芯北科技
CHIPNORTH

CN88LXXX
线性稳压器
35V, 150mA

■ 介绍

CN88LXXX 系列是高精度，高输入电压，低静态电流，高速，低压差线性稳压器，具有高纹波抑制能力。该器件采用 BCD 工艺制造。

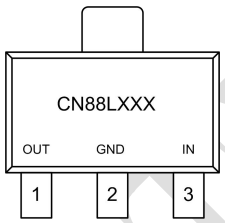
CN88LXXX 提供过热，过流保护，以确保设备在良好的条件下工作。

■ 特征

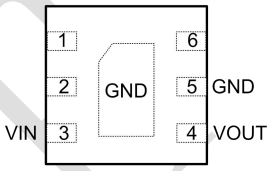
- 三端调节器
- 供电电压：4.75V～35V
- 输出范围：2.5V，3.3V，4.0V，5.0V，5.6V，12V
- 输出电流高达 150mA
- 输出精度：<±2%
- 静态电流
  6μA@ VIN = VO+2V（Typ。）
- 内部热过载保护
- 内部短路限制
- 推荐电容：1~10uF

■ 应用领域

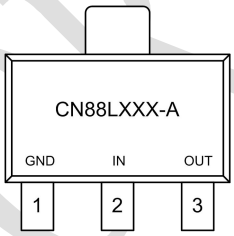
- 智能电表
- 开关电源



SOT89-3 Top View



DFN2x2–6 Top View



SOT89-3 Top View

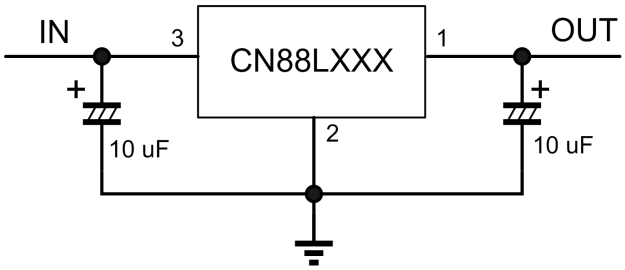
CN88L025	Vout=2.5V
CN88L033	Vout = 3.3V
CN88L040	Vout = 4.0V
CN88L050	Vout = 5.0V
CN88L056	Vout = 5.6V
CN88L120	Vout=12V

■ 订单信息

零件号	包装类型	数量	标记*
CN88LXXXOGR	SOT89-3	1000 /卷	CN88LXXX/YYWW
CN88LXXXOGR-A	SOT89-3	1000/Tape	CN88LXXXA/YYWW
CN88L025DSR	DFN2x2-6	4000 /卷	CN8825/YYWW

*注：YY / Y =年；WW / W =周；CN88LXXX / CN8825 =产品名称；XXX =电压

■ 典型应用



■ 引脚说明

CN88LXXX 系列

序号	名称	功能
1	OUT	输出
2	GND	地
3	IN	输入

CN88LXXX-A 系列

序号	名称	功能
1	GND	地
2	IN	输入
3	OUT	输出

■ 绝对最大额定值

符号	参数	评分		单位
V_{IN} Range	输入电压范围	-0.3～35		V
V_{OUT} Range	输出电压范围	-0.3～12		V
T_J	结温范围	-45~150		℃
T_{STG}	储存温度范围	-65~160		℃
ESD（HBM）	人体模型	4000		V
R_{thJA}	结点对环境的热阻	SOT89-3	90(1)	℃/W
		DFN2x2-6	140(1)	℃/W

注意（1）：PCB 上有 6 cm^2 铜箔。

■ 电气特性

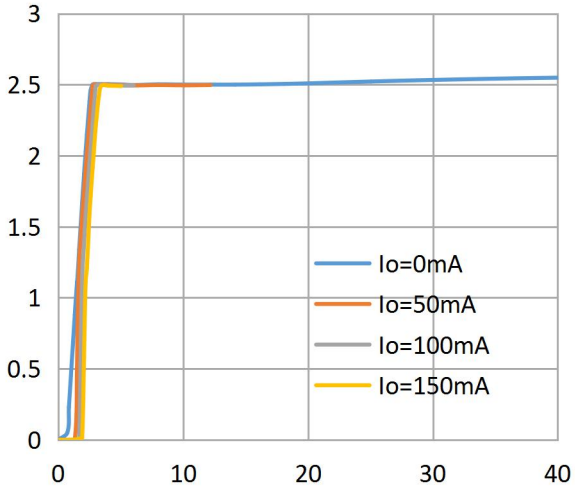
测试条件：T_A=25℃, V_{IN}=12V, I_O=10mA, C_{IN}=10μF, C_{OUT}=10μF，除非另有说明。

符号	参数	条件	最小值	典型值	最大值	单位
V_I	输入范围		4.5	-	35	V
V_O	输出范围	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}	线性调整率	V_I= 5.5～24V，Vout = 5V		3		mV/V
REG_{LOAD}	负载调整率	I_o=1mA to 150mA		70		uV/mA
I_Q	静态电流	Io=0mA		6	12	uA
$\Delta V_O/\Delta T$	输出温度系数		-	300	-	uV/℃
V_D	压差	I_o=100mA		500	-	mV
PSRR	电源抑制比	V_I=8-16V,f=120Hz I_O=50mA,T_J=25℃		45		dB
OTP	过温保护			150		℃
OCP	过流保护	V_{OUT}= 0.9*V_{OUT}≤2.5V		270		mA
		V_{OUT}= 0.9*V_{OUT}>2.5V		330		

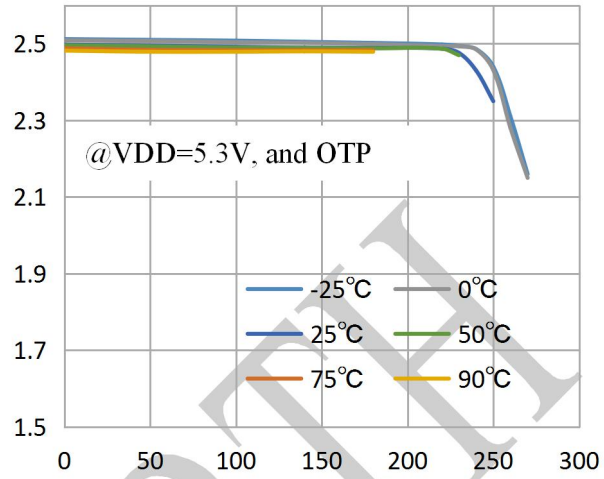
■ 典型参数 (CN88L025)

测试条件: TA=25° C, VIN=12V，CL=10uF, 除非另有说明。

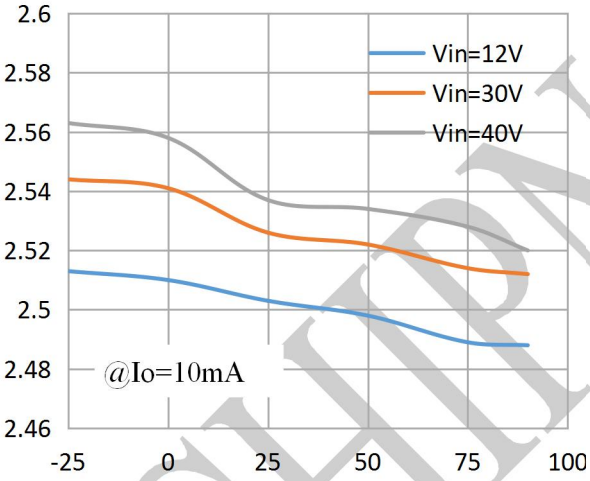
Vout(V) VS. Vin(V)



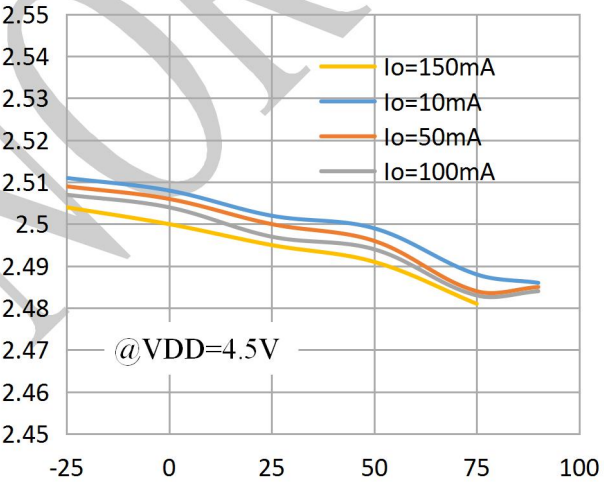
Vout(V) VS. Iout(mA)



