

AL88XX
线性稳压器
35V, 150mA

■ 介绍

AL88XX 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 C-MOS 工艺制造。

AL88XX 提供过热，过流保护，以确保设备在良好的条件下工作。

■ 特征

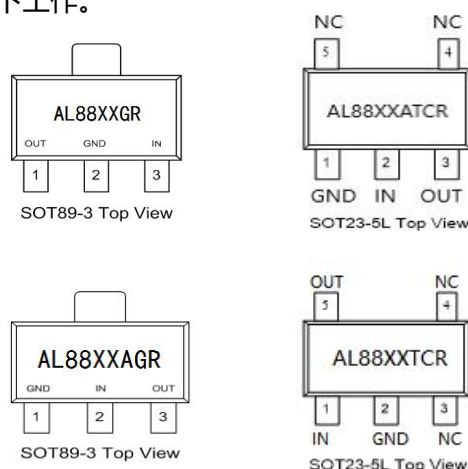
- 三端调节器
- 供电电压：2.7V~35V
- 输出范围：2.5V,3.3V,4.0V,5.0V,5.6V,12V
- 输出电流高达 150mA
- 输出精度： $<\pm 2\%$
- 静态电流 $6\mu A @ V_{IN} = V_O + 2V$ (Typ)
- 内部热过载保护
- 内部短路限制
- 推荐电容：1-10uF

■ 应用领域

- 智能电表
- 移动电源
- 烟雾报警器
- 电动工具
- POS 机

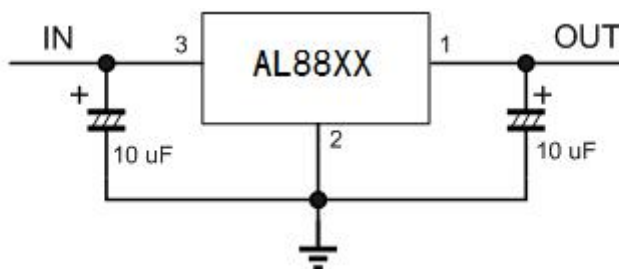
■ 订单信息

零件号	包装类型	数量
AL88XXGR	SOT89-3	1000 /盘
AL88XXAGR	SOT89-3	1000/盘
AL88XXTCR	SOT23-5	3000/盘
AL88XXATCR	SOT23-5	3000/盘



Part NO.	Output Voltage
AL8825	Vout=2.5V
AL8833	Vout=3.3V
AL8840	Vout=4.0V
AL8850	Vout=5.0V
AL8856	Vout=5.6V
AL8812	Vout=12V

■ 典型应用



■ 引脚说明

AL88XX 系列

序号	名称	功能
1	OUT	输出
2	GND	地
3	IN	输入

AL88XX-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
VIN Range	输入电压范围	-0.3 ~ 35	V
VOU Range	输出电压范围	-0.3 ~ 12	V
TJ	结温范围	-45~150	°C
TSTG	储存温度范围	-65~160	°C
OTR	工作温度范围	-40~85	°C
ESD (HBM)	人体模型	4000	V
RthJA	结点对环境的热阻	SOT89-3	100(1)

注意 (1) : PCB 上有 6 cm² 铜箔。

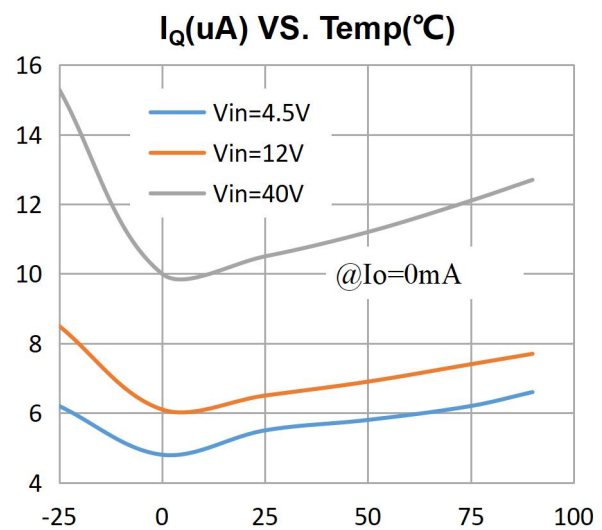
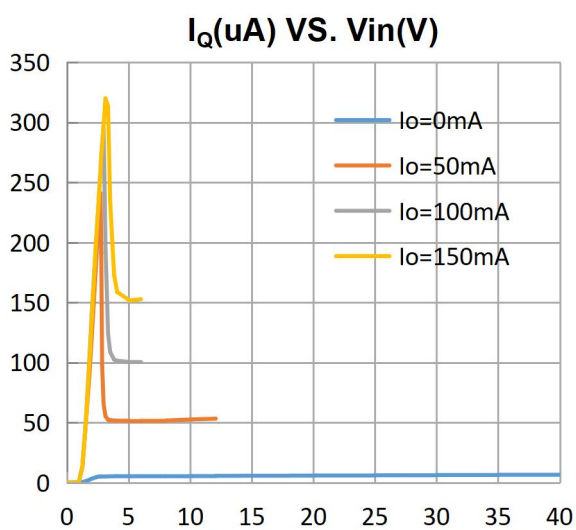
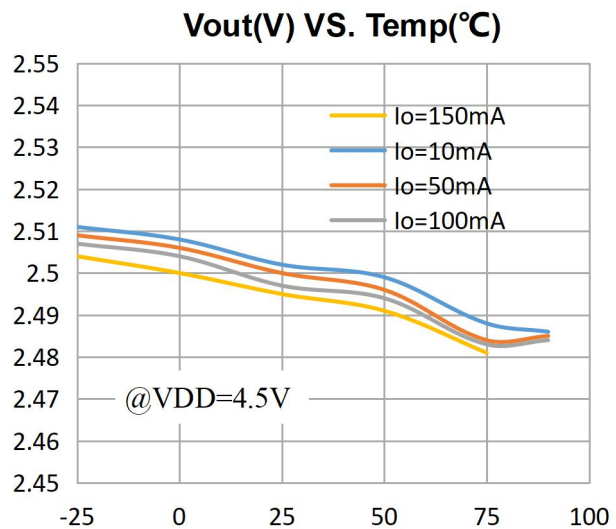
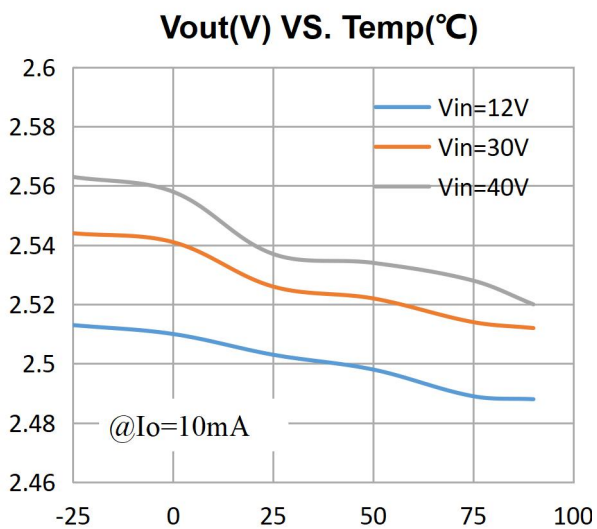
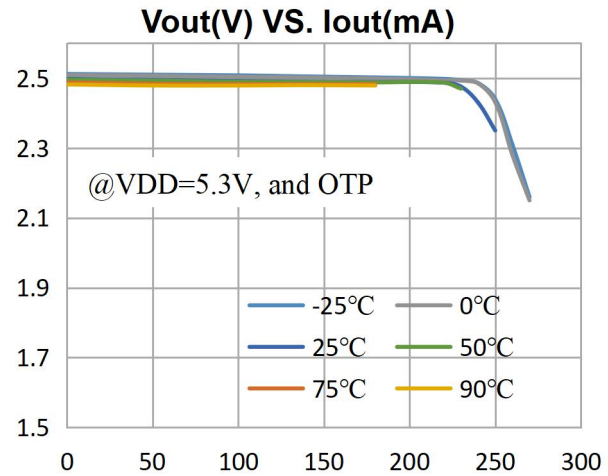
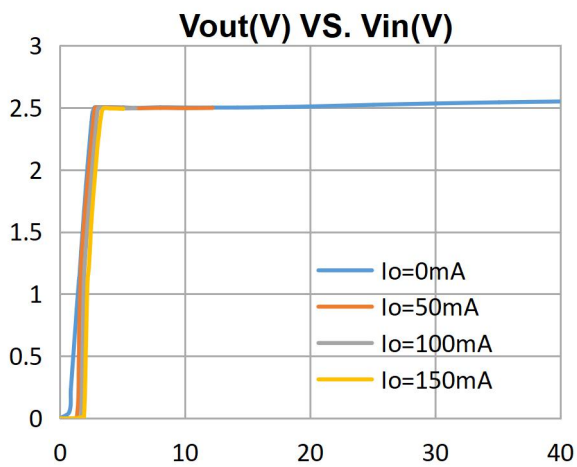
■ 电气特性

