CN88L025	Vout=2.5V
CN88L033	Vout=3.3V
CN88L040	Vout=4.0V
CN88L050	Vout=5.0V
CN88L056	Vout=5.6V
CN88L120	Vout=12V

■ Order Information

Part NO.	Package Type	Qty	Mark*
CN88LXXXOGR	SOT89-3	1000/Tape	CN88LXXX/YYWW
CN88LXXXOGR-A	SOT89-3	1000/Tape	CN88LXXXA/YYWW
CN88L025DSR	DFN2x2-6	4000/Tape	CN8825/YYWW

*note: YY/Y = Year; WW/W = Week; CN88LXXX/CN8825 = Product Name; XXX = Voltage

■ Typical Application



■ Pin Description

CN88LXXX Series

NO.	Name	Function
1	OUT	Output
2	GND	Ground
3	IN	Input

CN88LXXX-A Series

NO.	Name	Function
1	GND	Ground
2	IN	Input
3	OUT	Output

■ Absolute Maximum Ratings

Symbol	Parameter	Rating		Unit
V_{IN} Range	Input Voltage Range	-0.3 ~ 35		V
V_{OUT} Range	Output Voltage Range	-0.3 ~ 12		V
T_J	Junction temperature range	-45~150		℃
T_{STG}	Storage temperature range	-65~160		℃
ESD (HBM)	Human body model	4000		V
R_{thJA}	Junction to Ambient	SOT89-3	90(1)	℃/W
		DFN2x2-6	140(1)	℃/W

Note (1): There is 6 cm^2 copper foil on PCB.

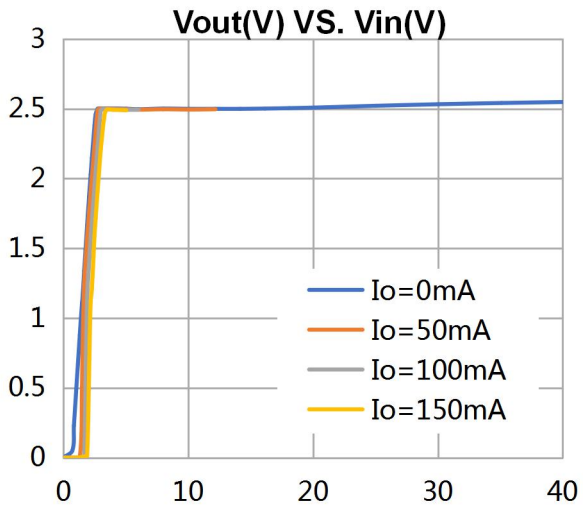
■ Electrical Characteristics

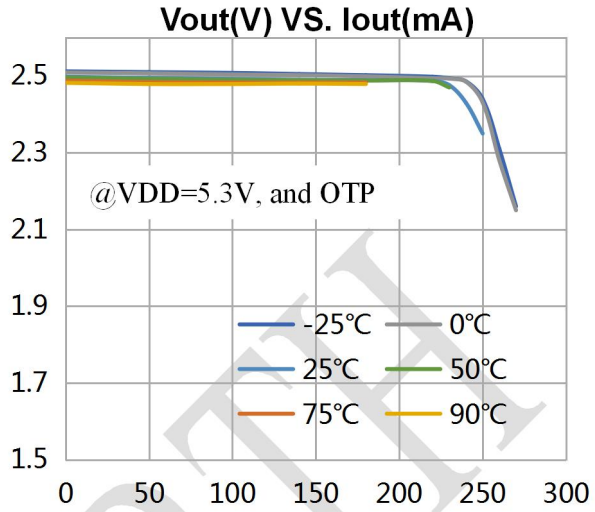
Test Condition：T_A=25℃, V_{IN}=12V, I_O=10mA, C_{IN}=10μF, C_{OUT}=10μF，unless otherwise specified.

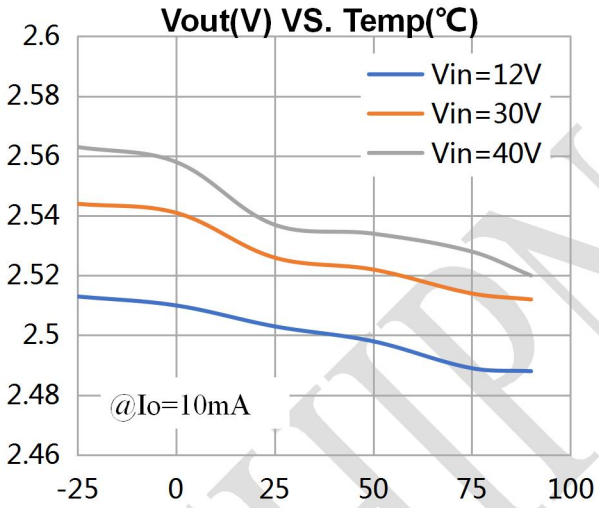
Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
V_I	Input Range		4.5	-	35	V
V_O	Output Range	CN88L025	2.45	2.5	2.55	V
		CN88L033	3.234	3.3	3.366	V
		CN88L040	3.92	4	4.08	V
		CN88L050	4.9	5	5.1	V
		CN88L056	5.48	5.6	5.71	V
		CN88L120 Vin=14V	11.76	12	12.24	V
REG_{LINE}	Line Regulation	V_I=5.5~24V, Vout=5V		3		mV/V
REG_{LOAD}	Load Regulation	I_o=1mA to 150mA		70		uV/mA
I_Q	Static Current	Io=0mA		6	12	uA
$\Delta V_O/\Delta T$	Output Temperature Coefficient		-	300	-	uV/℃
V_D	Dropout voltage	I_o=100mA		500	-	mV
PSRR	Power Supply Rejection Ratio	V_I=8-16V，f=120Hz I_O=50mA，T_J=25℃		45		dB
OTP	Over Temperature Protection			150		℃
OCP	Over Current Protection	V_{OUT}= 0.9*V_{OUT}≤2.5V		270		mA
		V_{OUT}= 0.9*V_{OUT}>2.5V		330		

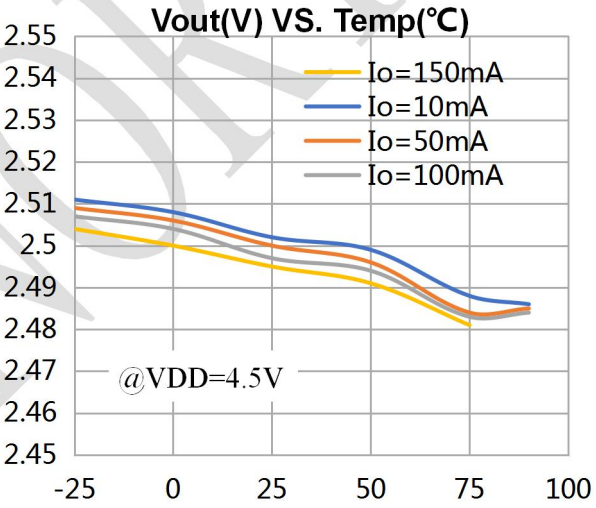
■ Typical Characteristics (CN88L025)

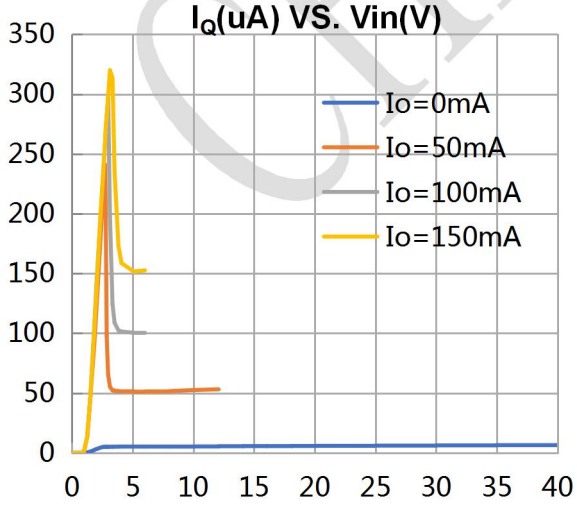
Test condition: TA=25° C, VIN=12V，CL=10uF, unless otherwise noted.

