35V，1.6µA   High Driver LDO Regulator

■   Features

• Low Power Consumption 1.6µA (TYP.)

• Low voltage drop

• Low temperature coefficient

• High input voltage (Up to 35V)

• High input current:250mA

• Low power consumption

• Ceramic compatible

•SOT89 & SOT23 package

■   Poduct information

• Package type

| FS5350BSI	SOT23
FS5350BSJ	SOT23-3
FS5350BSK	SOT23-5
FS5350BSM	SOT89-3
FS5350BTE	TO92

• Output Voltage Accuracy

FS5350B ±2%

■   General Description

The FS5350B series is a set of three-terminal high current low voltage regulator implemented in CMOS technology. They can deliver 150mA output current and allow an input voltage as high as 35V. They are available with several fixed output voltages ranging 3.0V 3.3V 3.6V 5.0V. CMOS technology ensures low voltage drop and low quiescent current

Although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain variable voltages and currents.

■   Typical Application Circuit
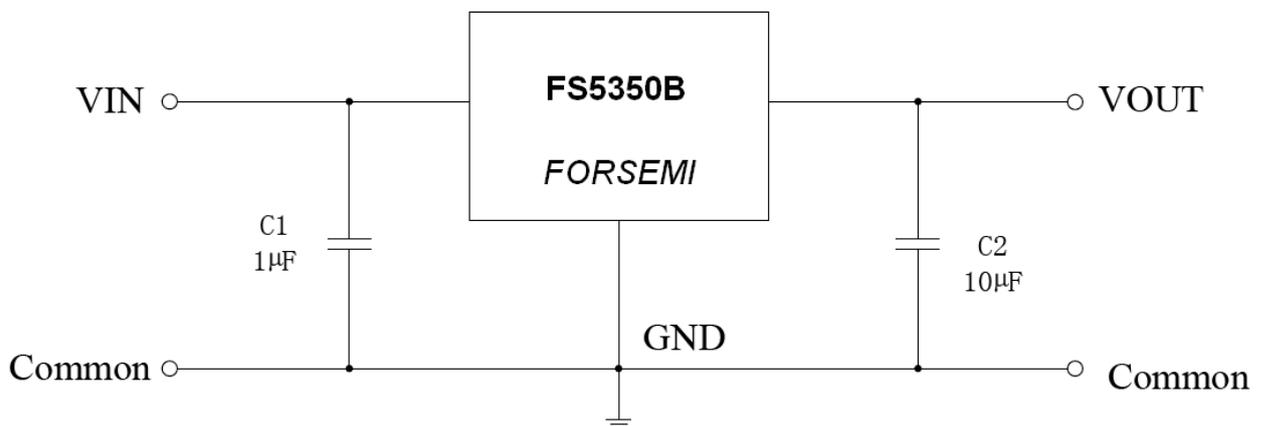
■ **Package Information**

SOT89-3   SOT23/SOT23-3   T092
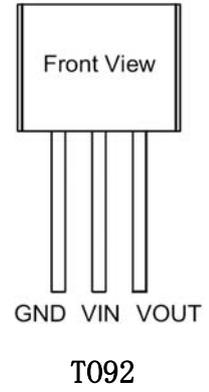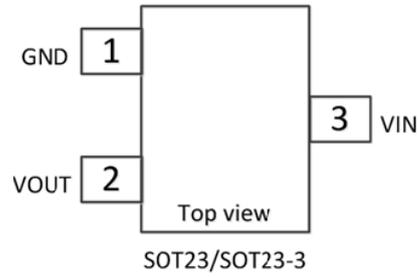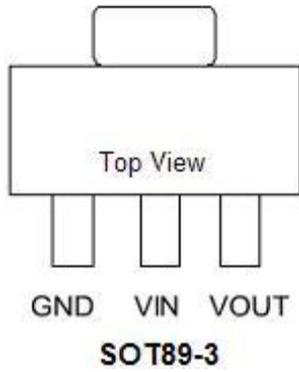
■ 方框图
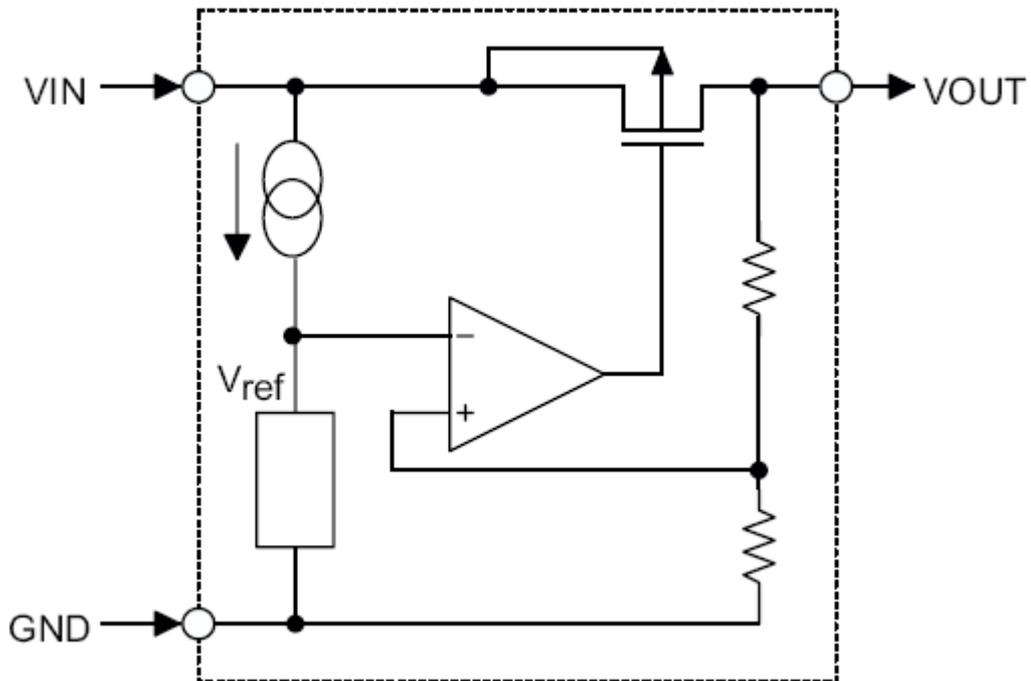
■ **Absolute Maximum Ratings**