测试条件: $T_A=25^{\circ}\text{C}$, $V_{IN}=12\text{V}$, $I_o=10\text{mA}$, $C_{IN}=10\mu\text{F}$, $C_{OUT}=10\mu\text{F}$, 除非另有说明。

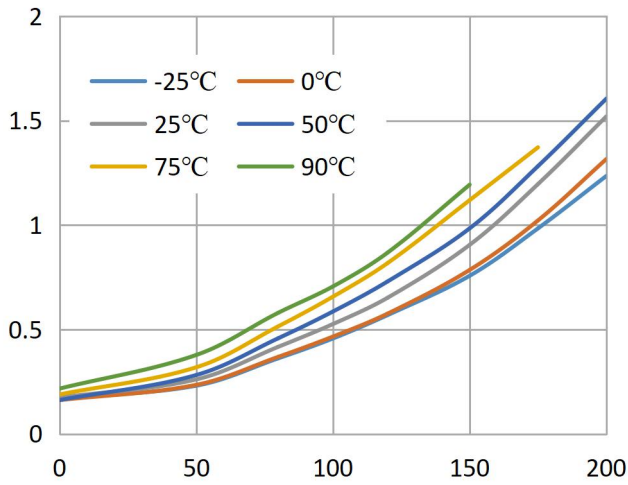
符号	参数	条件	最小值	典型值	最大值	单位
V_i	输入范围		4.5	-	35	V
V_o	输出范围	AL8825	2.45	2.5	2.55	V
		AL8833	3.234	3.3	3.366	V
		AL8840	3.92	4	4.08	V
		AL8850	4.9	5	5.1	V
		AL8856	5.48	5.6	5.71	V
		AL8812 $V_{in}=14\text{V}$	11.76	12	12.24	V
REG_{LINE}	线性调整率	$V_i=V_{out}+2\text{V}\sim 35\text{V}$, $I_o=10\text{mA}$	1.0	3.0	5.0	mV/V
REG_{LOAD}	负载调整率	$V_i=V_{out}+2\text{V}$, $I_o=1\text{mA}$ to 150mA	20	40	70	$\mu\text{V}/\text{mA}$
I_q	静态电流	$I_o=0\text{mA}$		5.5	12	μA
$\Delta V_o/\Delta T$	输出温度系数		-	300	-	$\mu\text{V}/^{\circ}\text{C}$
V_D	压差	$I_o=100\text{mA}$		500	-	mV
PSRR	电源抑制比	$V_i=8\text{-}16\text{V}$, $f=120\text{Hz}$ $I_o=50\text{mA}$, $T_J=25^{\circ}\text{C}$		45		dB
PD	Power Dissipation	SOT89-3 Package	-	800	-	mW
		SOT23-5 Package	-	400	-	mW
OTP	过温保护			150		$^{\circ}\text{C}$
OCP	过流保护			320		mA

■ 典型参数 (AL8825)

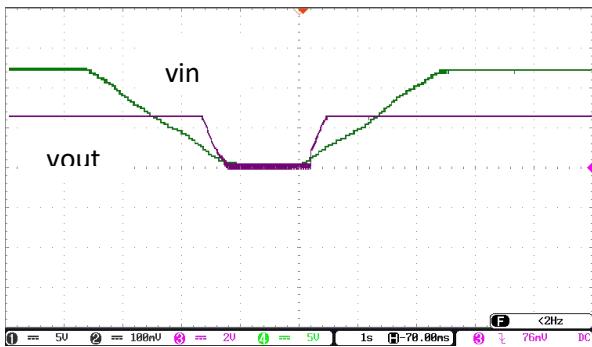
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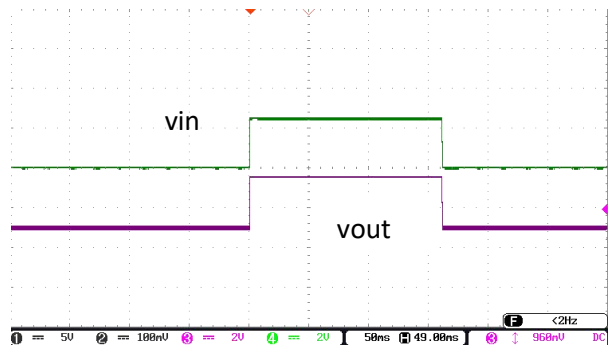
Dropout Voltage(V) VS. Iout(mA)



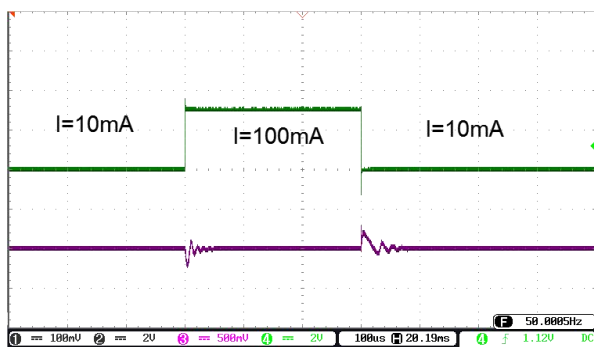
Vin Response(Vout VS. Vin)



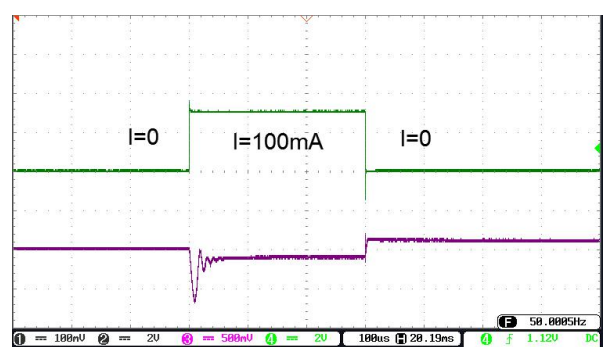
Vin Response(Vout VS. Vin)



Load Response(VoutVS.Iload)