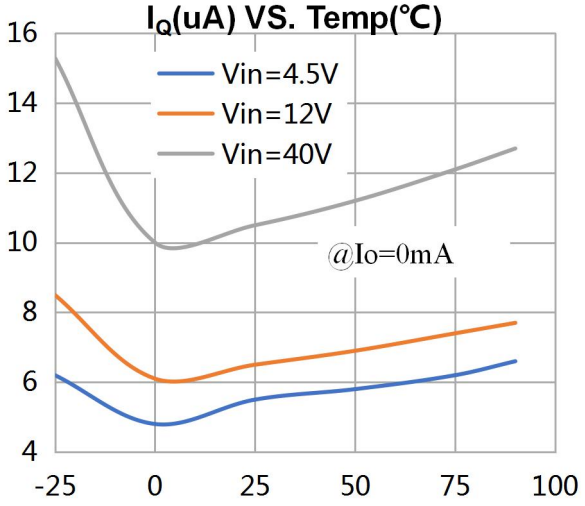




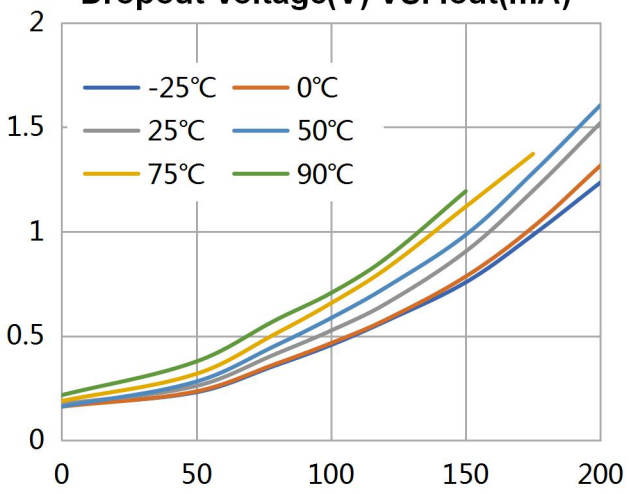




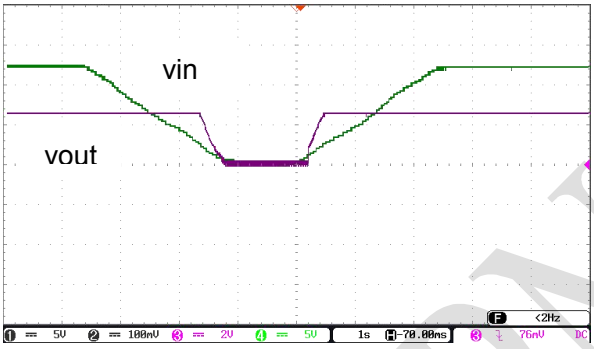




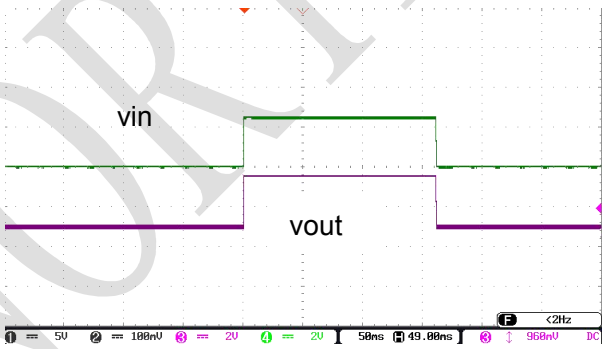
Dropout Voltage(V) VS. Iout(mA)



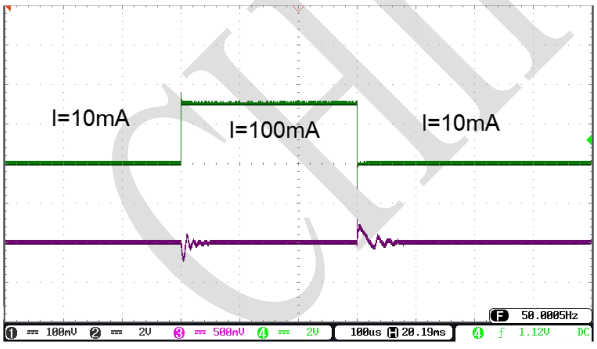
Vin Response(Vout VS. Vin)



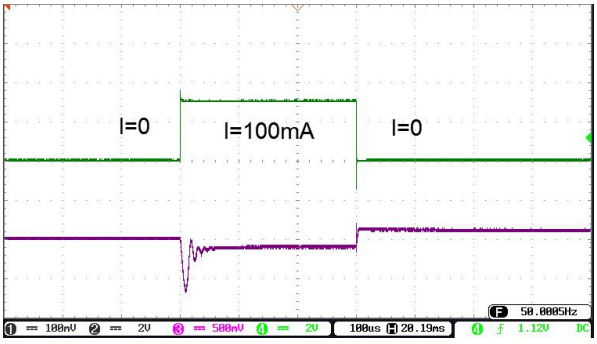
Vin Response(Vout VS. Vin)



Load Response(VoutVS.Iload)

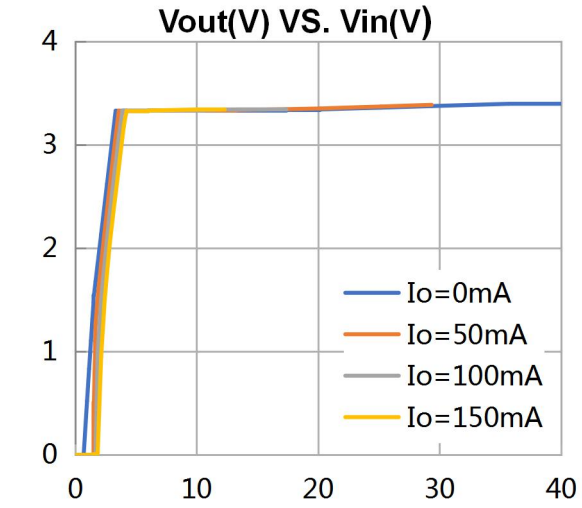


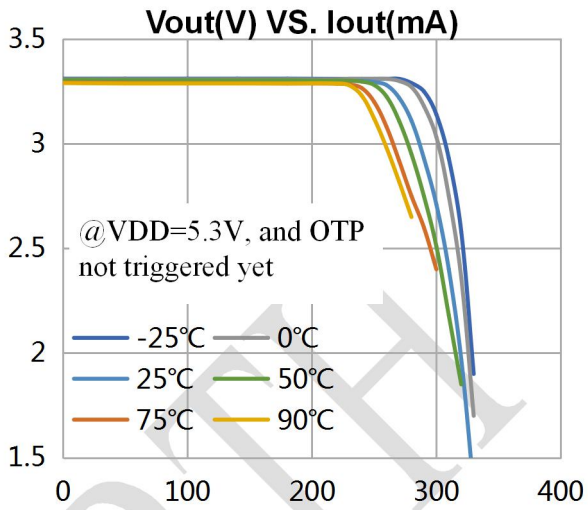
Load Response(VoutVS.Iload)

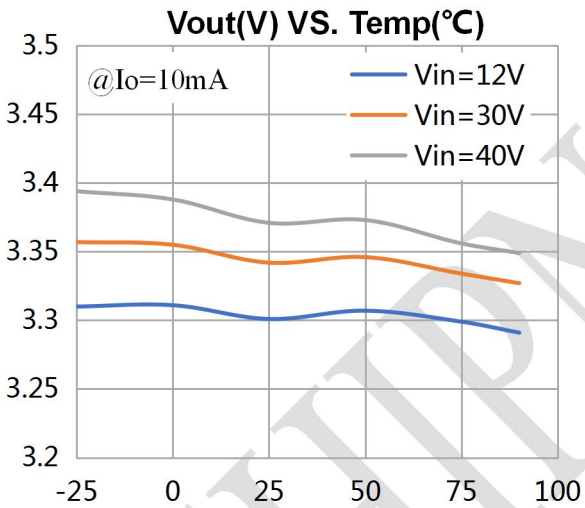


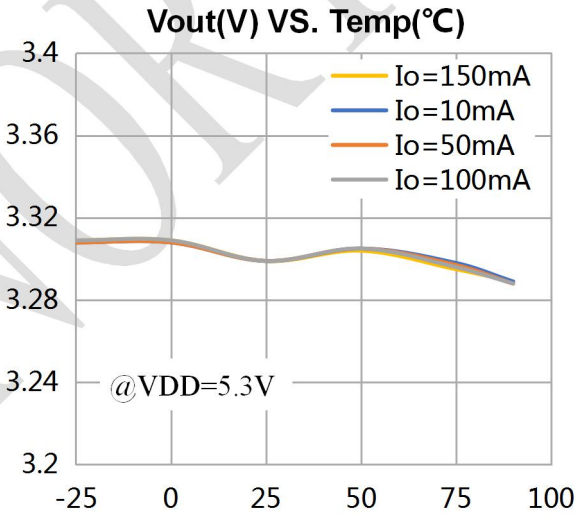
■ Typical Characteristics (CN88L033)

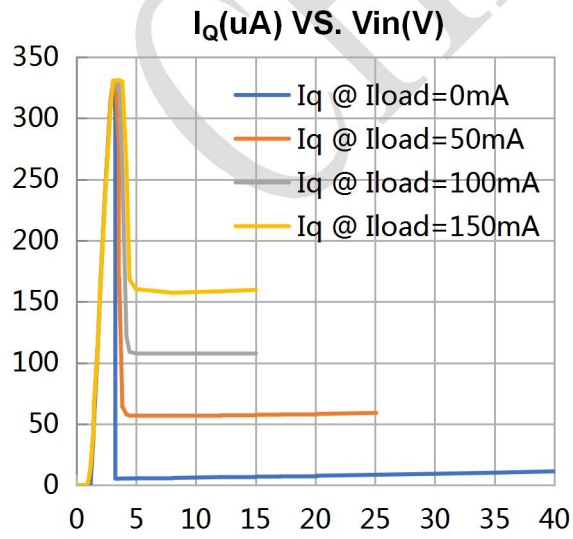
Test condition: TA=25° C, VIN=12V，CL=10uF, unless otherwise noted.