Parameter	conditions	Min	Max	Units
Voltage	VIN　to GND	-0.3	40	V
	VOUT to GND	-0.3	6	V
	VOUT to VIN	-35	0.3	V
Current	Peak Current	Innel		
Temperature.	Operating Temperature	-40	85	℃
	Storage Temperature	-40	150	℃
	Junction Temperature	-	150	℃
Thermal resistance	SOT23	350		℃/W
	SOT23-3	350		℃/W
	SOT23-5	260		℃/W
	SOT89-3	165		℃/W
	TO92	180		℃/W
Power Consumption	SOT23	350		mW
	SOT23-3	350		mW
	SOT23-5	480		mW
	SOT89-3	750		mW
	TO92	690		mW
ESD Rating	HBM	-	1	kV
	MM	-	100	V

Note:

These are stress ratings only. Stresses exceeding the range specified under　Absolute Maximum Ratings　may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

■ **Electrical Characteristics**（TA=25°C，C$_{IN}$=1uF，V$_{IN}$=V$_{OUTNOM}$+1V，C$_{OUT}$=10μF）

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
VIN	Input Voltage		3		35	V
IGND	Current Consumption	No load		1.6	2.0	μA
VOUT(FS5350B)	Output Voltage	IOUT=10mA	-2%		2%	VOUT
IOUT	Output Current		200	250	—	mA
VDROP	Dropout*1 (FS5350B-5V0)	IOUT=10mA △VOUT= - VOUTNOM*2%	—	30	50	mV
		IOUT=100mA △VOUT= - VOUTNOM*2%	—	300	400	mV
		IOUT=200mA △VOUT= - VOUTNOM*2%	—	600	750	mV
	Dropout (FS5350B-3V3)	IOUT=10mA △VOUT= - VOUTNOM*2%	—	30	50	mV
		IOUT=100mA △VOUT= - VOUTNOM*2%	—	300	400	mV
		IOUT=200mA △VOUT= - VOUTNOM*2%	—	600	750	mV
△VOUT	Load Regulation	1mA≤IOUT≤100mA	—	20	50	mV
△VOUTx100/ △VINx VOUT	Line Regulation	IOUT=1mA, VIN=(VOUTNOM+1V) to 30V	—	—	0.2	%/V
ILIMIT	Current limited Protection	VIN=(VOUTNOM+1V) to 30V RLOAD=VOUTNOM/1A		450		mA
TSHDN	Temperature Protection			125		℃
TCVOUT	Temperature Coefficient	IOUT=10mA -40℃≤TAMB≤100℃		±100		ppm/℃

注：*1 Dropout

1. V_{drop} = { V_{IN1}（note3）- V_{OUT1}（note2）}

2. V_{out1} = A voltage equal to 98% of the output voltage whenever an amply stabilized I_{out}（$V_{out(T)}$+1.0V）is input.