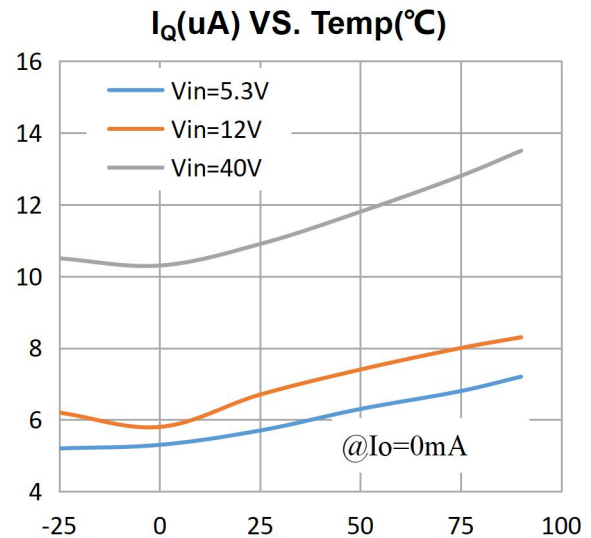
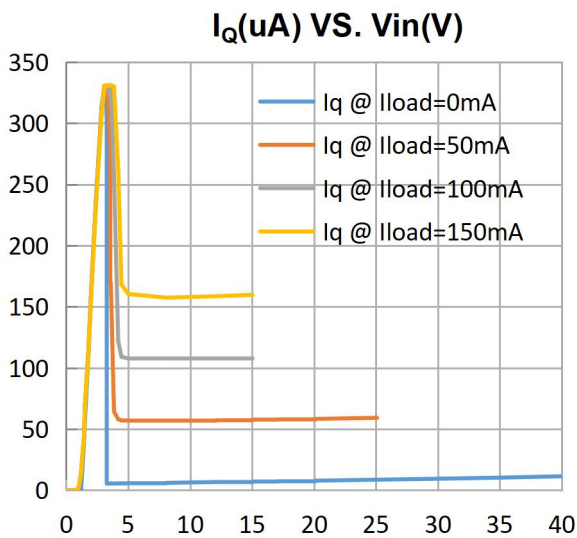
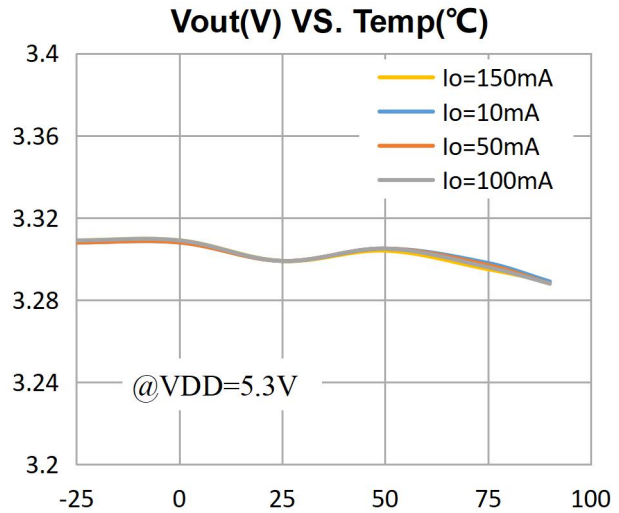
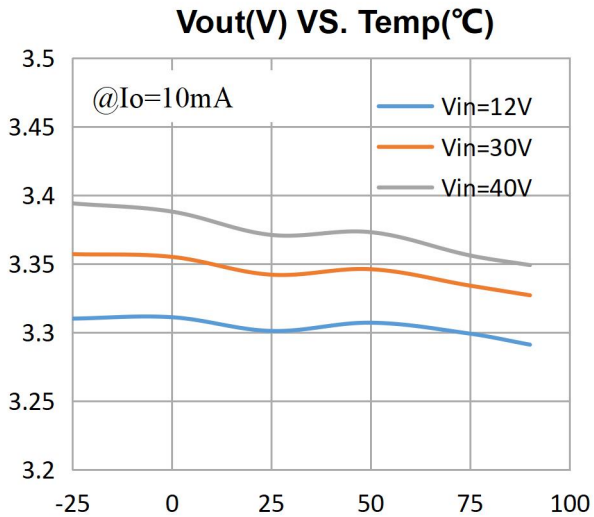
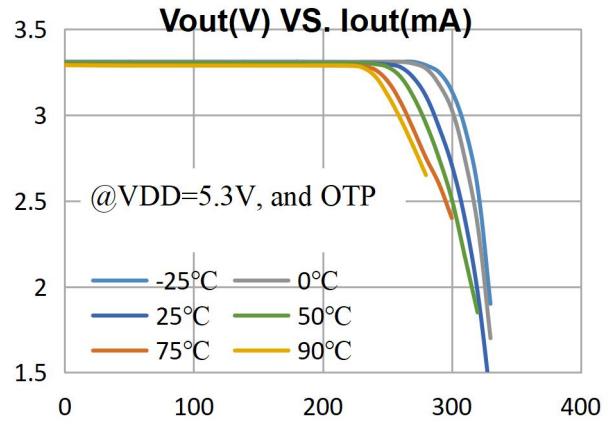
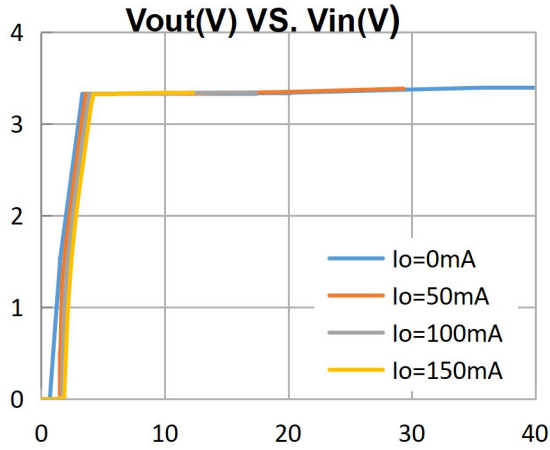


LoadResponse(VoutVS.Iload)

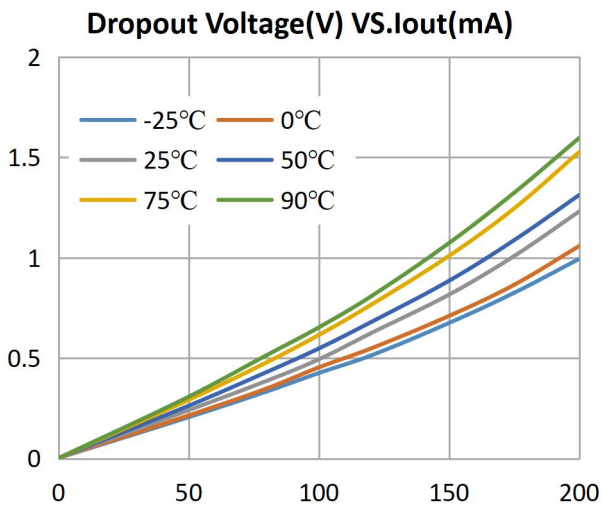


■ 典型参数 (AL8833)

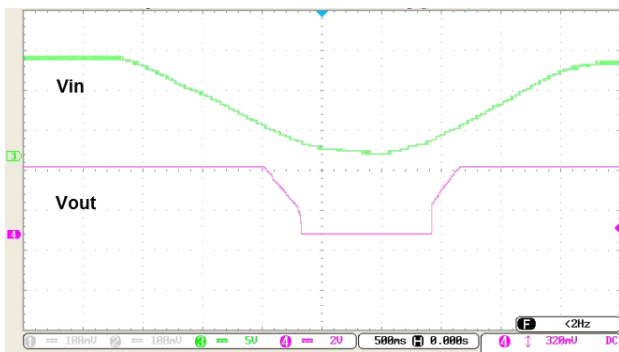
测试条件: $T_A=25^\circ\text{C}$, $V_{IN}=12\text{V}$, $C_L=10\mu\text{F}$, 除非另有说明。



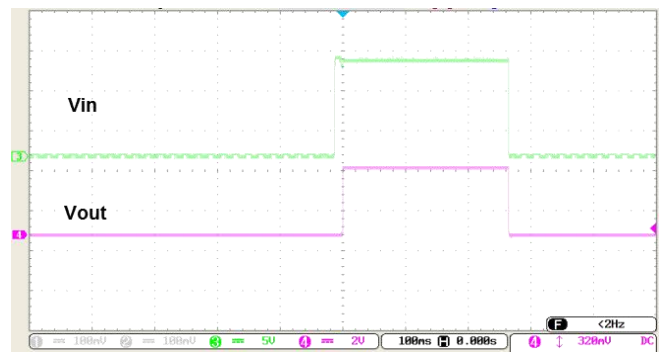
Dropout Voltage(V) VS.Iout(mA)



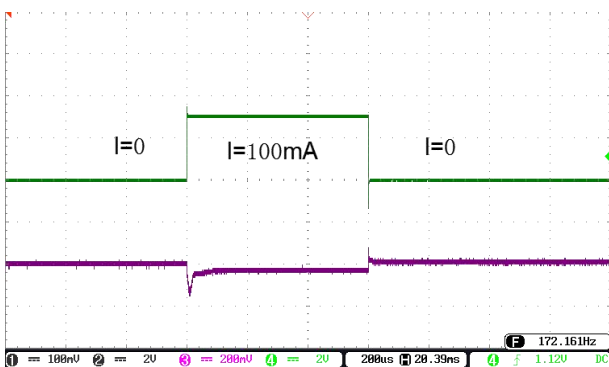
Vin Response(Vout VS. Vin)



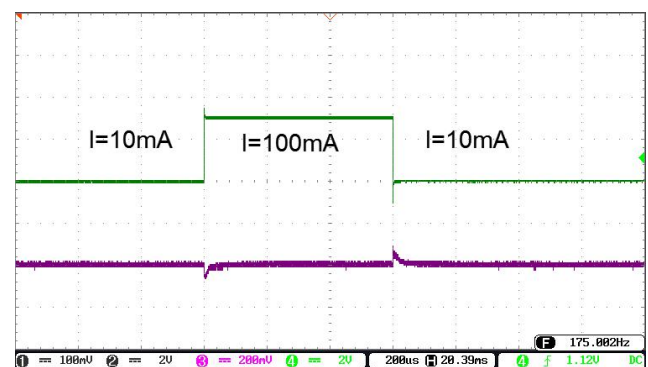
Vin Response(Vout VS. Vin)



Load Response(Vout VS. Iload)