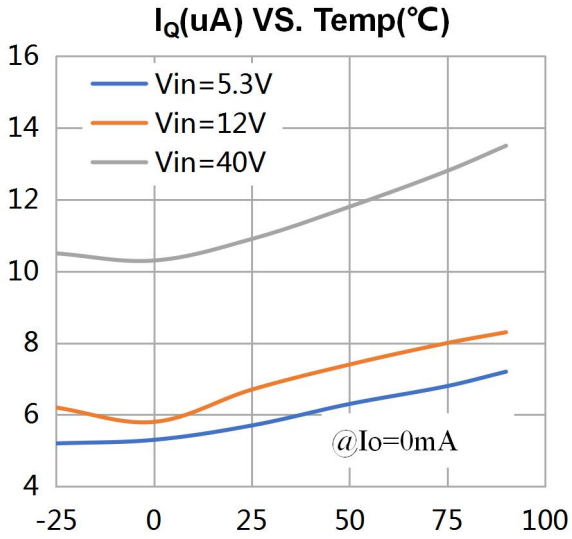


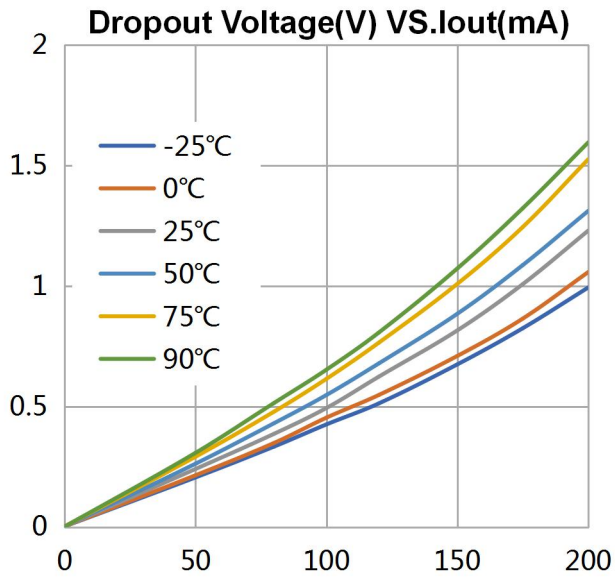




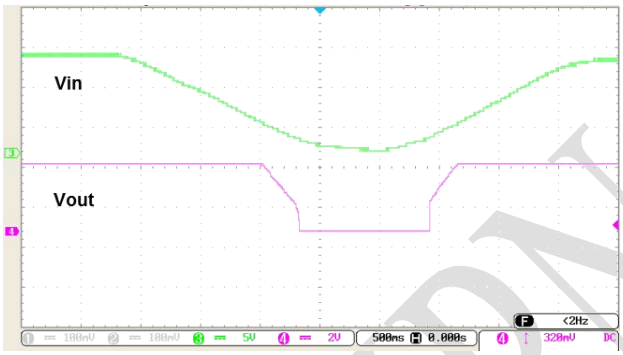




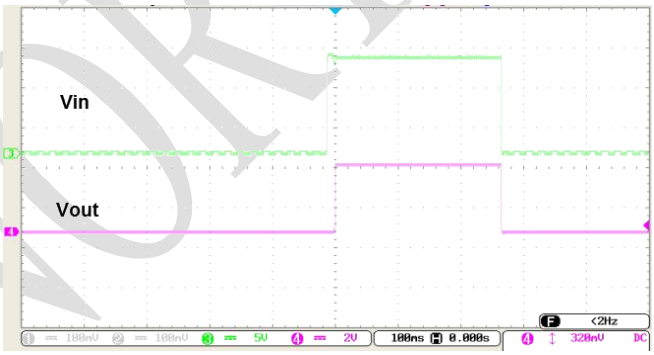




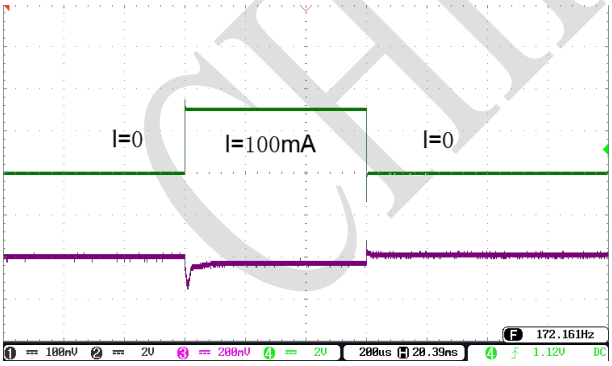
Vin Response(Vout VS. Vin)



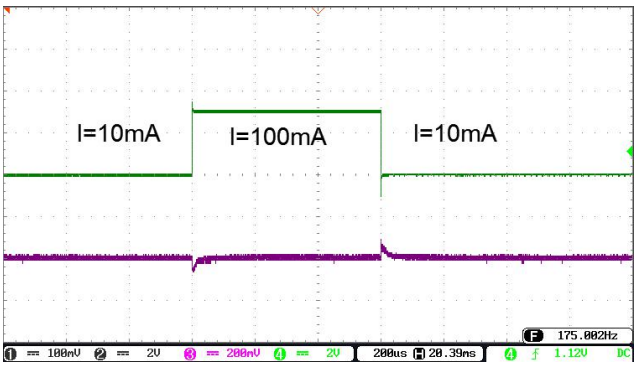
Vin Response(Vout VS. Vin)



Load Response(Vout VS. Iload)

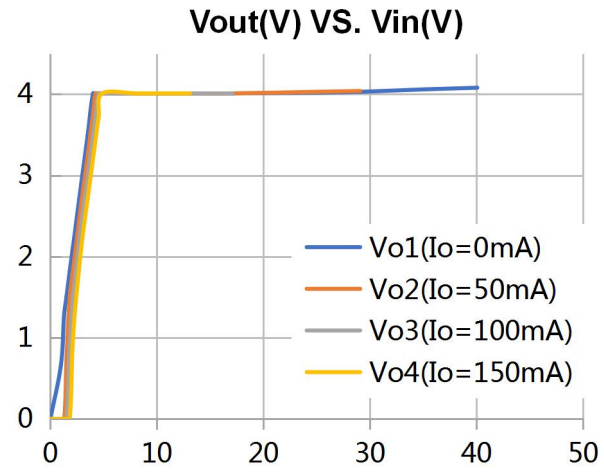


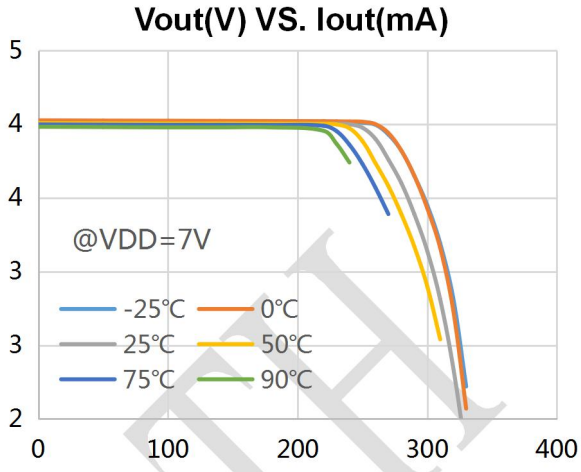
Load Response(Vout VS. Iload)