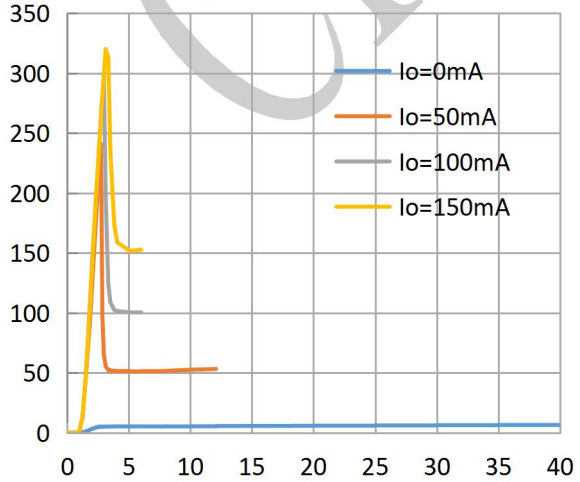
Vout(V) VS. Temp(℃)



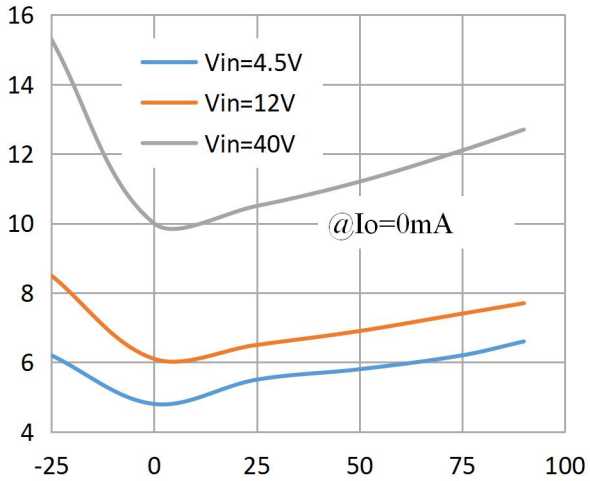
Vout(V) VS. Temp(℃)



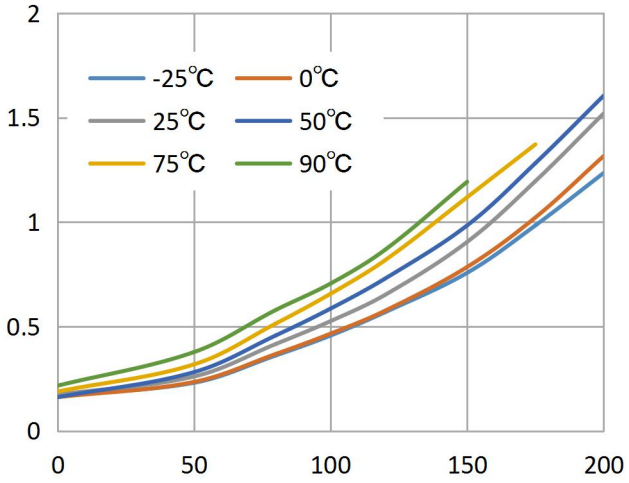
I_Q(uA) VS. Vin(V)



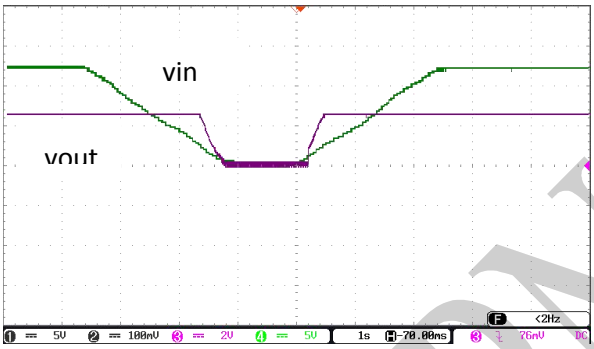
I_Q(uA) VS. Temp(℃)



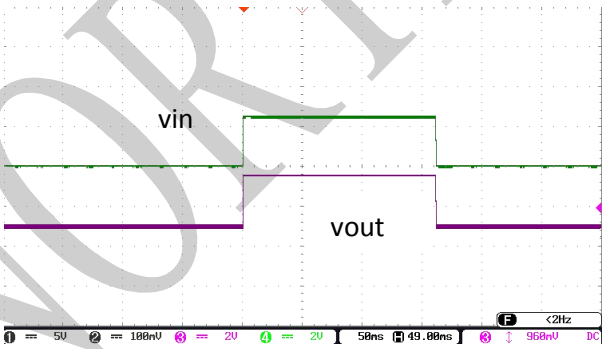
Dropout Voltage(V) VS. Iout(mA)



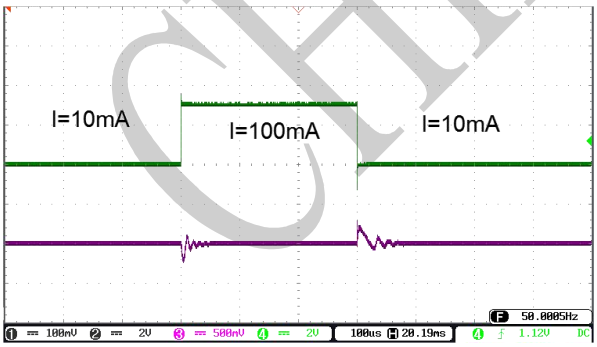
Vin Response(Vout VS. Vin)



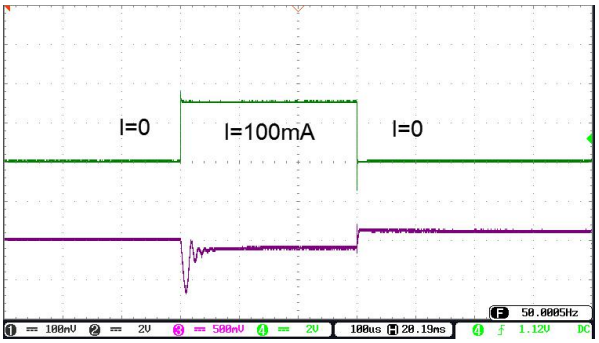
Vin Response(Vout VS. Vin)



Load Response(VoutVS.Iload)



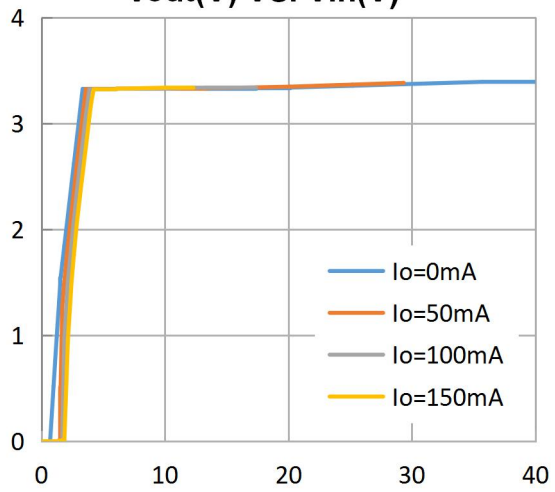
LoadResponse(VoutVS.Iload)



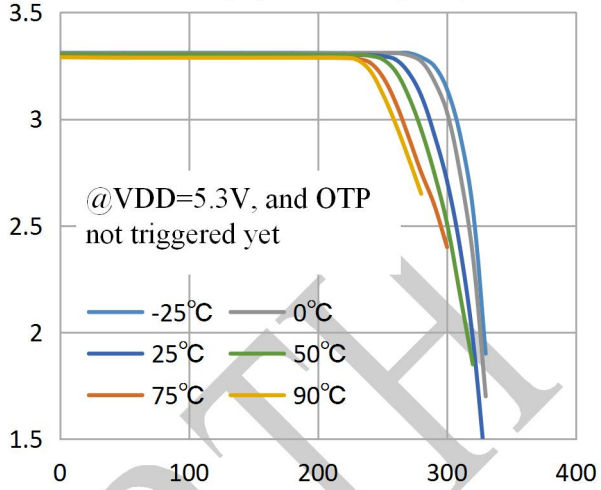
■ 典型参数 (CN88L033)

测试条件: TA=25° C, VIN=12V，CL=10uF, 除非另有说明。

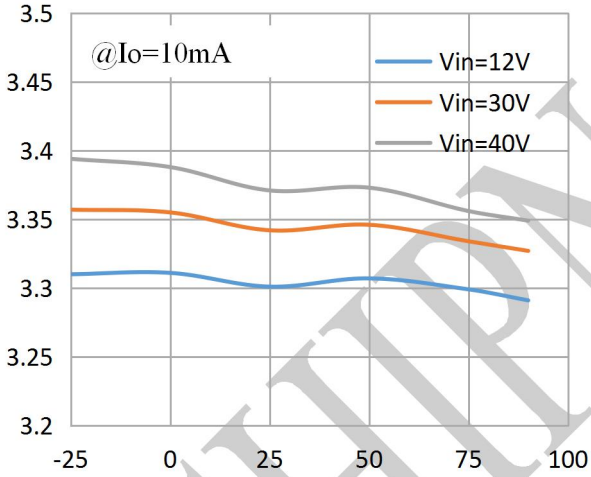
Vout(V) VS. Vin(V)