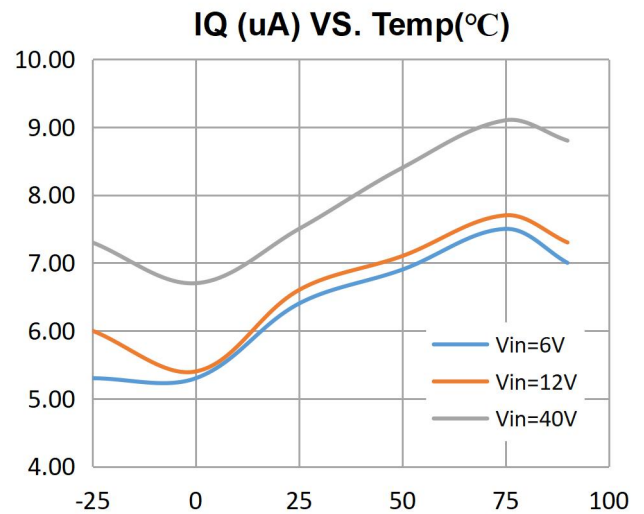
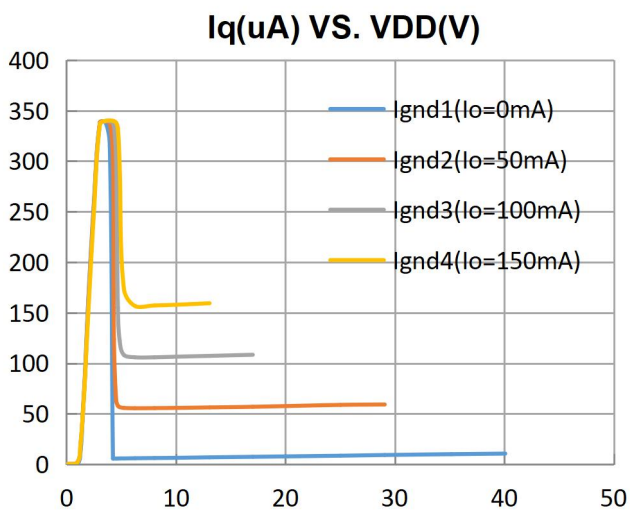
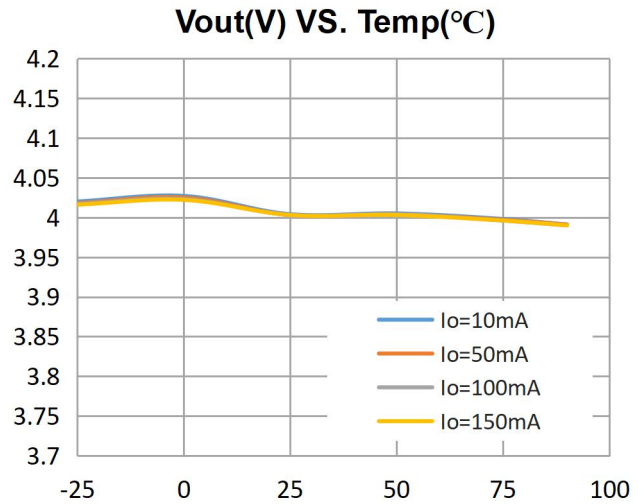
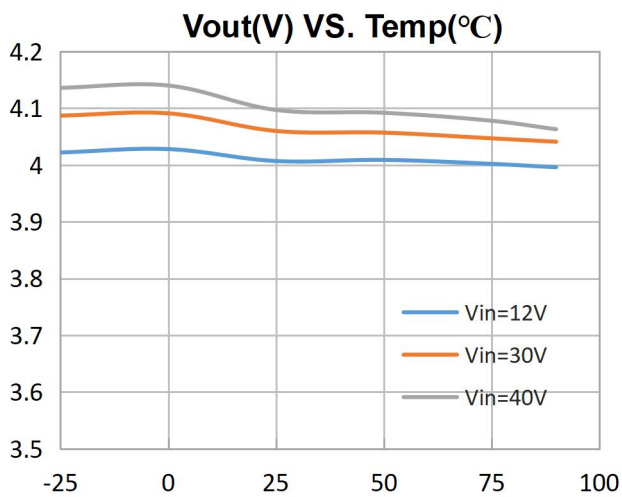
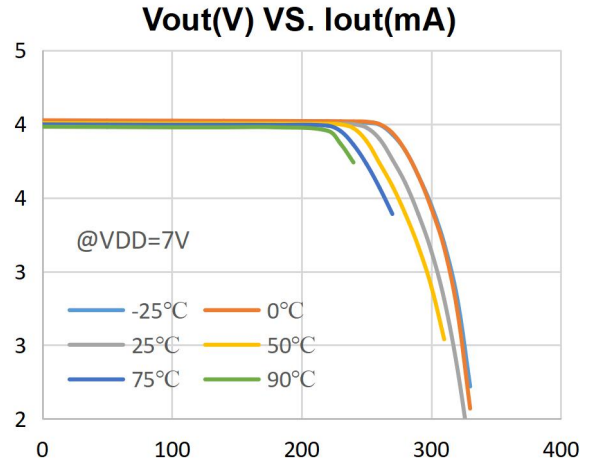
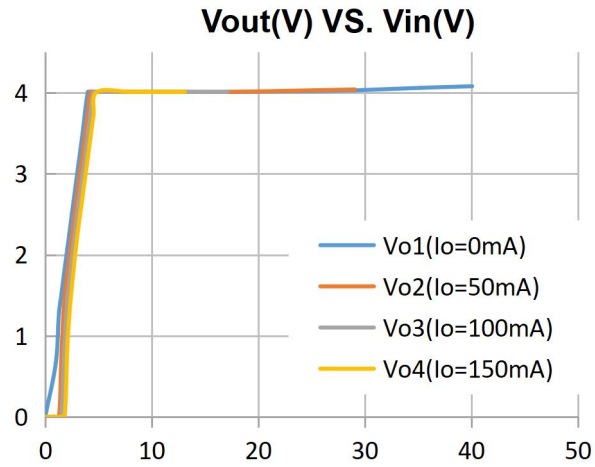


Load Response(Vout VS. Iload)

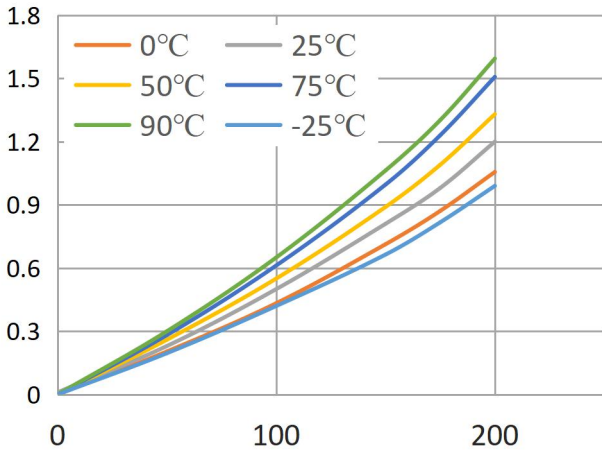


■ 典型参数 (AL8840)

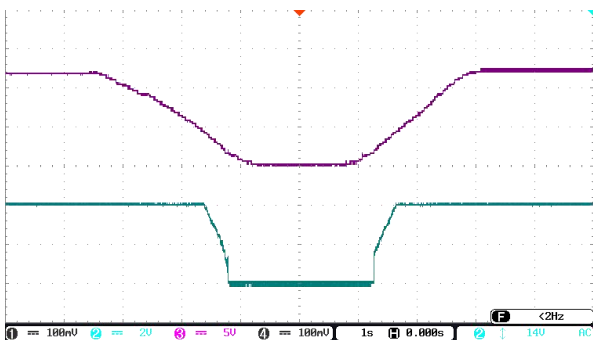
测试条件: TA=25° C, VIN=12V, CL=10uF, 除非另有说明。



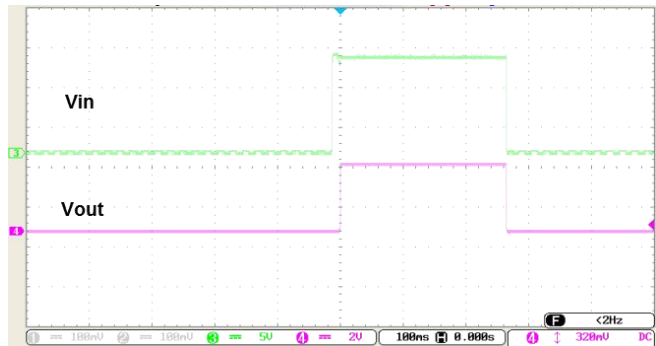
Dropout Voltage(V) VS. Iout(mA)



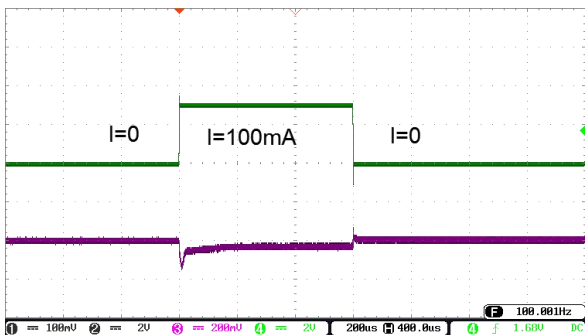
Vin Response(Vout VS. Vin)