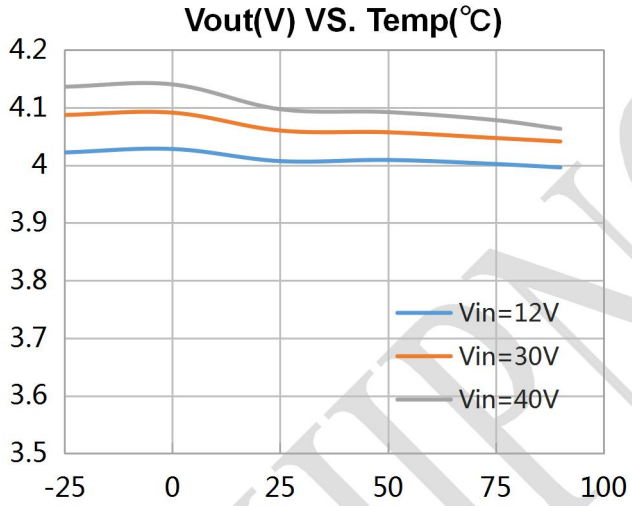


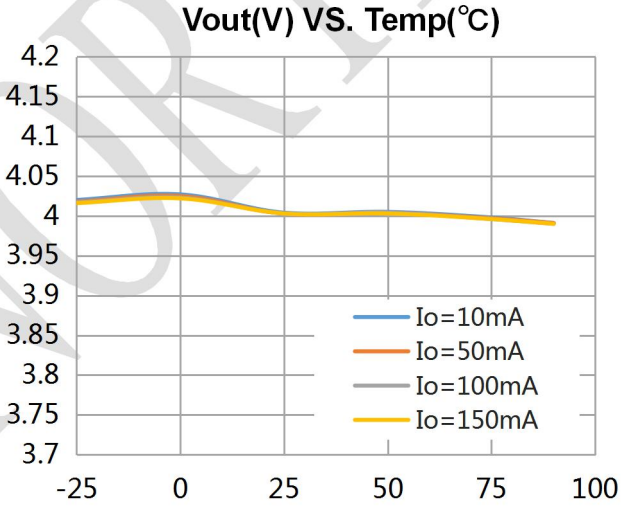
■ Typical Characteristics (CN88L040)

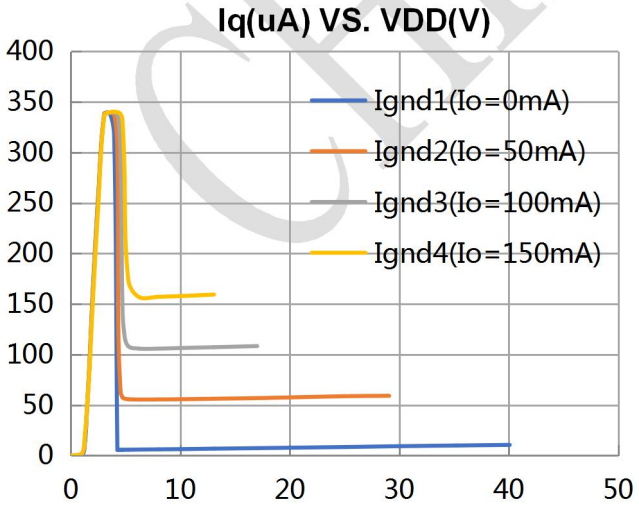
Test condition: TA=25° C, VIN=12V，CL=10uF, unless otherwise noted.

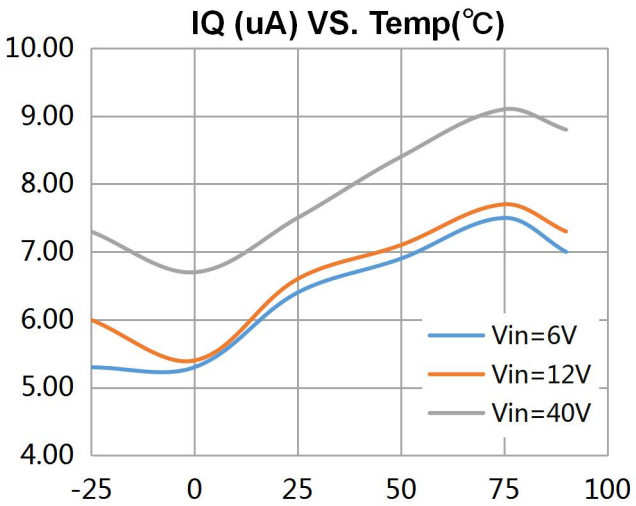




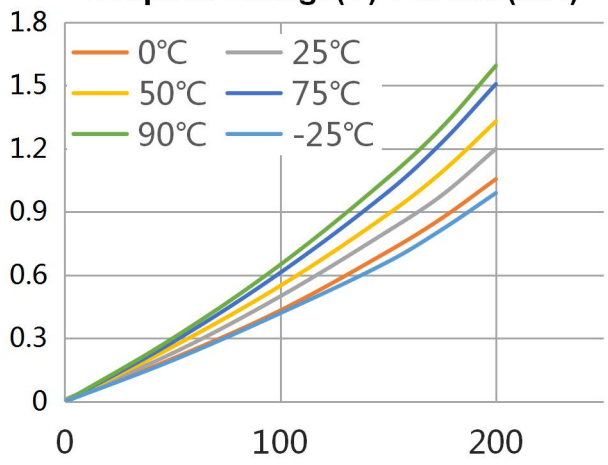




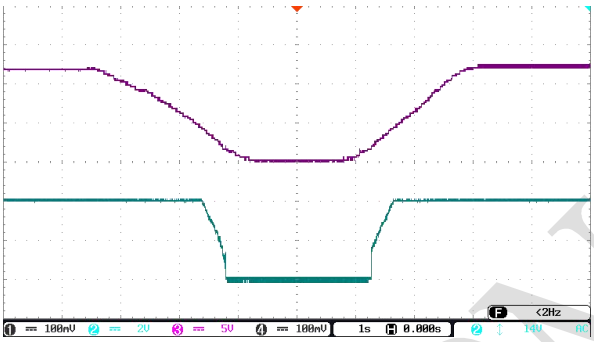




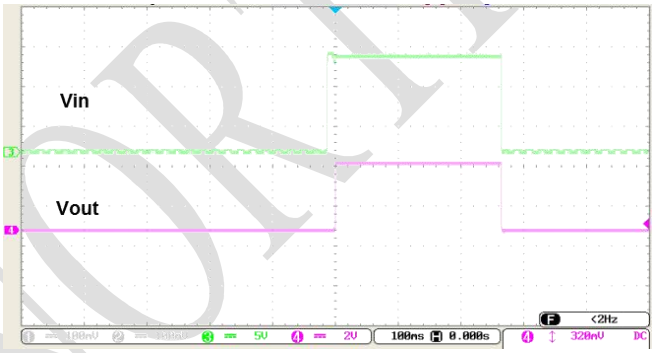
Dropout Voltage(V) VS. Iout(mA)



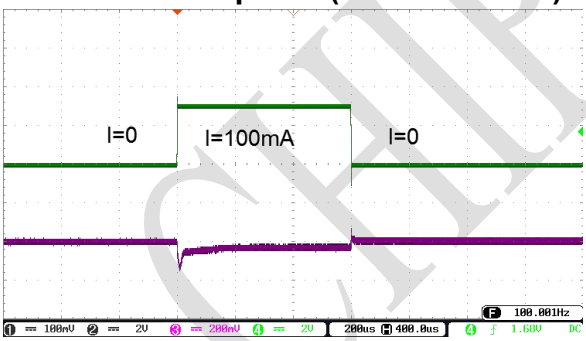
Vin Response(Vout VS. Vin)



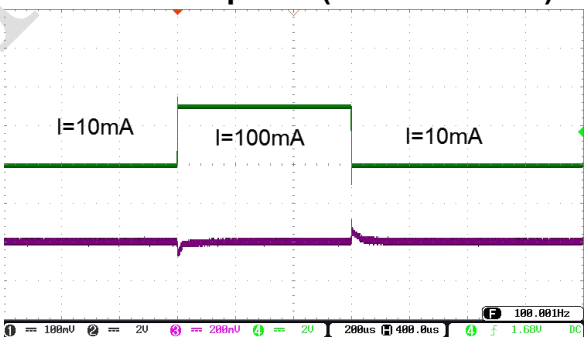
Vin Response(Vout VS. Vin)



Load Response(Vout VS. Iload)

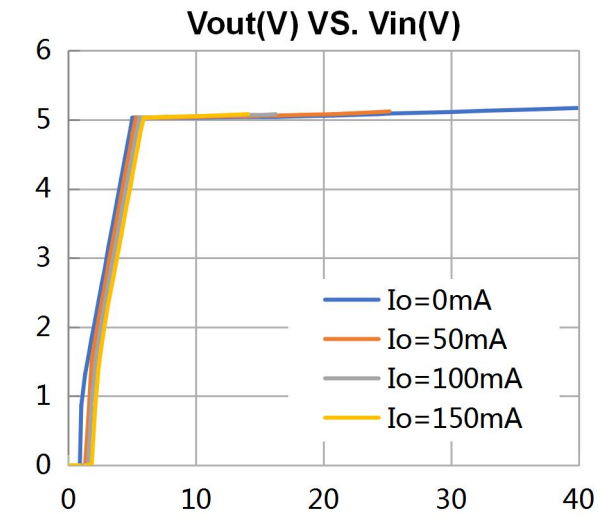


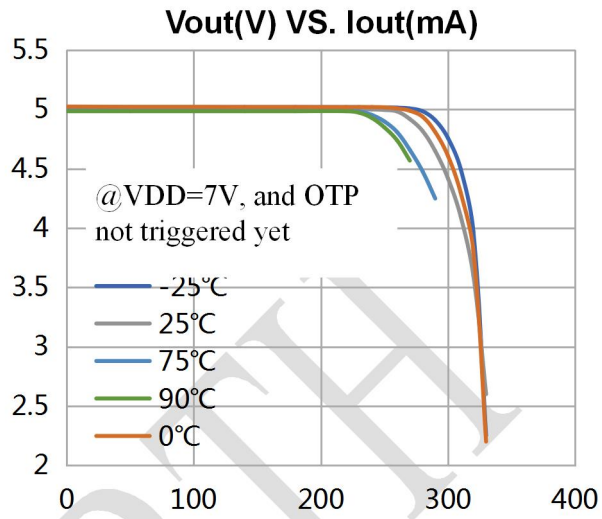
Load Response(Vout VS. Iload)