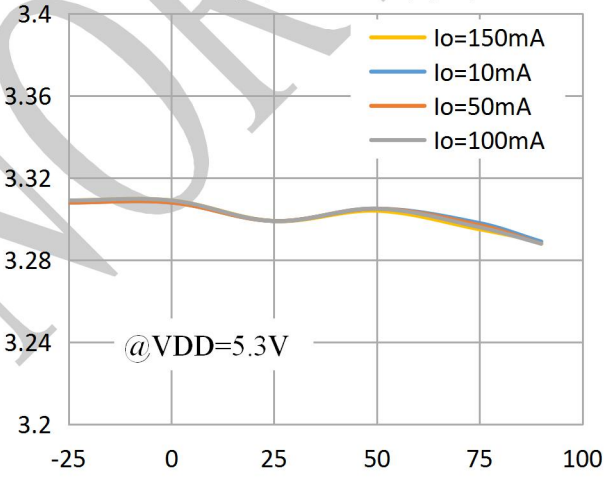
Vout(V) VS. Iout(mA)



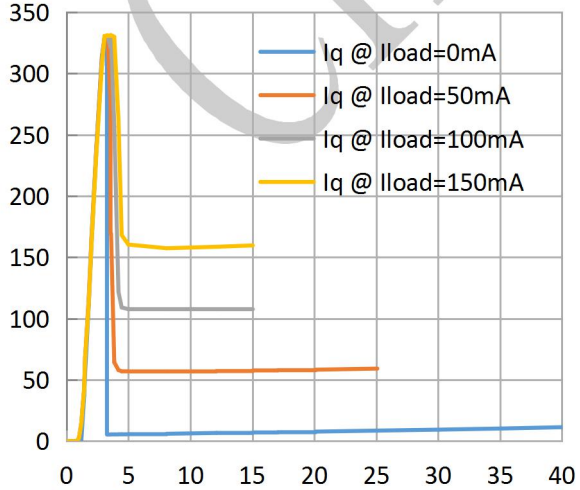
Vout(V) VS. Temp(℃)



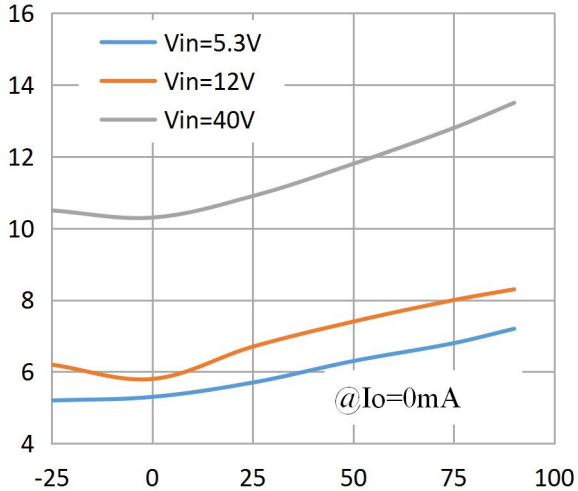
Vout(V) VS. Temp(℃)



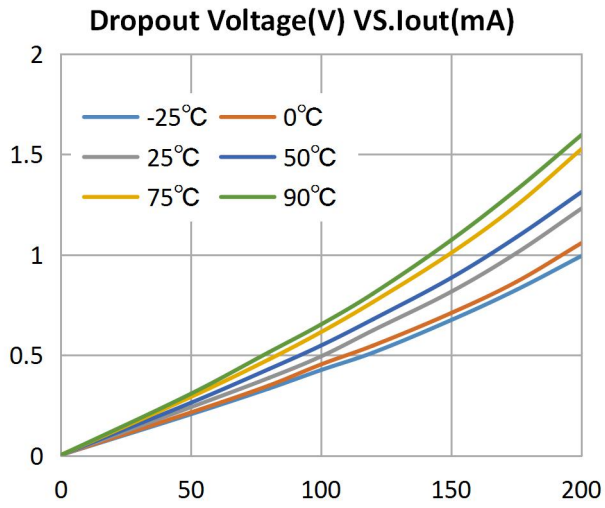
I_Q(uA) VS. Vin(V)



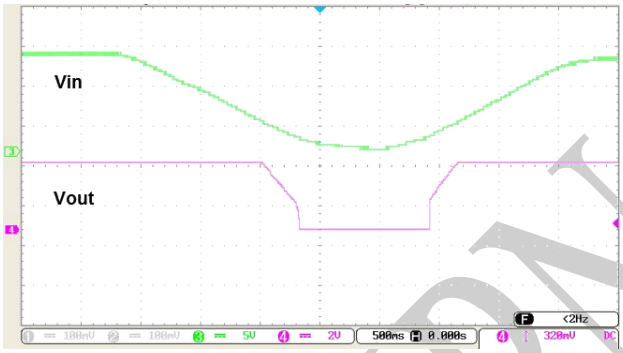
I_Q(uA) VS. Temp(℃)



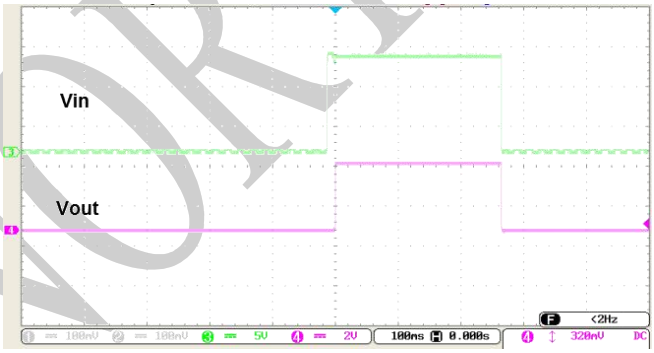
Dropout Voltage(V) VS.Iout(mA)



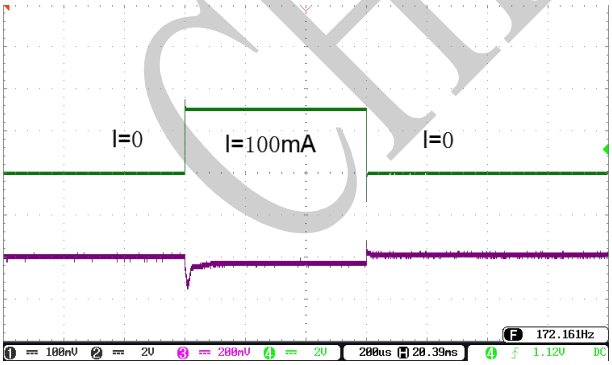
Vin Response(Vout VS. Vin)



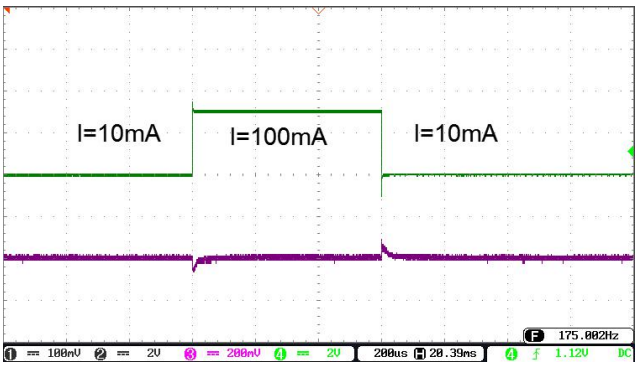
Vin Response(Vout VS. Vin)



Load Response(Vout VS. Iload)



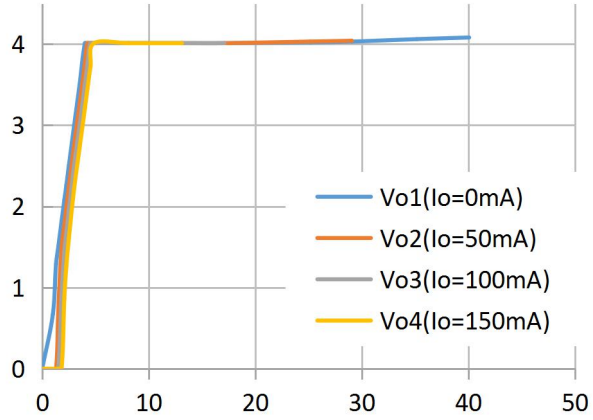
Load Response(Vout VS. Iload)



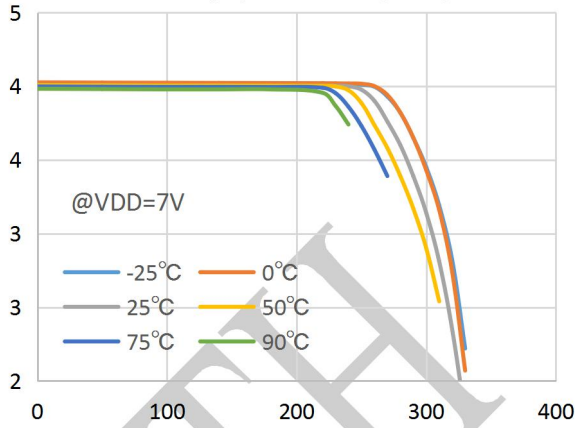
■ 典型参数 (CN88L040)