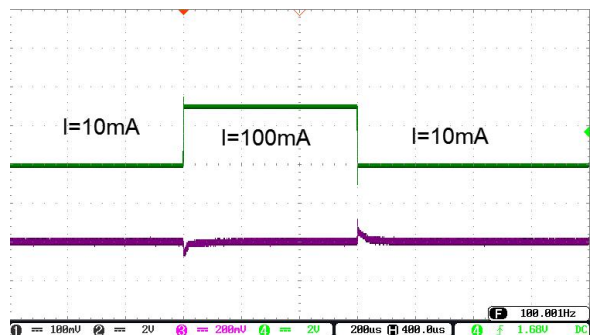
Vin Response(Vout VS. Vin)



Load Response(Vout VS. Iload)

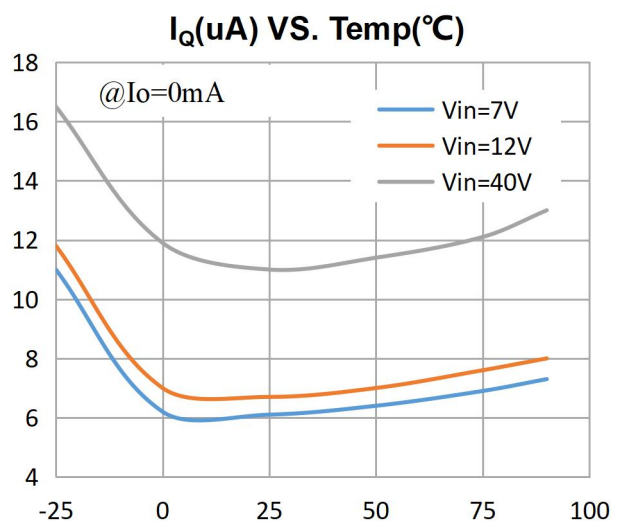
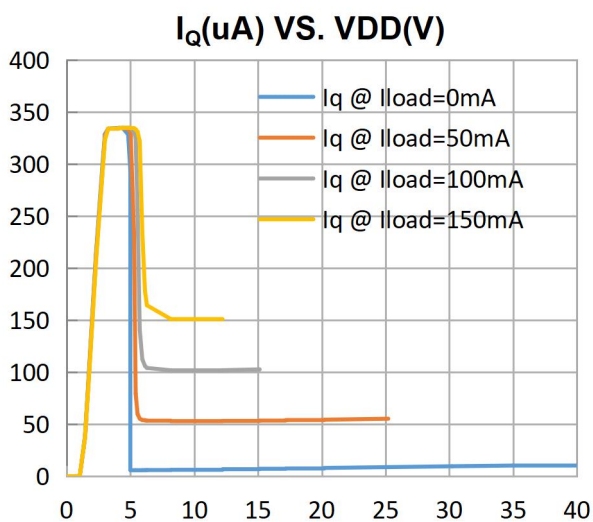
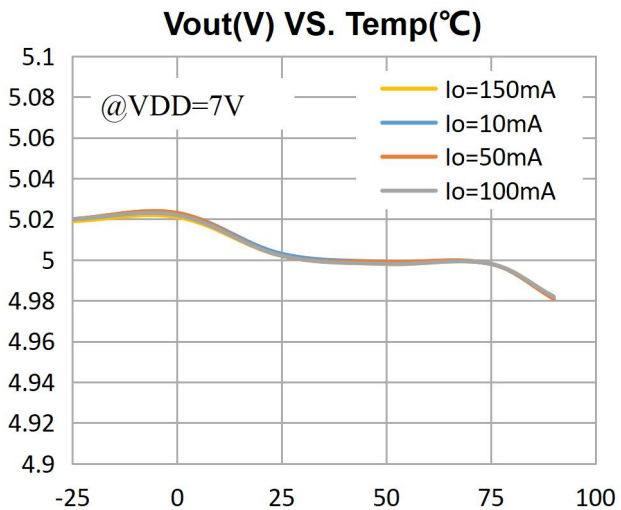
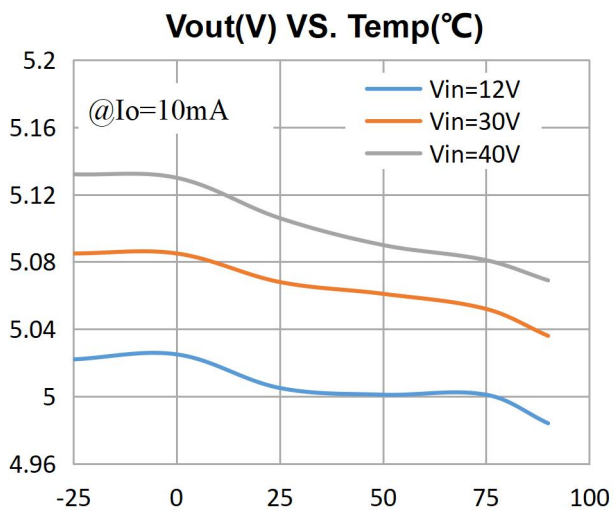
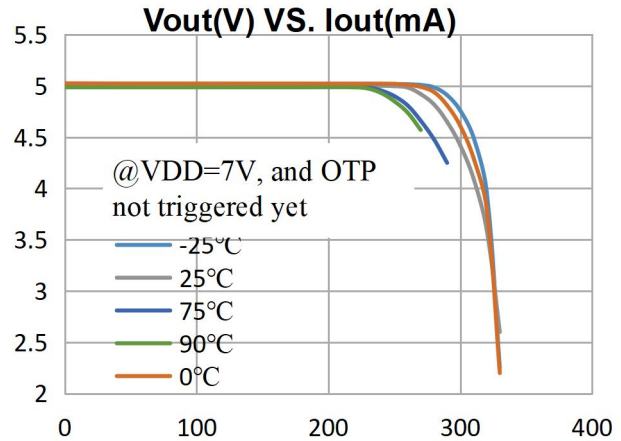
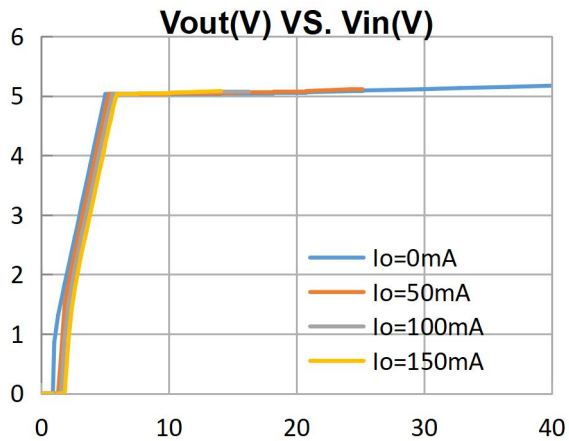


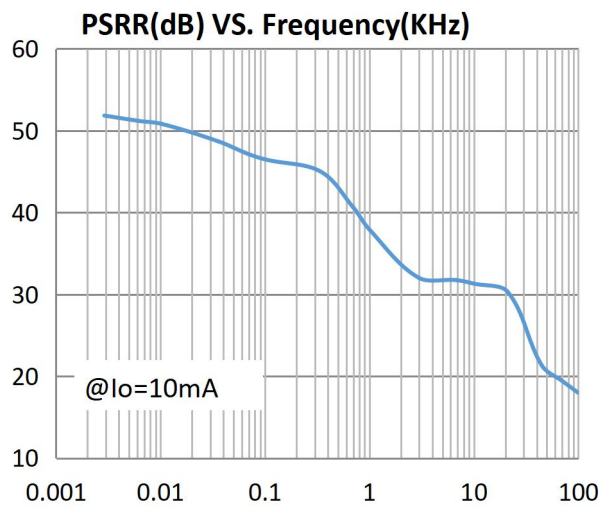
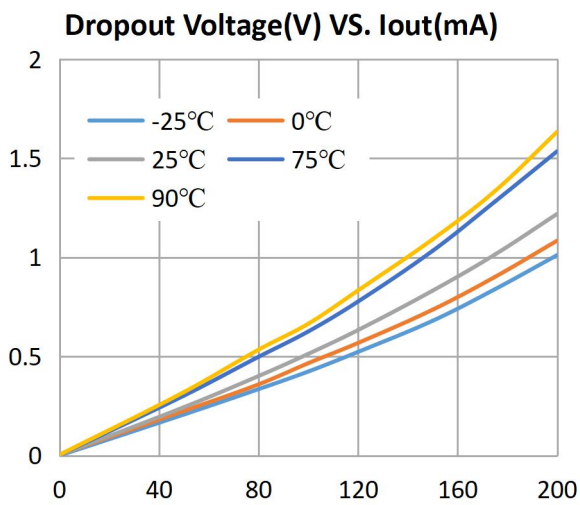
Load Response(Vout VS. Iload)