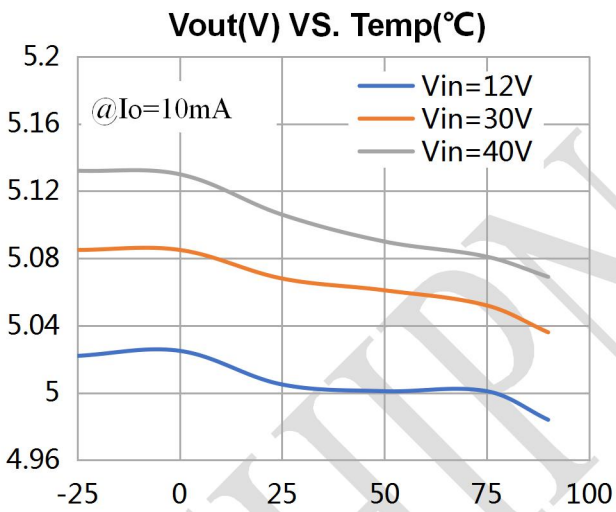


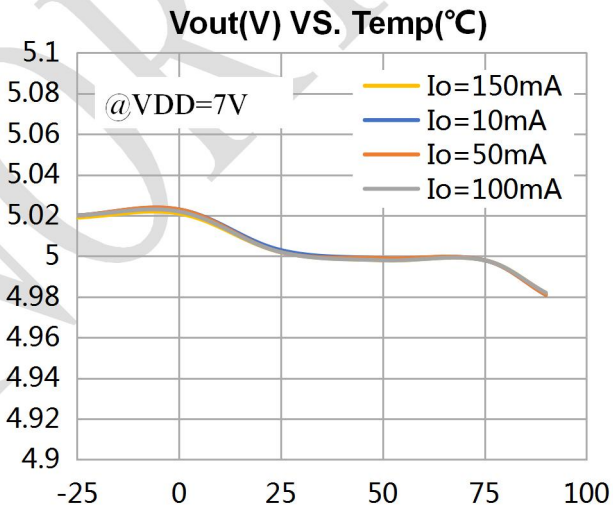
■ Typical Characteristics (CN88L050)

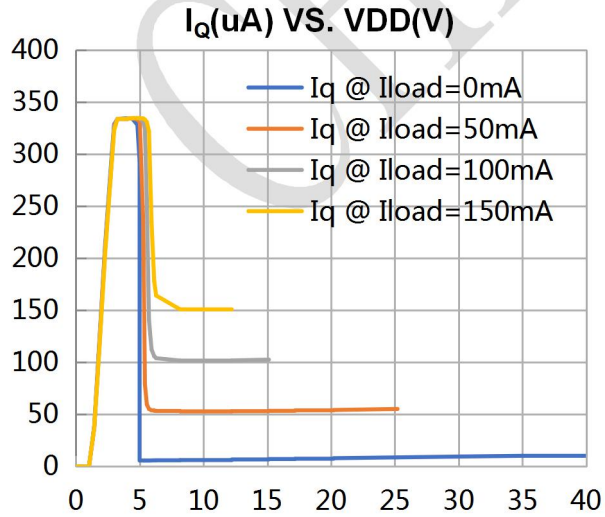
Test condition: TA=25° C, Vin=12V，CL=10uF, unless otherwise noted.

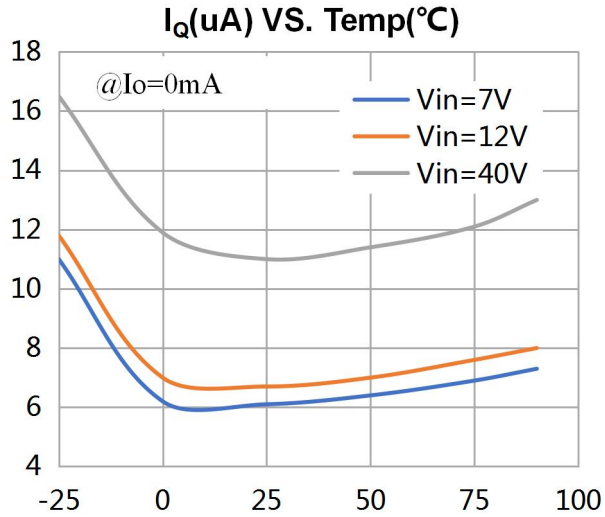




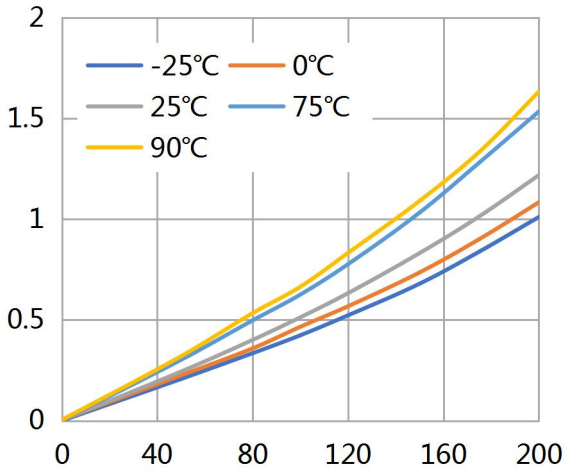




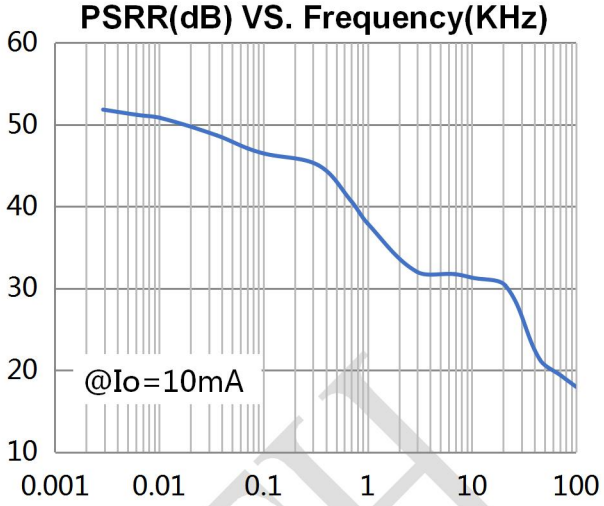




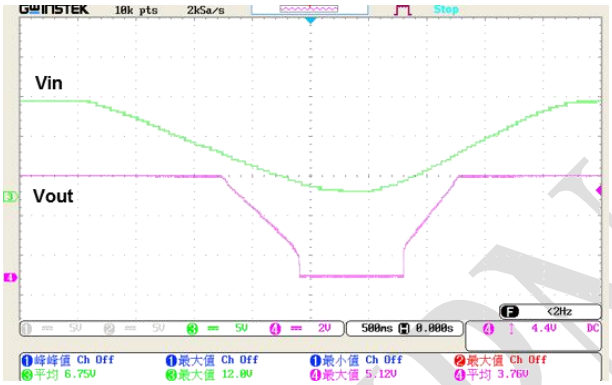
Dropout Voltage(V) VS. Iout(mA)



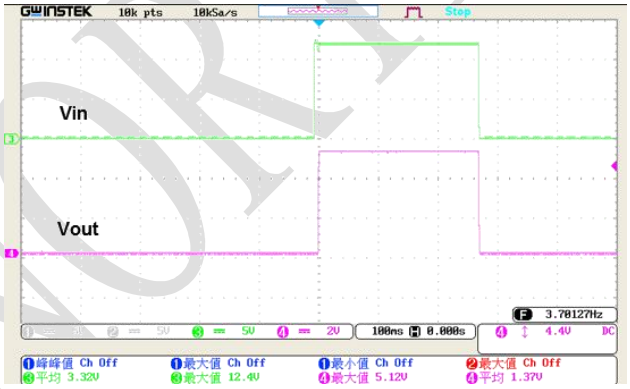
PSRR(dB) VS. Frequency(KHz)