测试条件: TA=25° C, VIN=12V，CL=10uF, 除非另有说明。

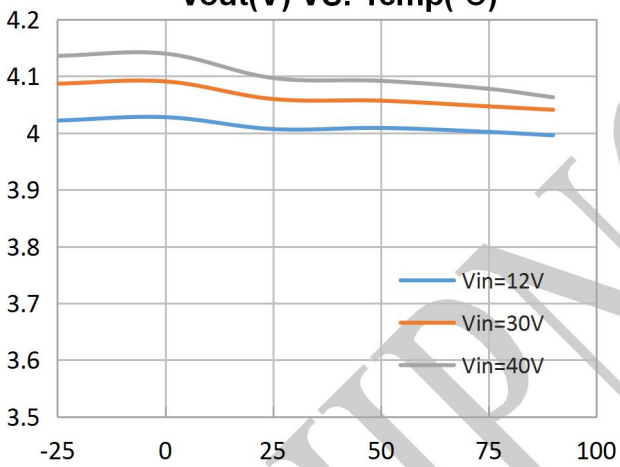
Vout(V) VS. Vin(V)



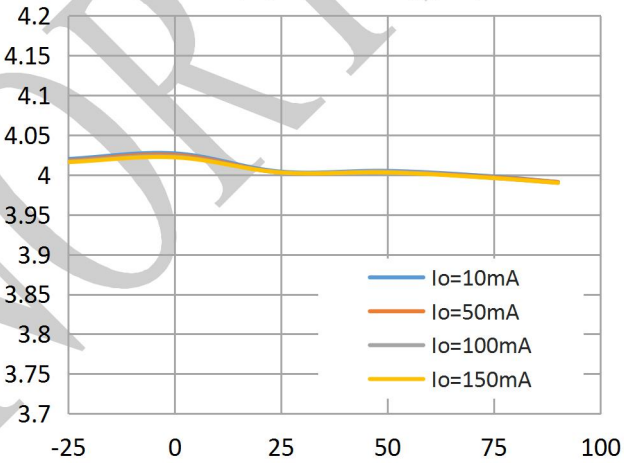
Vout(V) VS. Iout(mA)



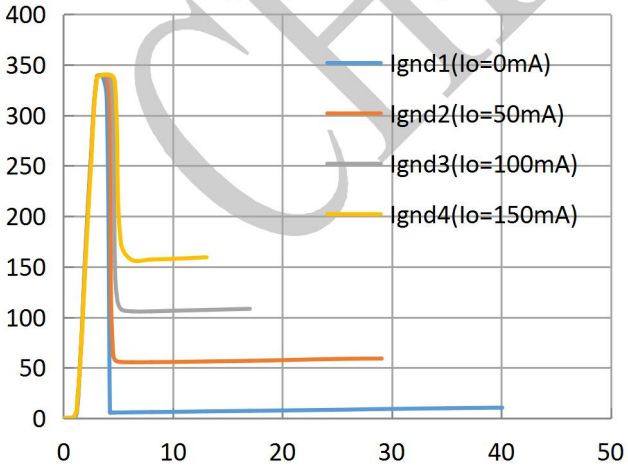
Vout(V) VS. Temp(℃)



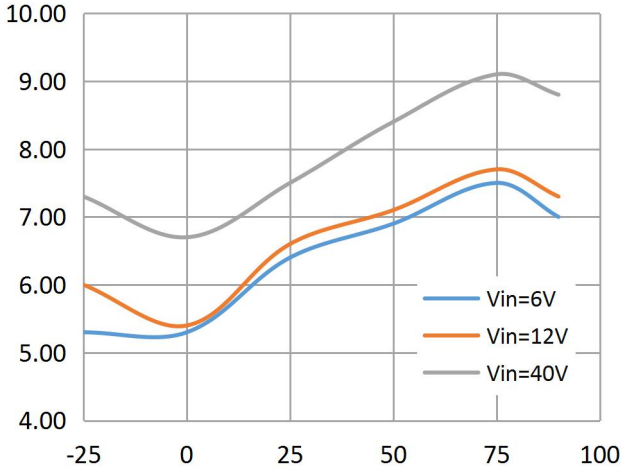
Vout(V) VS. Temp(℃)



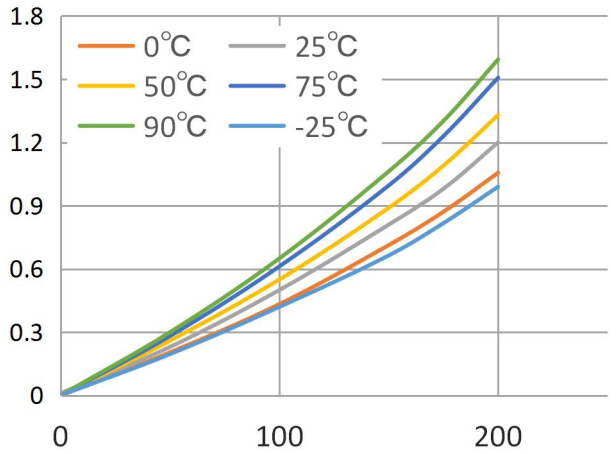
Iq(uA) VS. VDD(V)



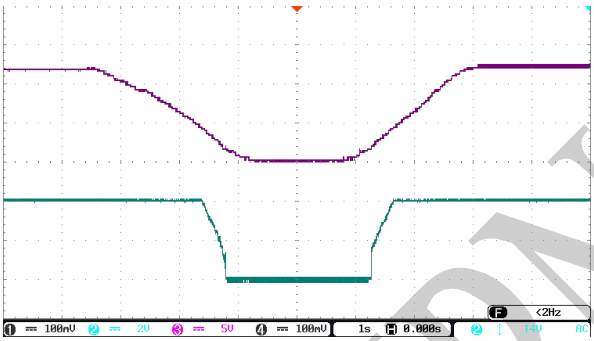
IQ (uA) VS. Temp(℃)



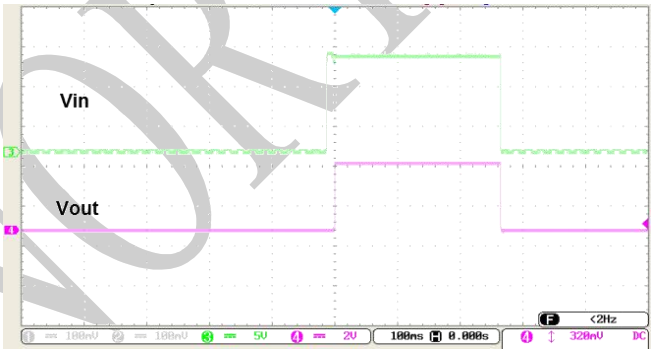
Dropout Voltage(V) VS. Iout(mA)



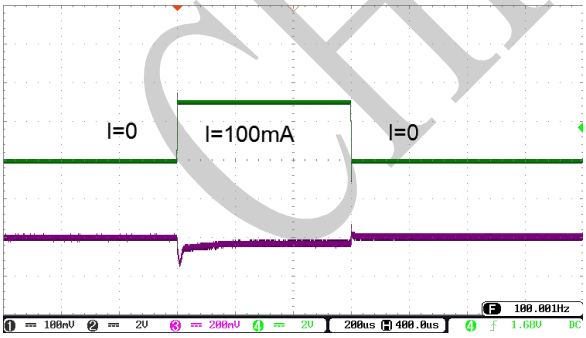
Vin Response(Vout VS. Vin)



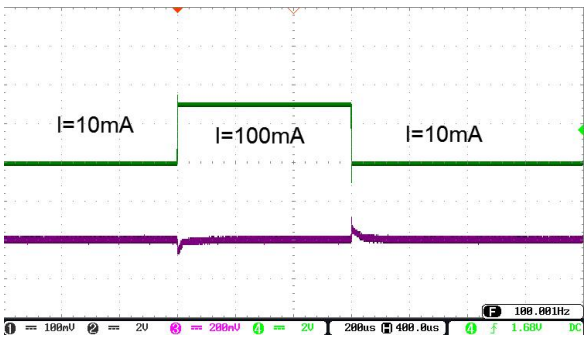
Vin Response(Vout VS. Vin)



Load Response(Vout VS. Iload)