■ 典型参数 (AL8850)

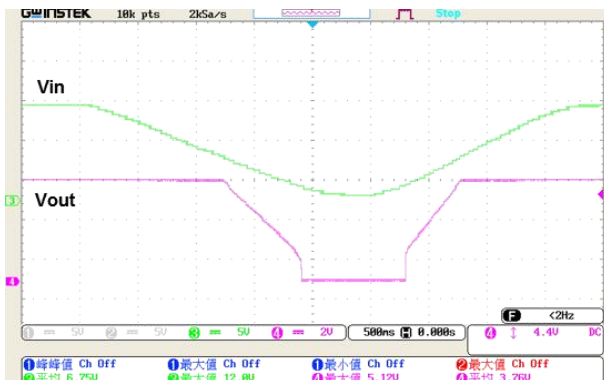
测试条件: TA=25°C, VIN=12V, CL=10uF, 除非另有说明。





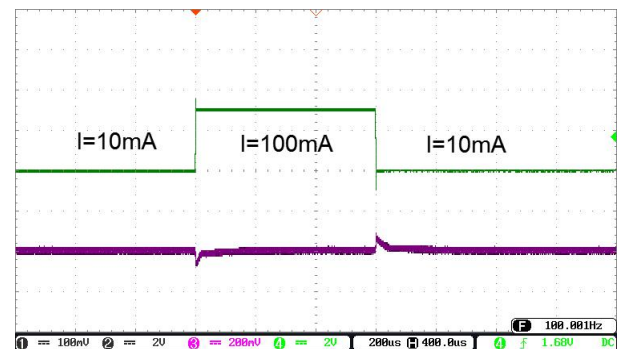
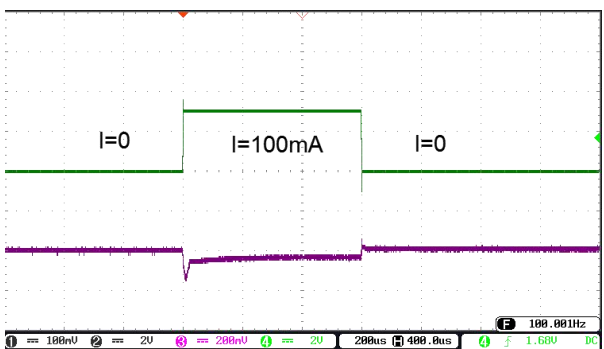
Vin Response(Vout VS. Vin)

Vin Response(Vout VS. Vin)



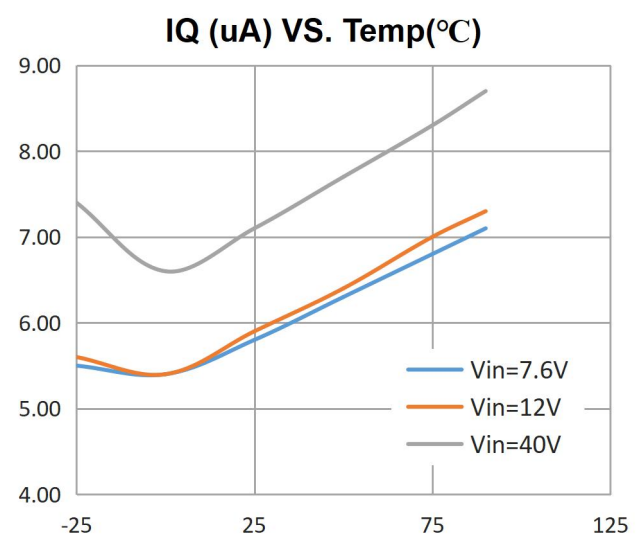
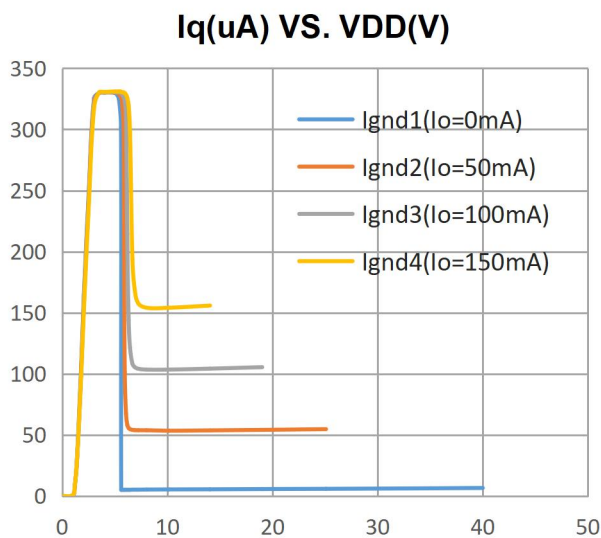
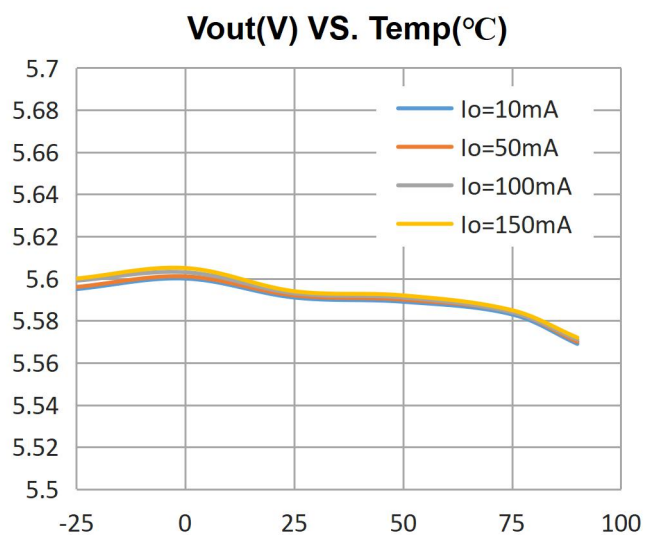
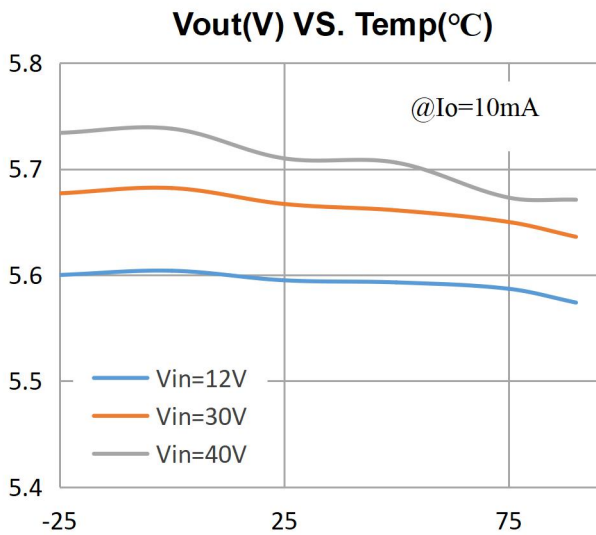
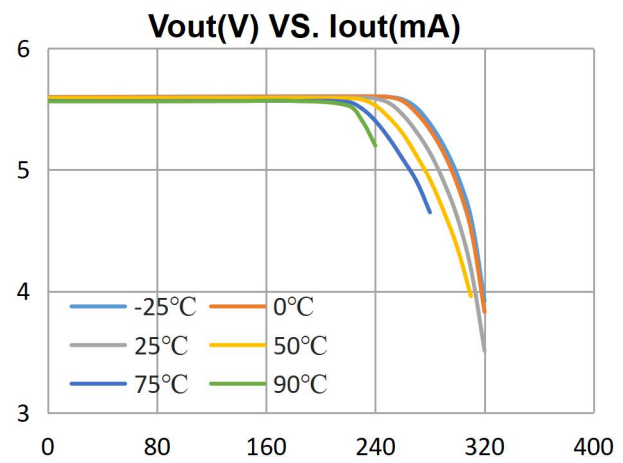
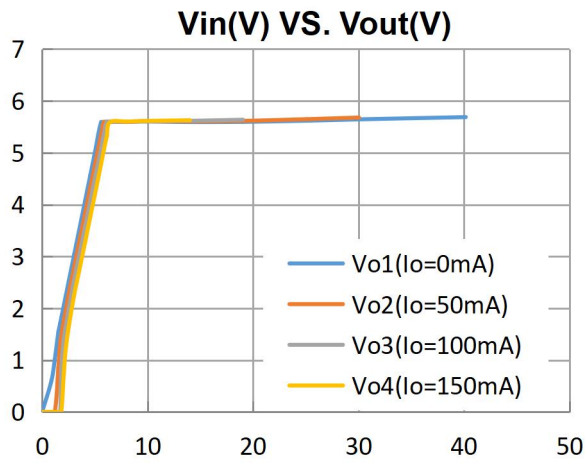
Load Response(Vout VS. Iload)