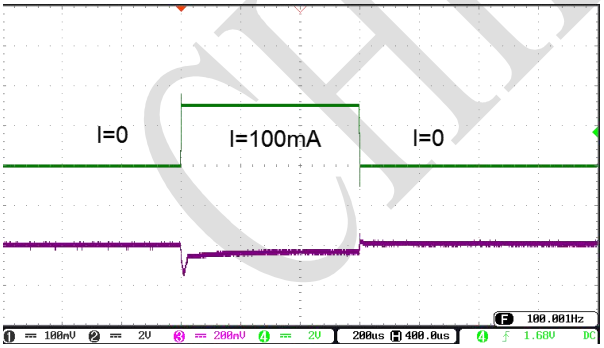
Vin Response(Vout VS. Vin)



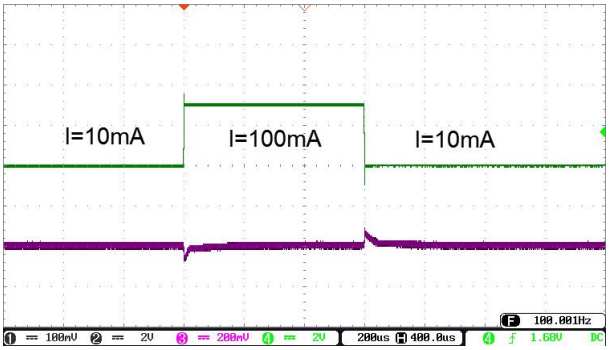
Vin Response(Vout VS. Vin)



Load Response(Vout VS. Iload)

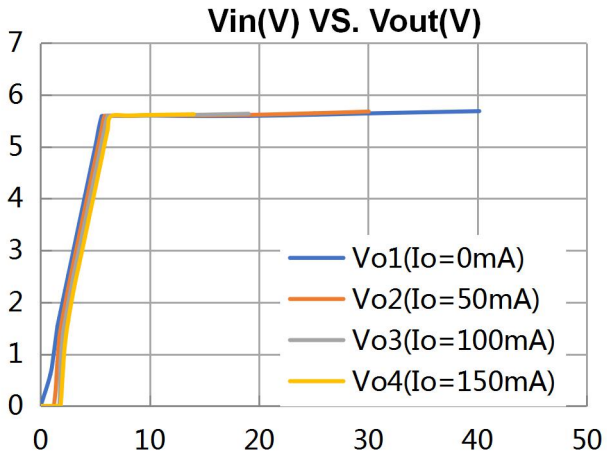


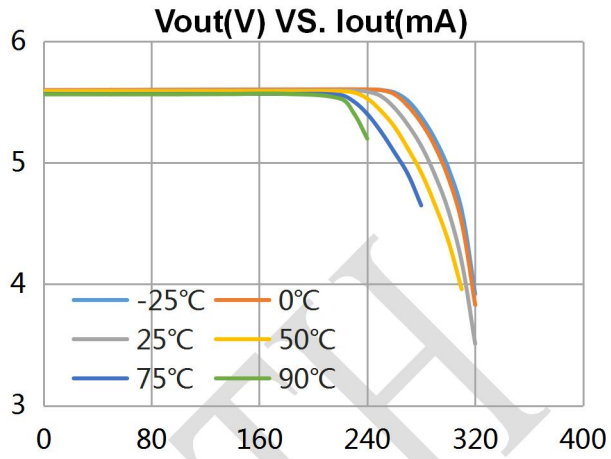
Load Response(Vout VS. Iload)

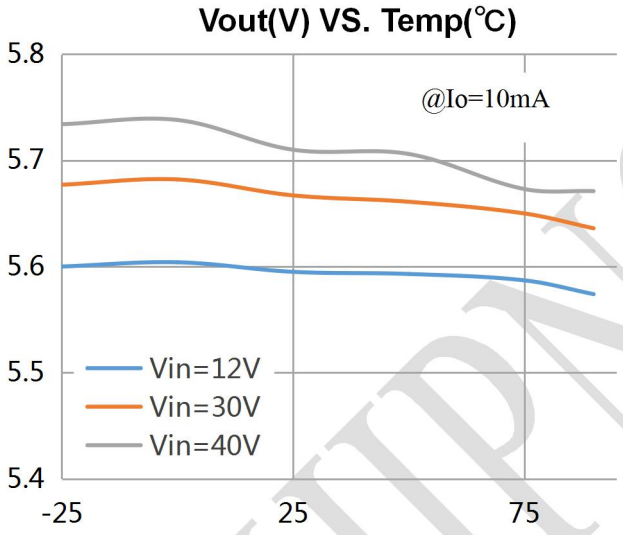


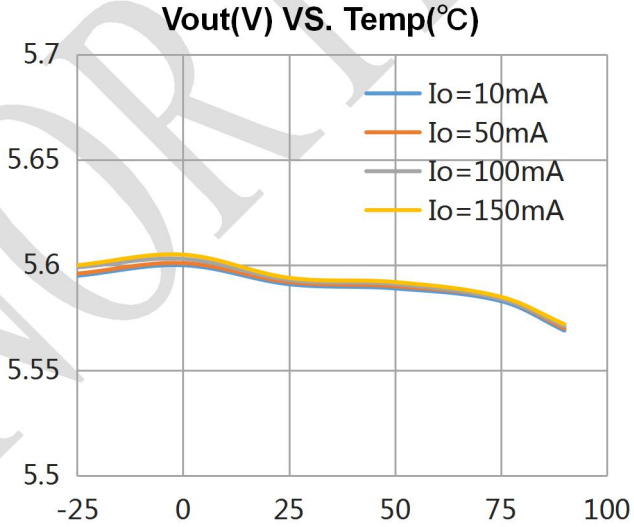
■ Typical Characteristics (CN88L056)

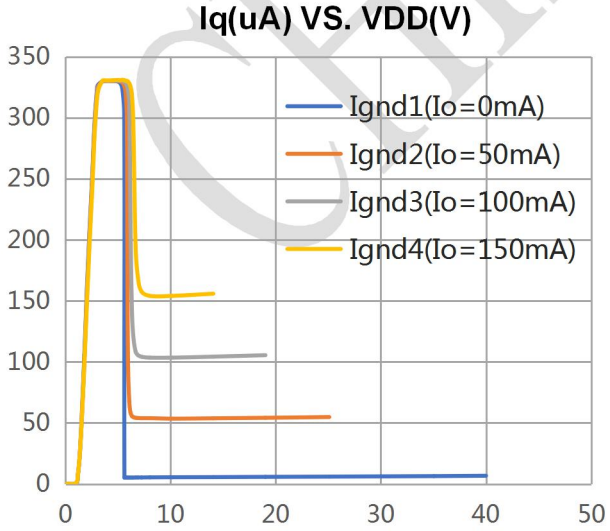
Test condition: TA=25° C, VIN=12V，CL=10uF, unless otherwise noted.