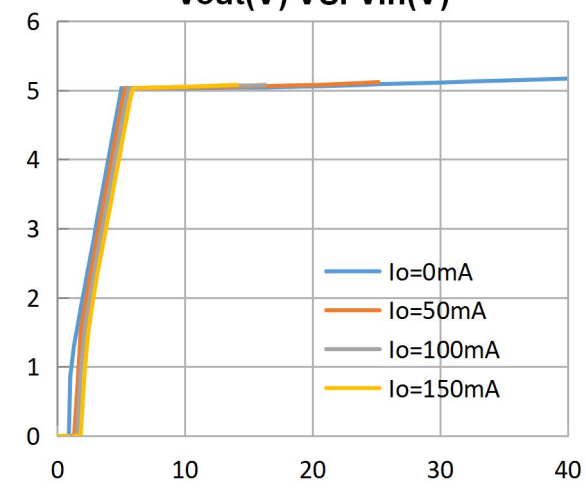
Load Response(Vout VS. Iload)



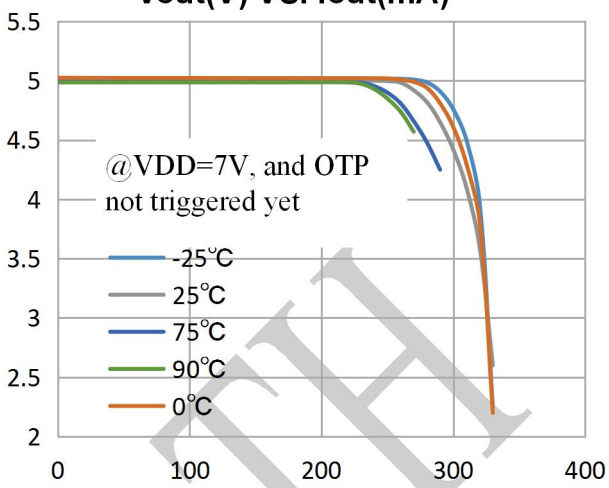
■ 典型参数 (CN88L050)

测试条件: TA=25° C, VIN=12V，CL=10uF, 除非另有说明。

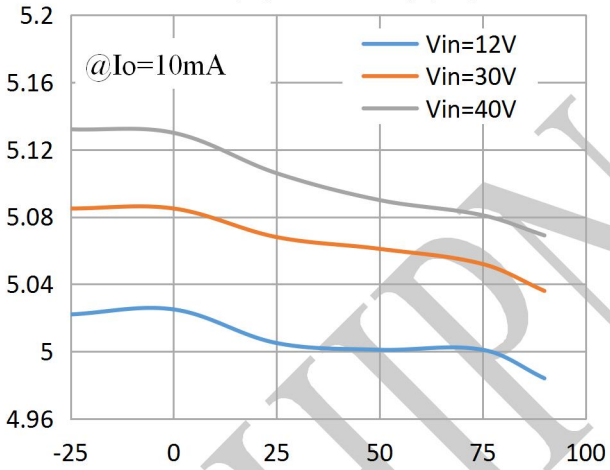
Vout(V) VS. Vin(V)



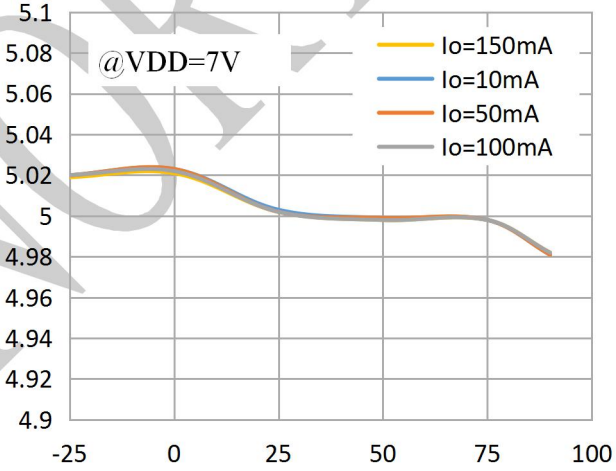
Vout(V) VS. Iout(mA)



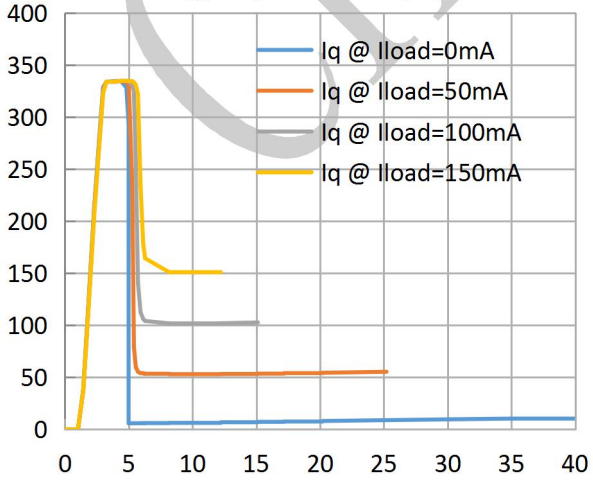
Vout(V) VS. Temp(℃)



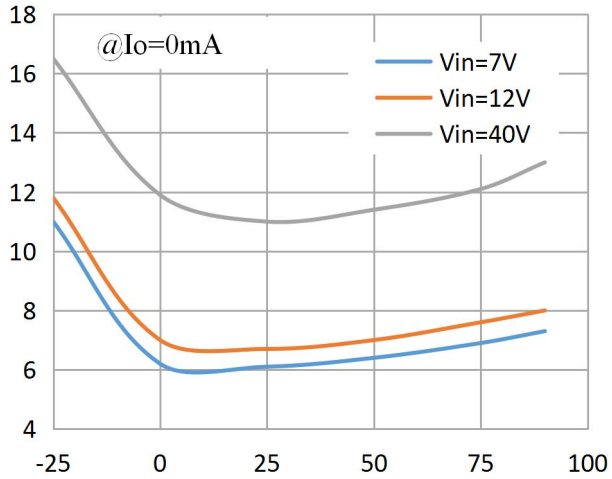
Vout(V) VS. Temp(℃)



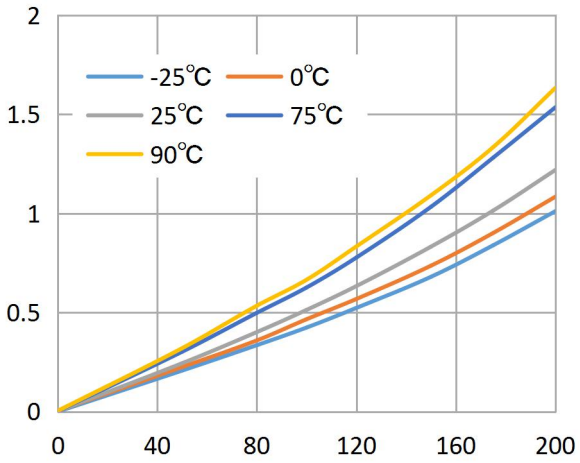
I_Q(uA) VS. VDD(V)



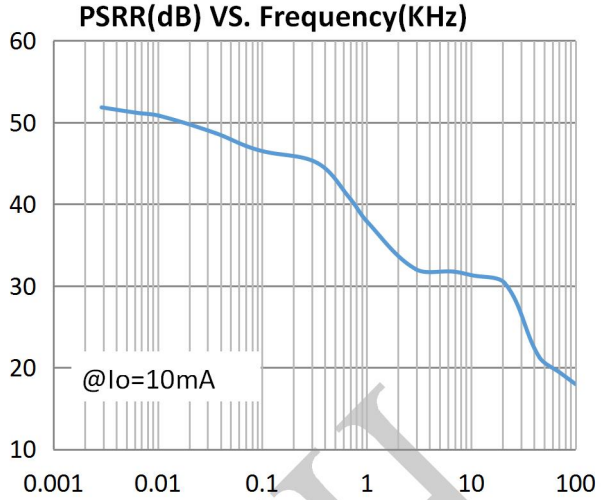
I_Q(uA) VS. Temp(℃)



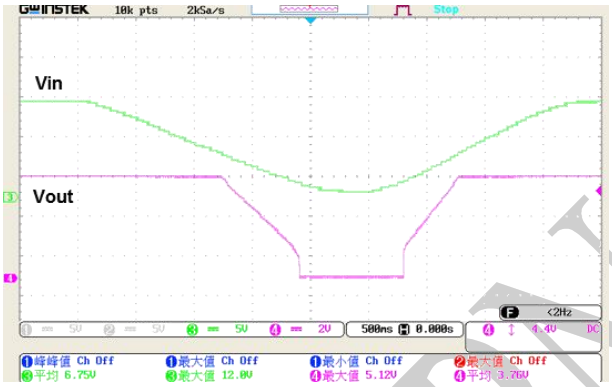
Dropout Voltage(V) VS. Iout(mA)



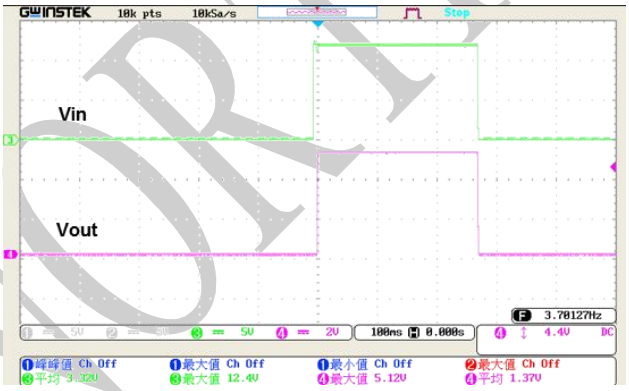
PSRR(dB) VS. Frequency(KHz)