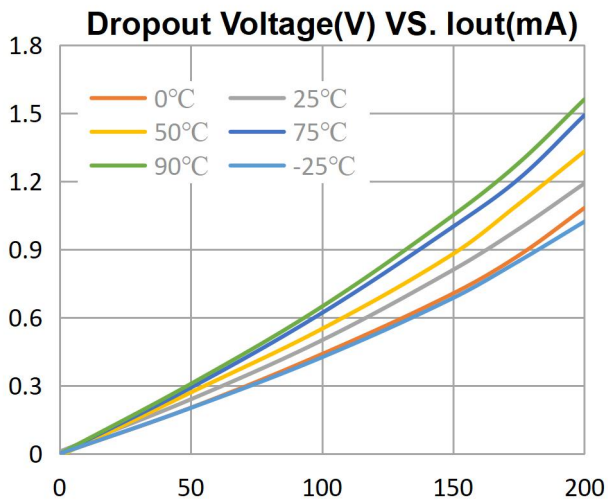
Load Response(Vout VS. Iload)



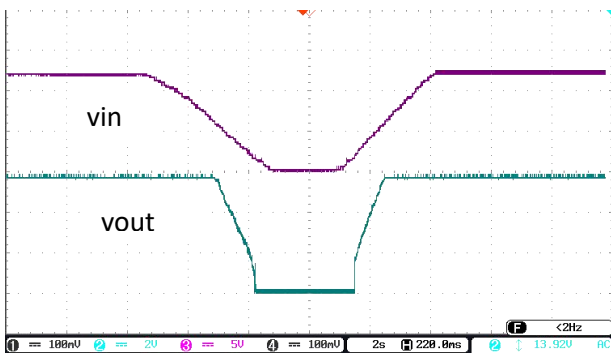
■ 典型参数 (AL8856)

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

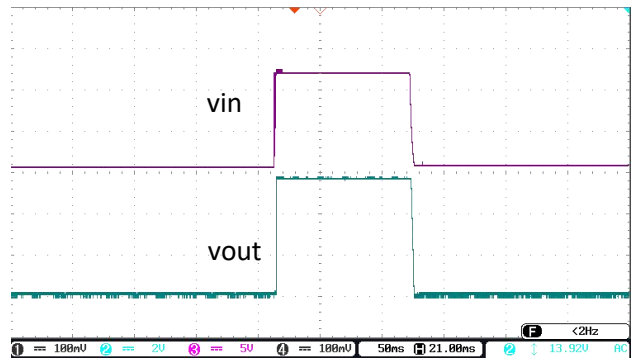




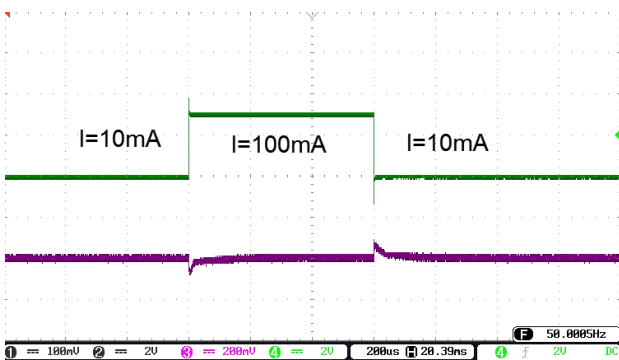
Vin Response(Vout VS. Vin)



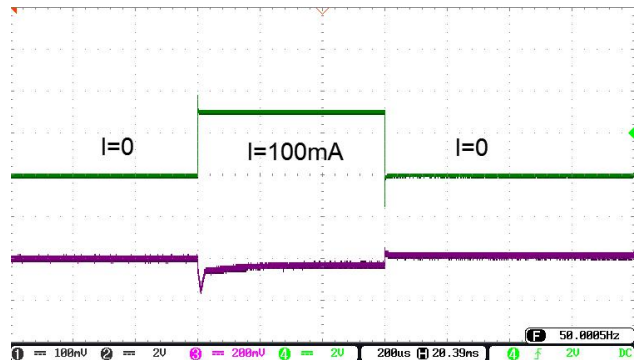
Vin Response(Vout VS. Vin)



Load Response(Vout VS. Iload)

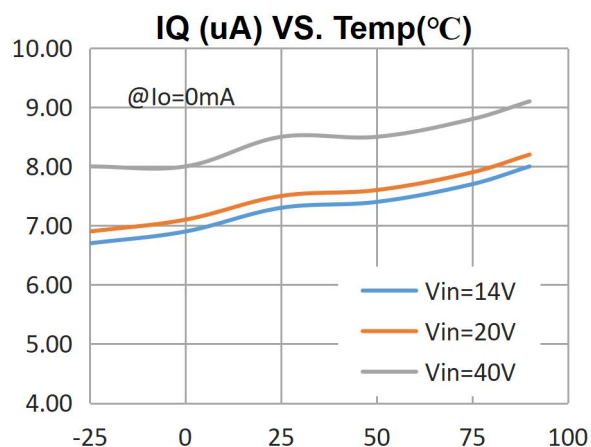
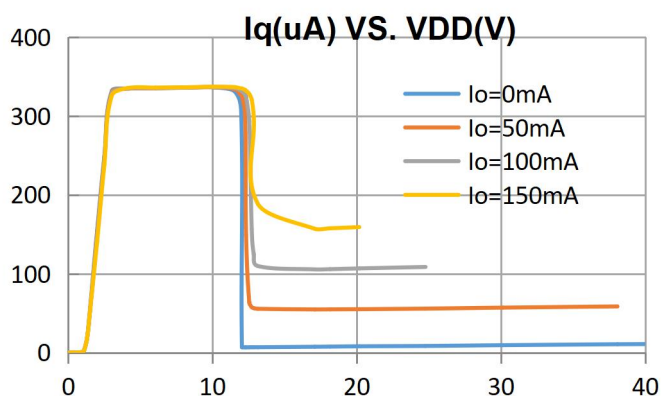
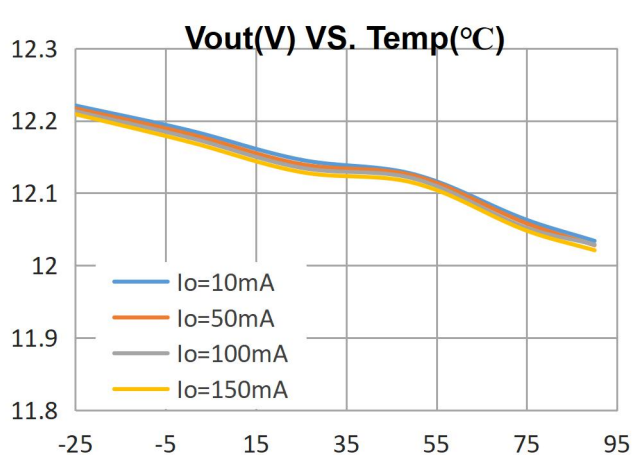
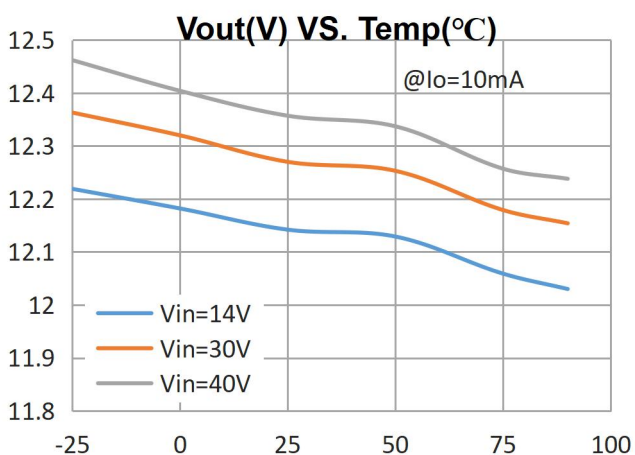
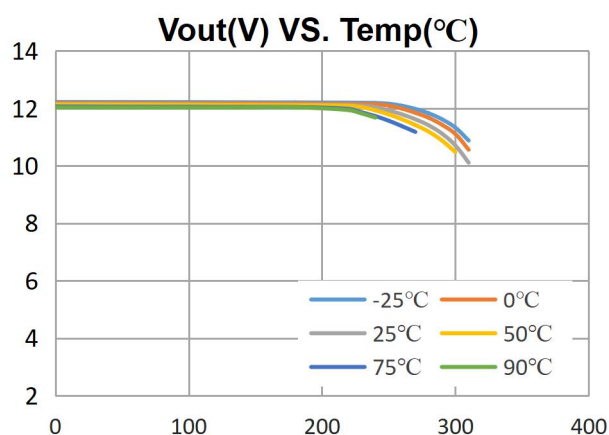
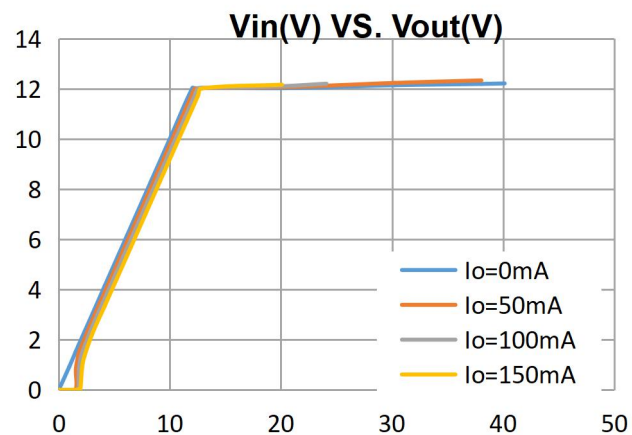