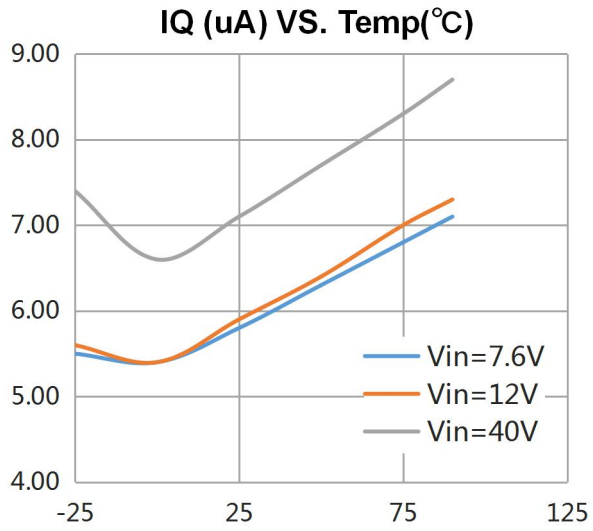


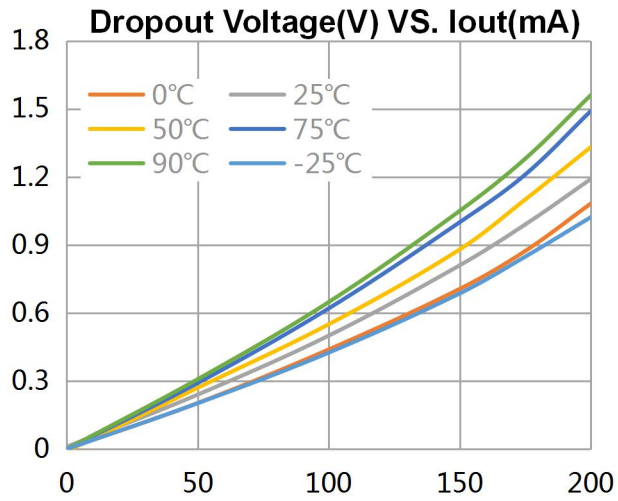




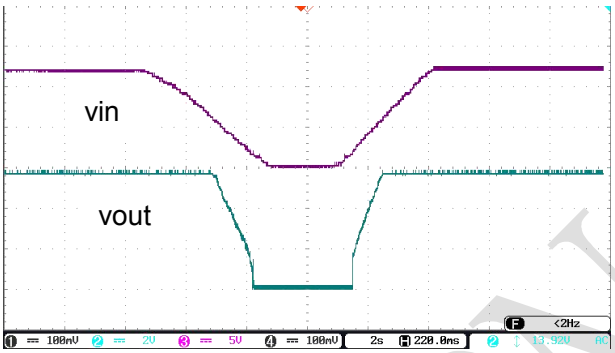




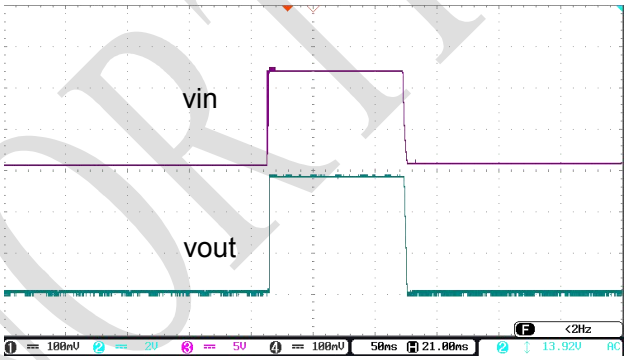




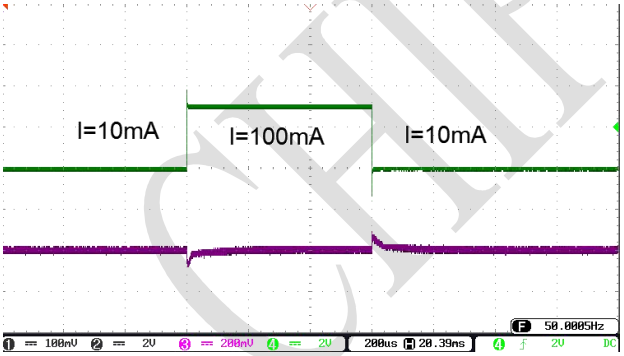
Vin Response(Vout VS. Vin)



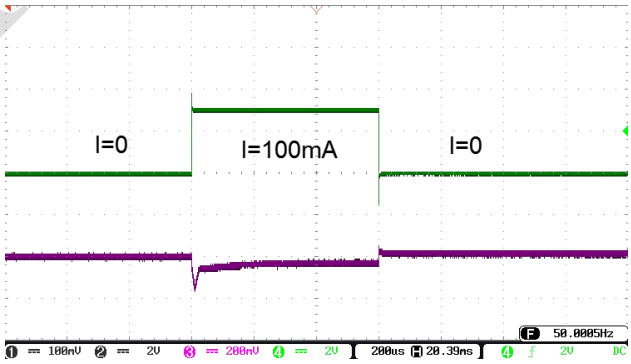
Vin Response(Vout VS. Vin)



Load Response(Vout VS. Iload)

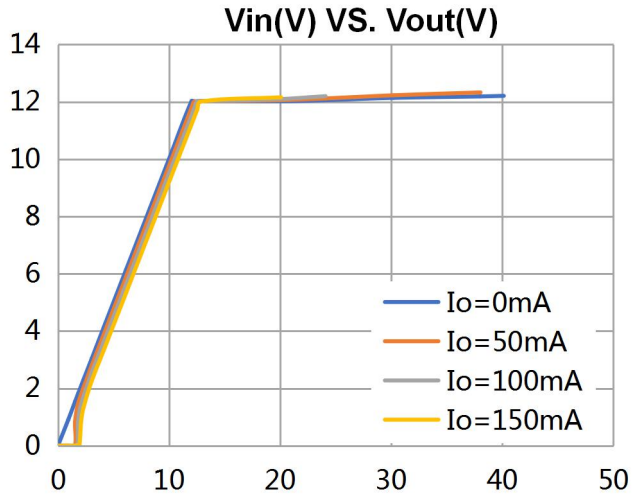


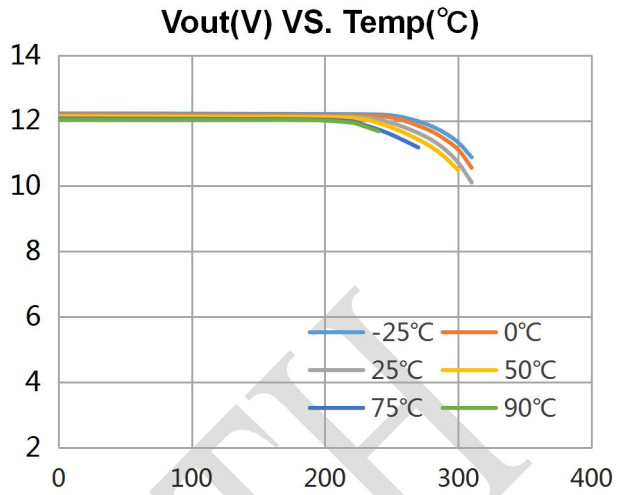
Load Response(Vout VS. Iload)

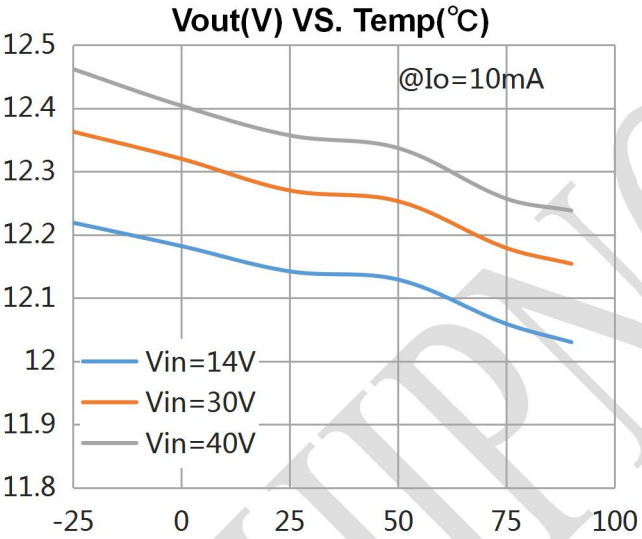


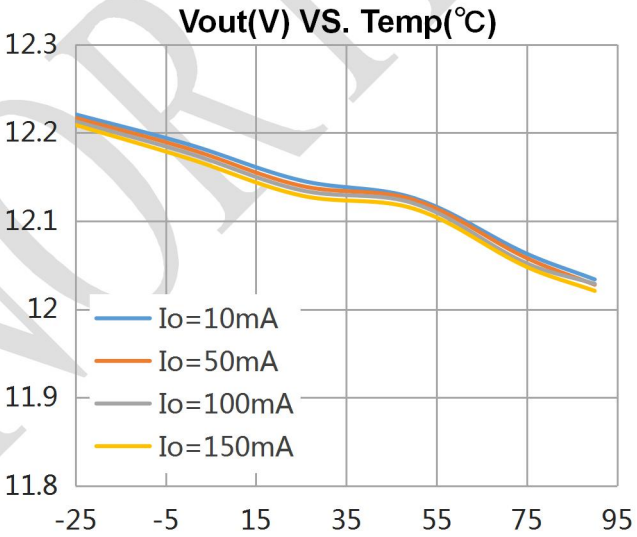
■ Typical Characteristics (CN88L120)

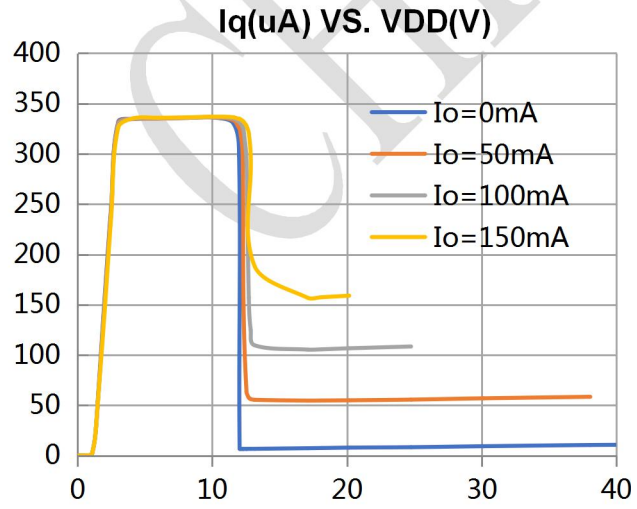
Test condition: TA=25° C, VIN=14V，CL=10uF, unless otherwise noted.