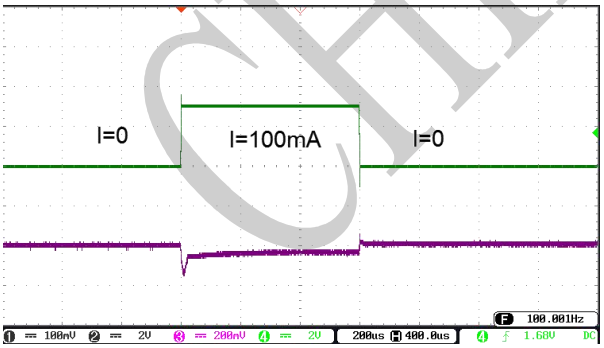
Vin Response(Vout VS. Vin)



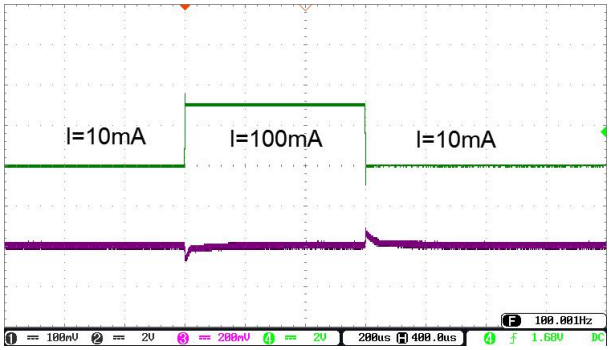
Vin Response(Vout VS. Vin)



Load Response(Vout VS. Iload)

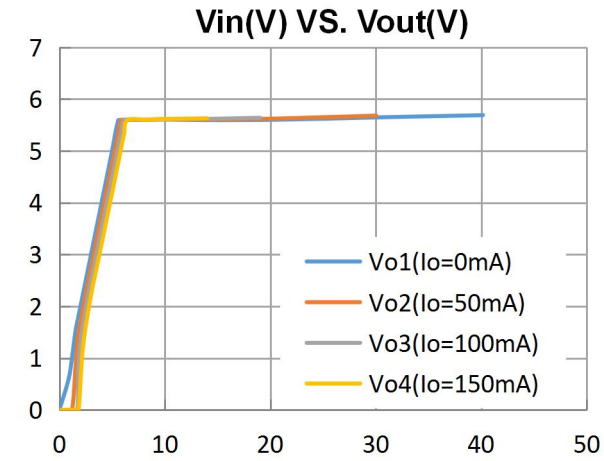


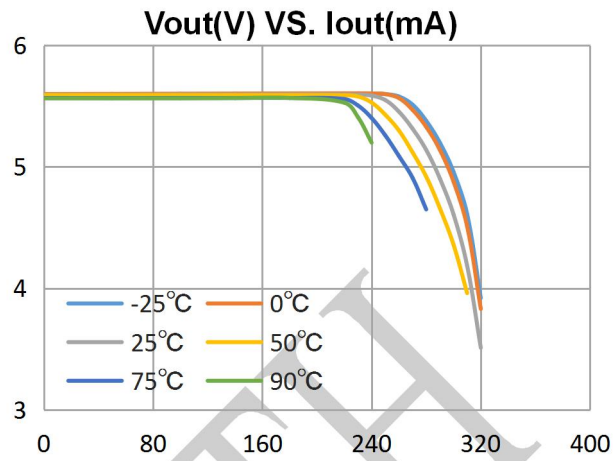
Load Response(Vout VS. Iload)

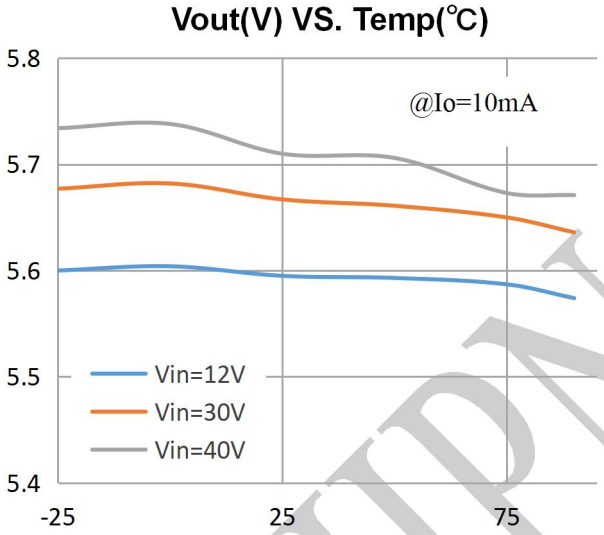


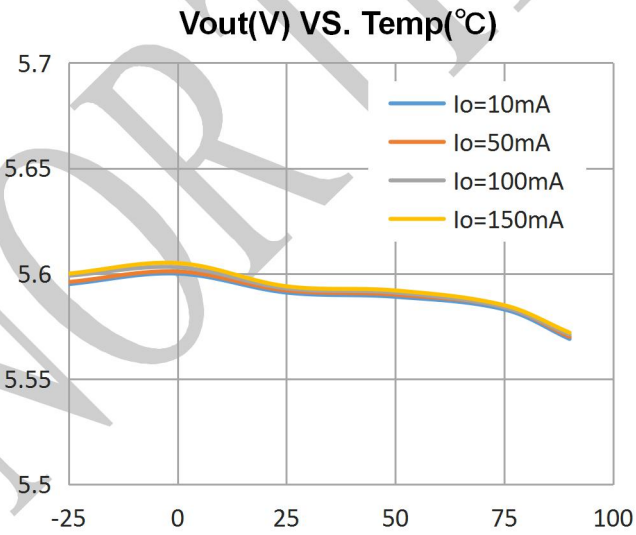
■ 典型参数 (CN88L056)

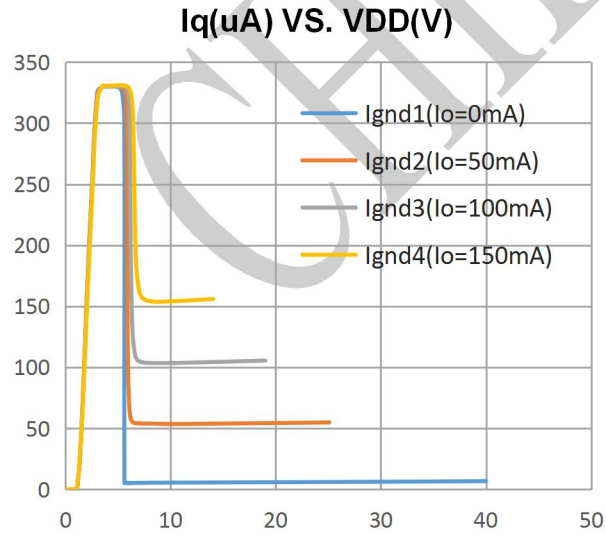
测试条件: TA=25° C, VIN=12V，CL=10uF, 除非另有说明。