Load Response(Vout VS. Iload)

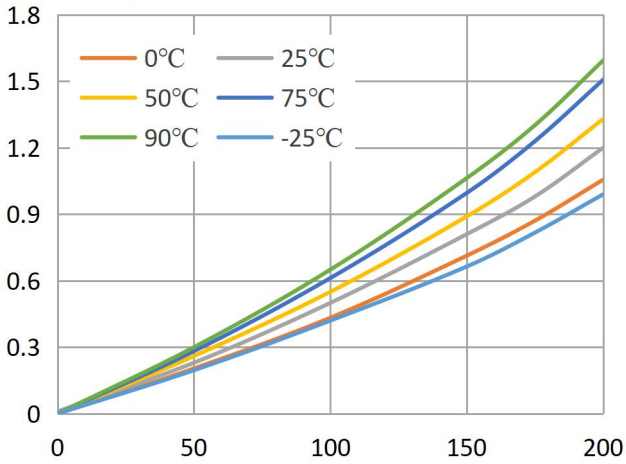


■ 典型参数 (AL8812)

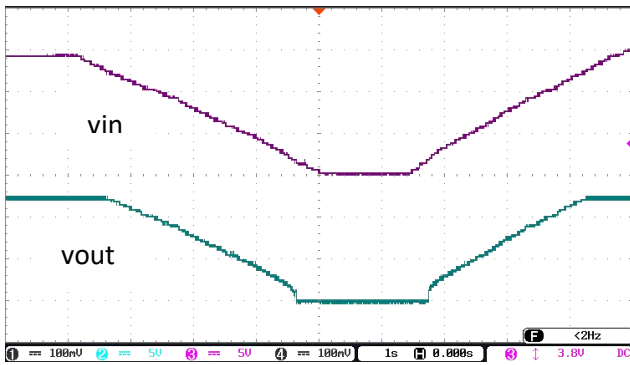
测试条件: TA=25°C, VIN=14V, CL=10uF, 除非另有说明。



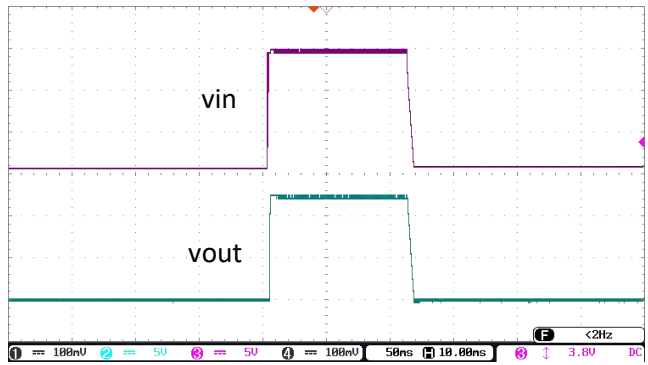
Dropout Voltage(V) VS. Iout(mA)



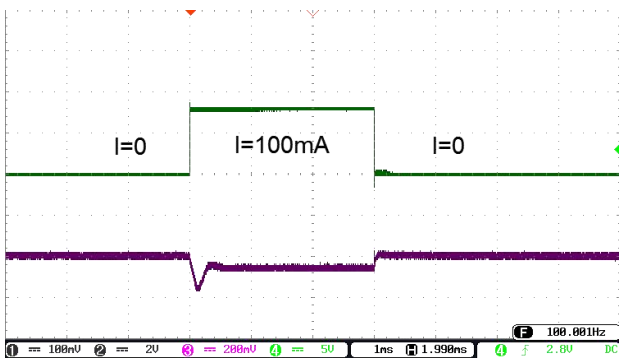
Vin Response(Vout VS. Vin)



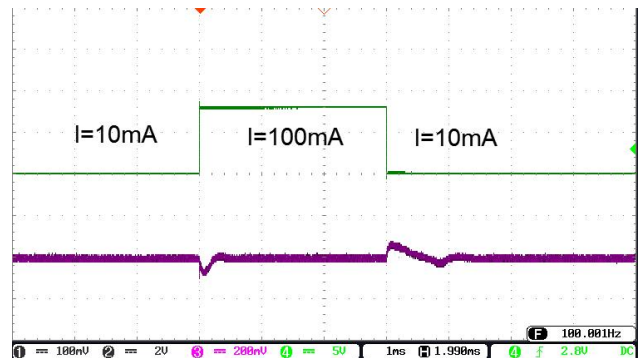
Vin Response(Vout VS. Vin)



Load Response(Vout VS. Iload)

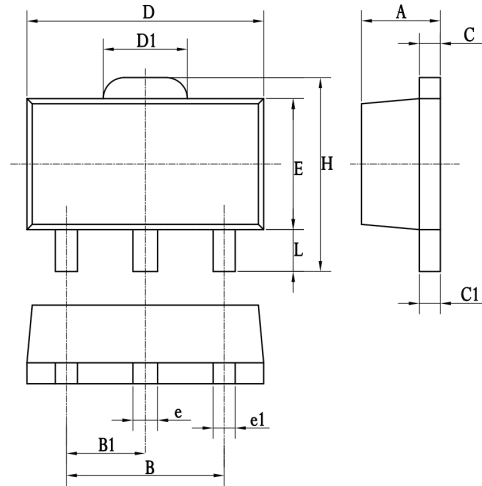


Load Response(Vout VS. Iload)



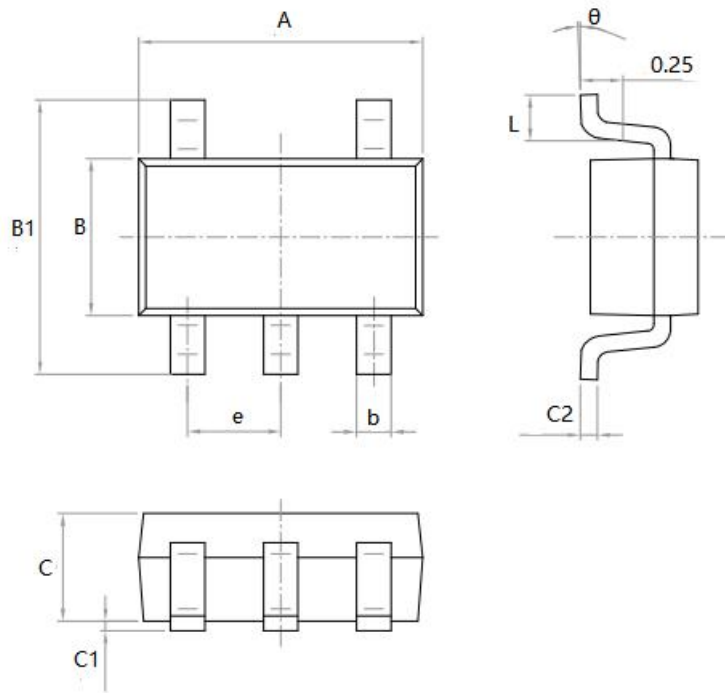
■ 封装信息

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	-	-	-	-	-

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符号	毫米			英寸		
	最小	标准	最大	最小	标准	最大
A	2.82		3.02	-	-	-
e		0.95 (bsc)		-	-	-
b	0.28		0.45	-	-	-
B	0.50		0.70	-	-	-
B1	2.60		3.00	-	-	-
C	1.05		1.15	-	-	-
C1	0.03		0.15	-	-	-
C2	0.12		0.23	-	-	-
L	0.35		0.55	-	-	-
θ	0°		8°	-	-	-