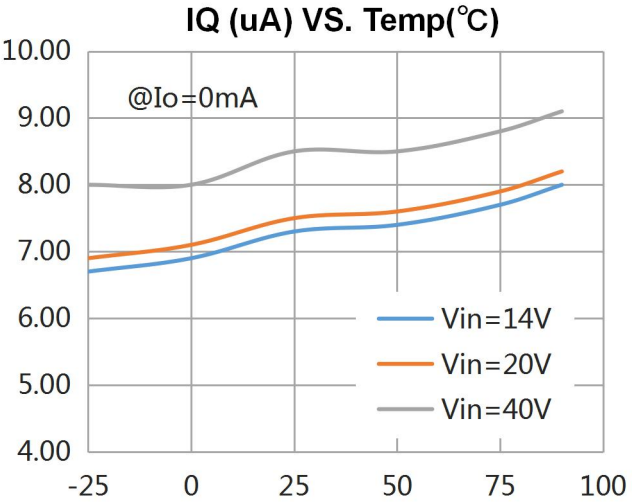




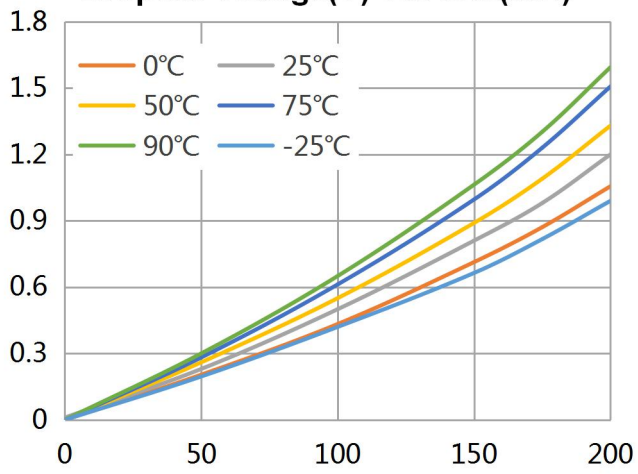




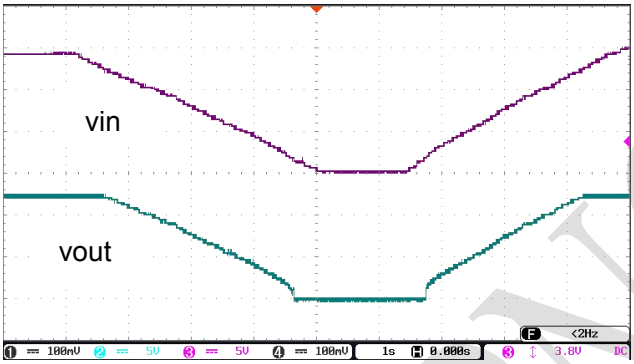




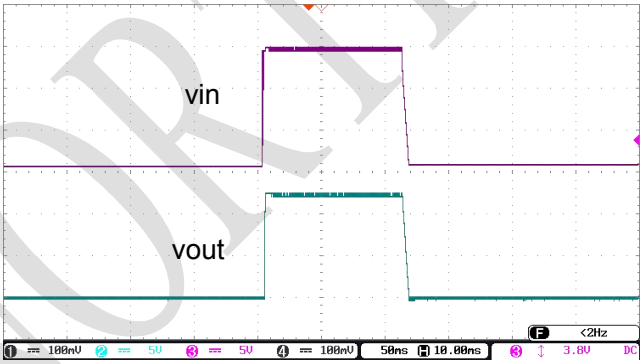
Dropout Voltage(V) VS. Iout(mA)



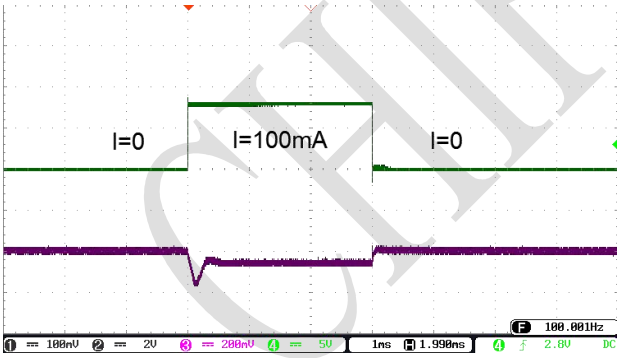
Vin Response(Vout VS. Vin)



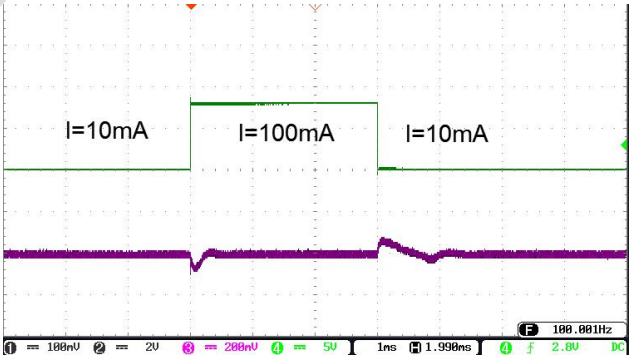
Vin Response(Vout VS. Vin)



Load Response(Vout VS. Iload)

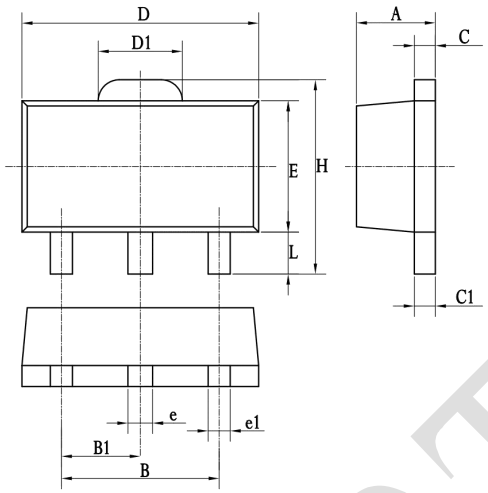


Load Response(Vout VS. Iload)



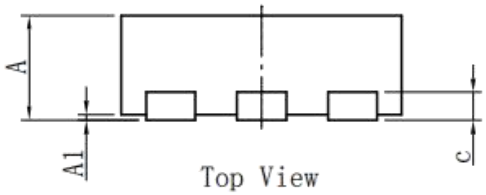
■ Package Information

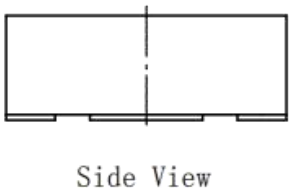
SOT89-3

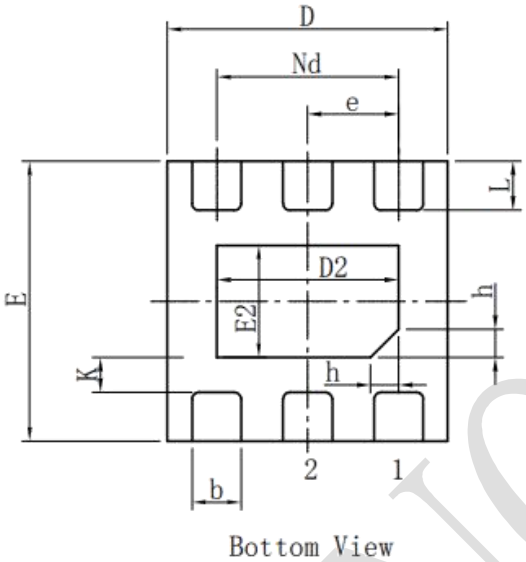


Symbol	mm			inch		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.4	1.5	1.6	-	-	-
B	2.8	3	3.2	-	-	-
B1	1.4	1.5	1.6	-	-	-
C	0.3	0.4	0.5	-	-	-
C1	0.3	0.4	0.5	-	-	-
D	4.4	4.5	4.6	-	-	-
D1	1.4	1.6	1.8	-	-	-
E	2.4	2.5	2.6	-	-	-
e	0.37	0.47	0.57	-	-	-
e1	0.22	0.42	0.62	-	-	-
H	-	-	4.25	-	-	-
L	0.8	-	-	-	-	-

DFN2x2-6







Size / Mark	Min (mm)	Typ(mm)	Max(mm)	Size / Mark	Min (mm)	Typ(mm)	Max(mm)
A	0.70	0.75	0.80	E2	0.75	0.80	0.85
A1	0.00	0.02	0.05	e	0.650BSC		
b	0.30	0.35	0.40	Nd	1.300BSC		
c	0.18	0.20	0.25	K	0.20	-	-
D	1.95	2.00	2.05	L	0.28	0.33	0.38
D2	1.25	1.30	1.35	H	0.15	0.20	0.25
E	1.95	2.00	2.05				

■ ORDER INFORMATION:

date	Version	Revision notes	Reviser
2020.3.6	V1.0	Initial data compilation	ZhangSongfeng