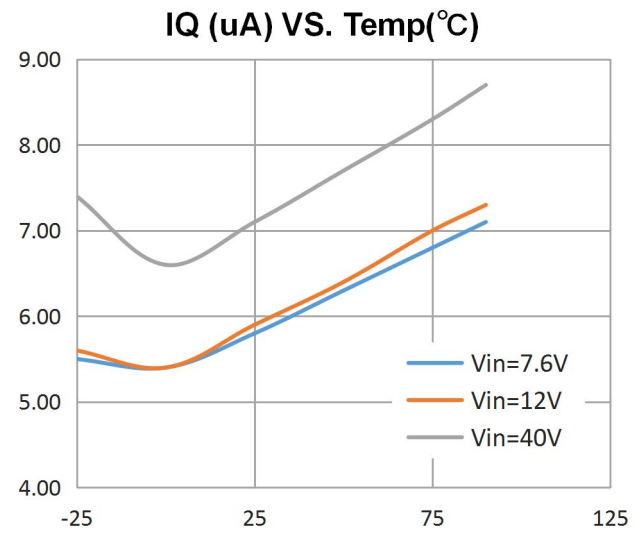


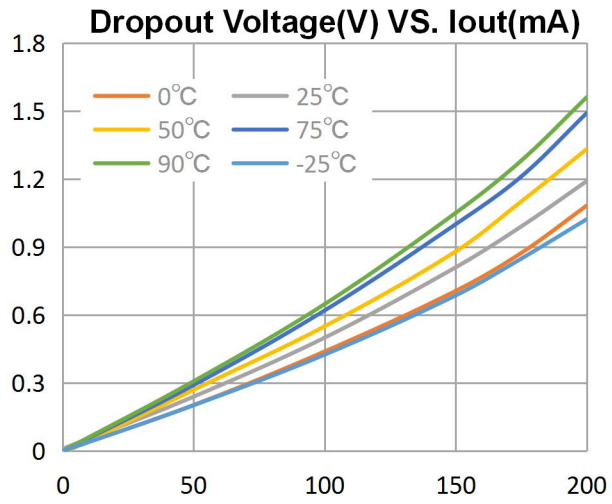




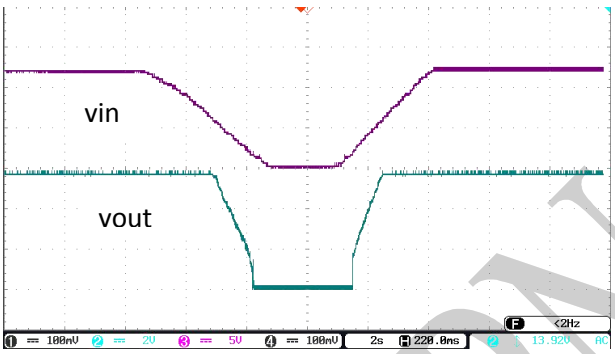




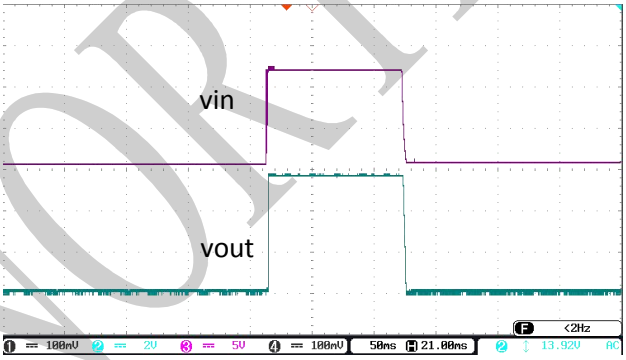




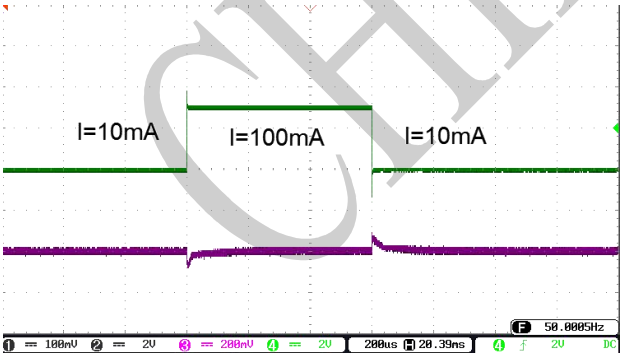
Vin Response(Vout VS. Vin)



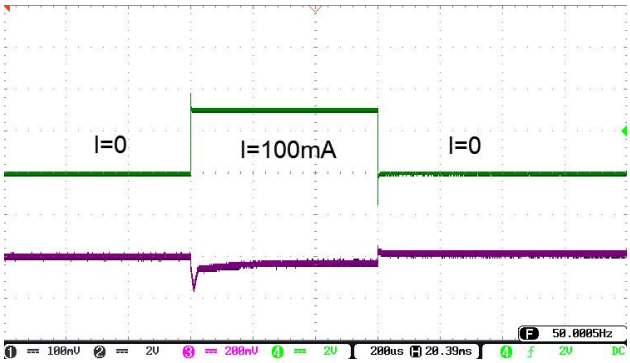
Vin Response(Vout VS. Vin)



Load Response(Vout VS. Iload)

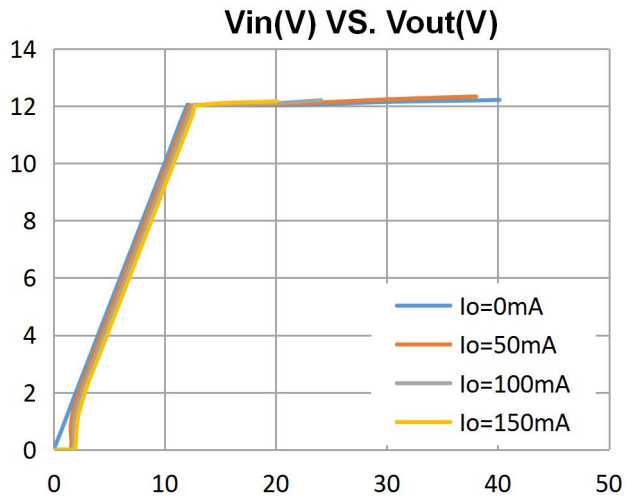


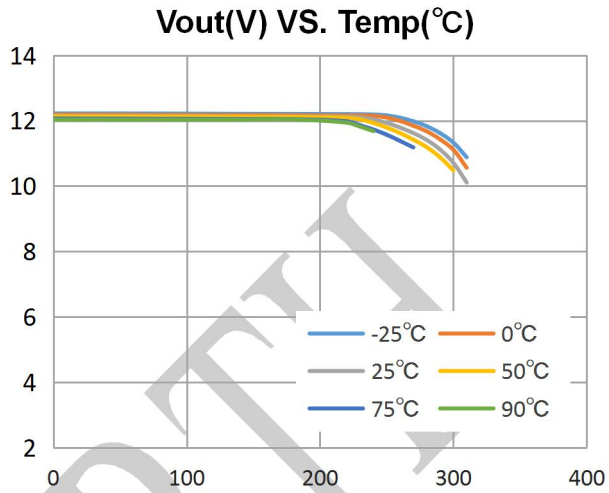
Load Response(Vout VS. Iload)

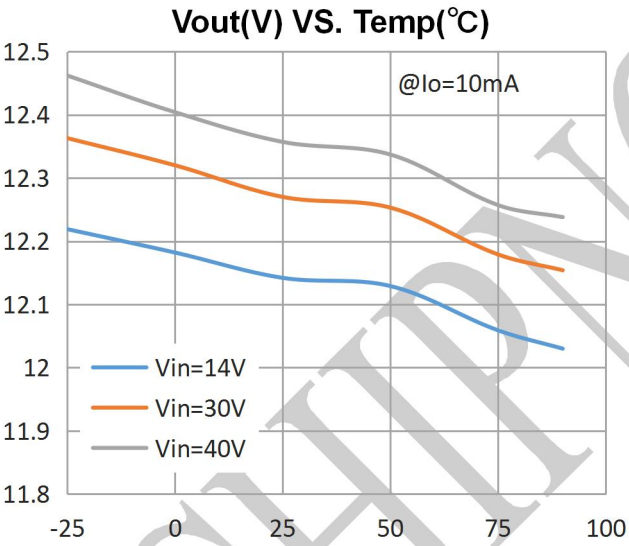


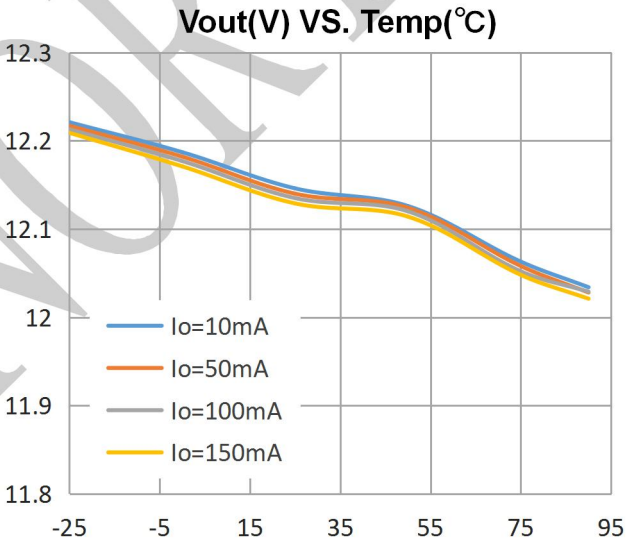
■ 典型参数 (CN88L120)

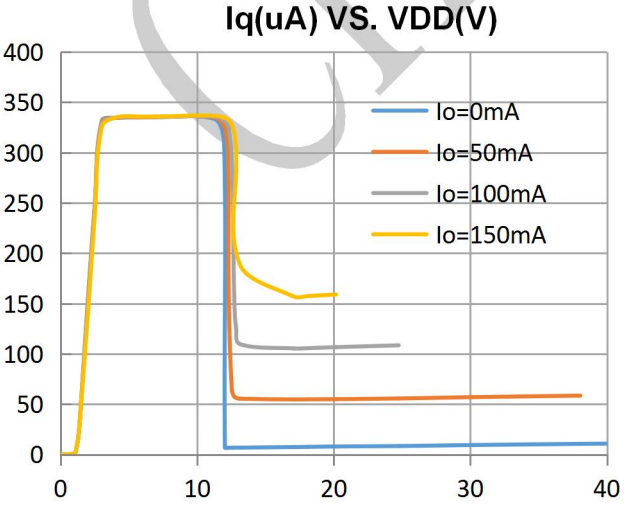
测试条件: TA=25° C, VIN=14V，CL=10uF, 除非另有说明。

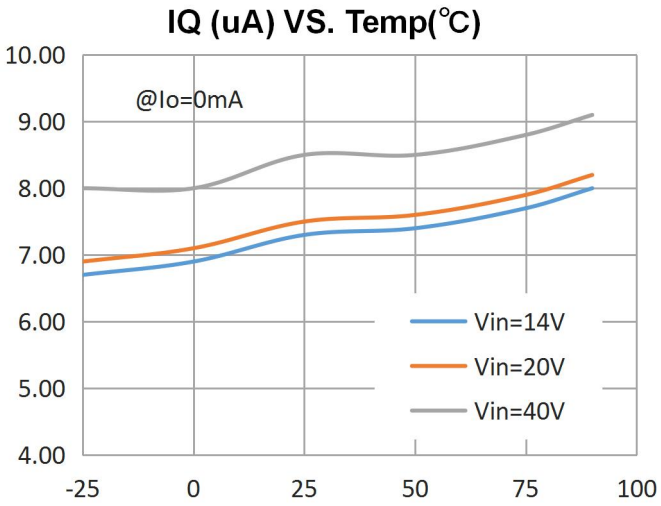




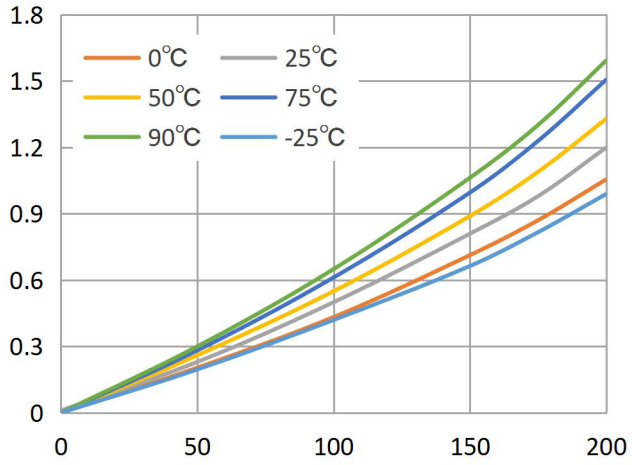




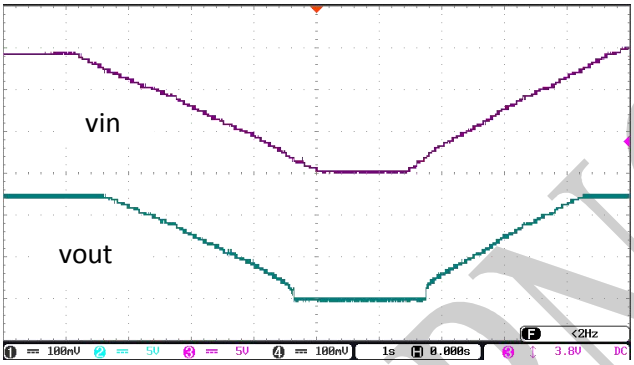




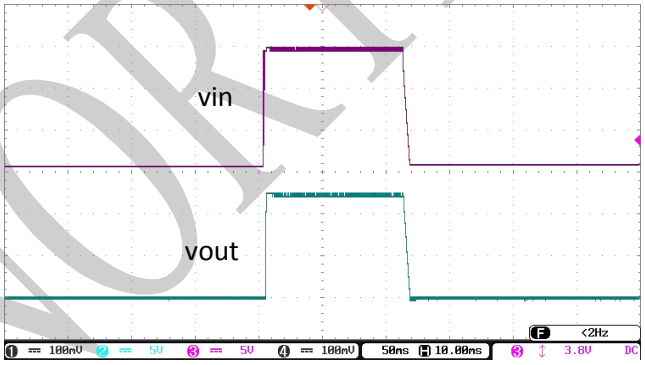
Dropout Voltage(V) VS. Iout(mA)



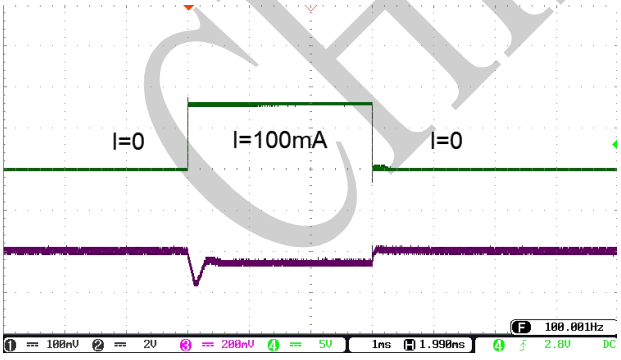
Vin Response(Vout VS. Vin)



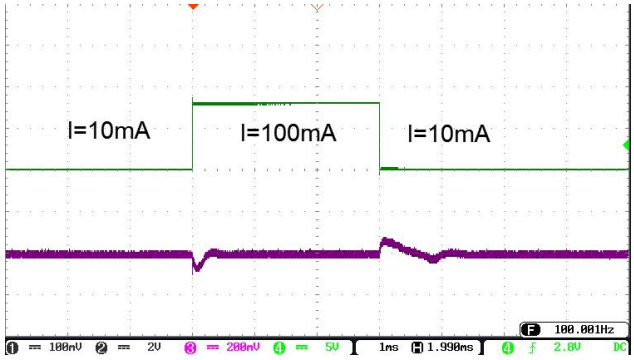
Vin Response(Vout VS. Vin)



Load Response(Vout VS. Iload)

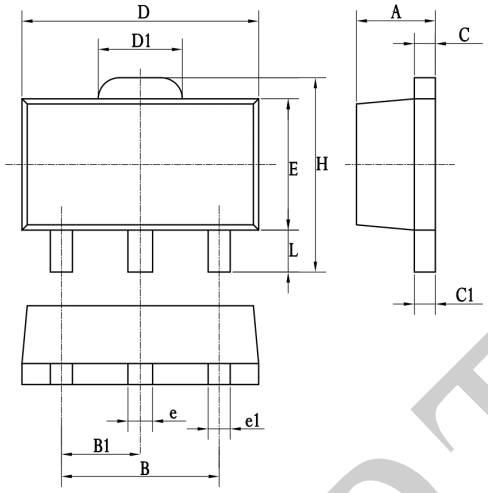


Load Response(Vout VS. Iload)



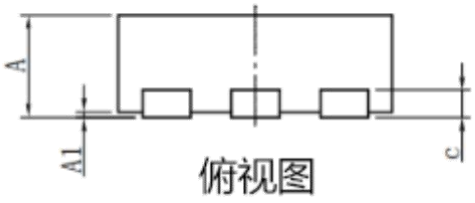
■ 封装信息

SOT89-3

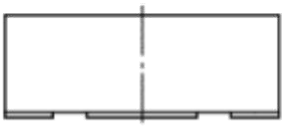


符号	毫米			英寸		
	最小	标准	最大	最小	标准	最大
A	1.4	1.5	1.6	-	-	-
B	2.8	3	3.2	-	-	-
B1	1.4	1.5	1.6	-	-	-
C	0.3	0.4	0.5	-	-	-
C1	0.3	0.4	0.5	-	-	-
D	4.4	4.5	4.6	-	-	-
D1	1.4	1.6	1.8	-	-	-
E	2.4	2.5	2.6	-	-	-
e	0.37	0.47	0.57	-	-	-
e1	0.22	0.42	0.62	-	-	-
H	-	-	4.25	-	-	-
L	0.8	-	-	-	-	-

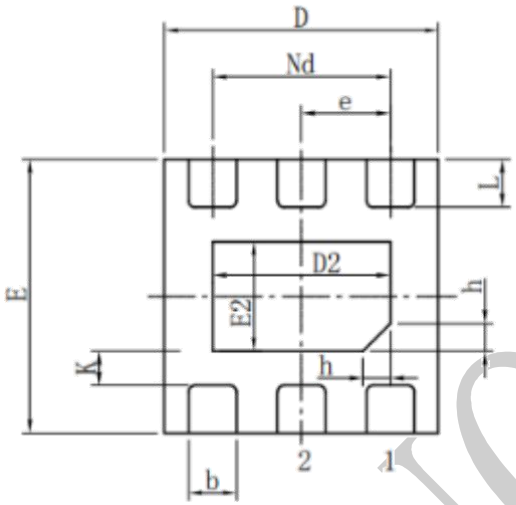
DFN2x2-6



俯视图



侧视图



底视图

尺寸 / 标注	最小 (mm)	标准 (mm)	最大 (mm)	尺寸 标注	最小 (mm)	标准 (mm)	最大 (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				

■ 版本修订

日期	版本号	修订说明	修订人
2020.3.10	V1.0	初始数据编写	张松峰