3. V_{IN1} = The input voltage when V_{out} = V_{OUT1}

PD（MOSFET）=(VIN-VOUT)*IOUT

PD(TOTAL)=PD(MOSFET)+VIN*IGND

TJ=PD(max)*θJA+TA

θJA is Thermal resistance，TA is environment Temperature

■ **Typical Performance Characteristics**

Output Voltage vs. Output Current

FS5350B-3V3   VIN=4.3V

FS5350B-5V0   VIN=6.0V
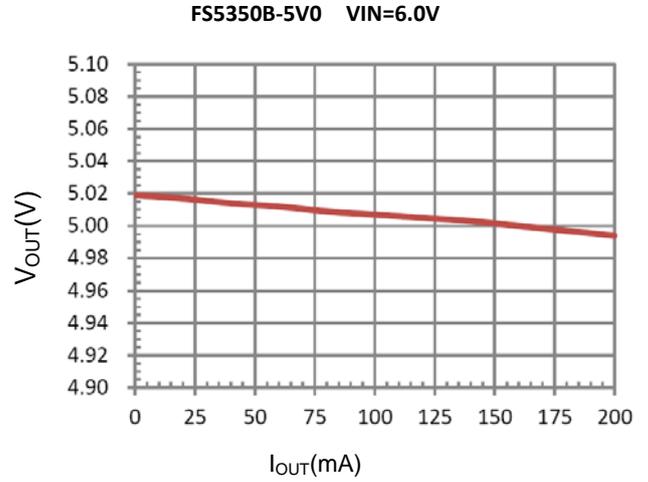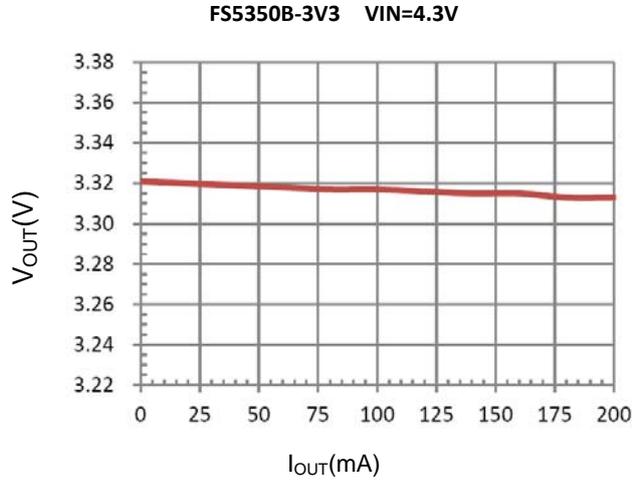
Output Voltage vs. Input Voltage

FS5350B-3V3   IOUT=1mA

FS5350B-5V0   IOUT=1mA
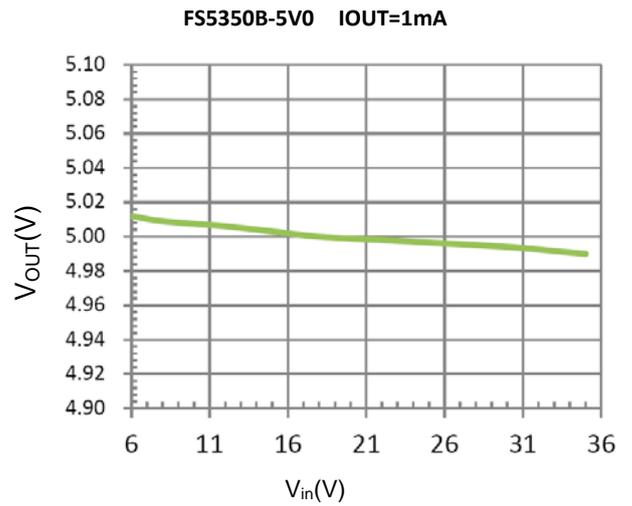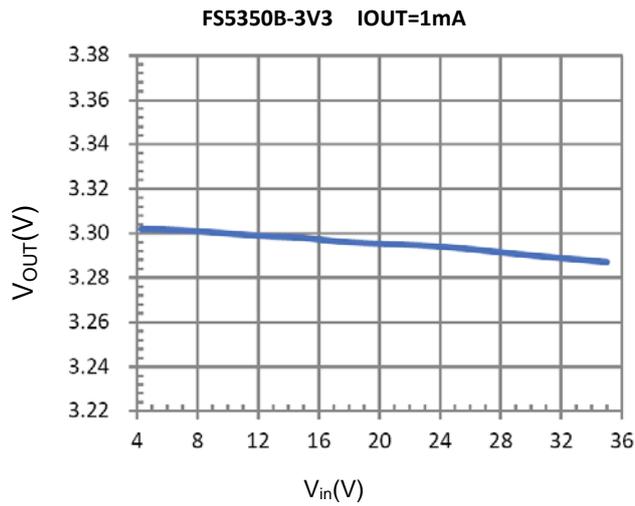
Output Voltage vs. Ambient Temperature

FS5350B-3V3   IOUT=10mA

FS5350B-5V0   IOUT=10mA
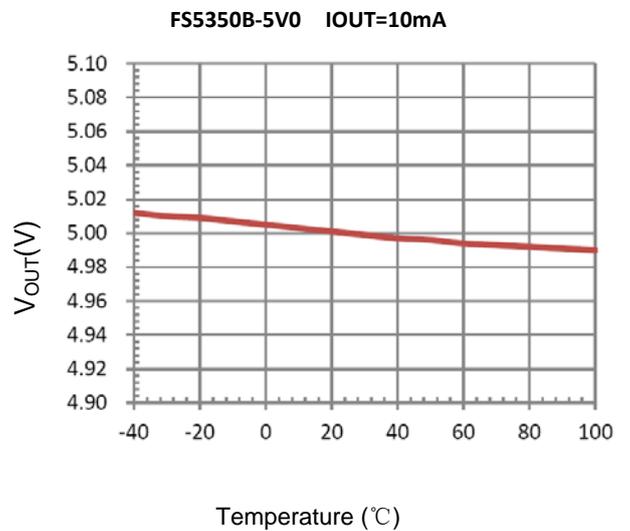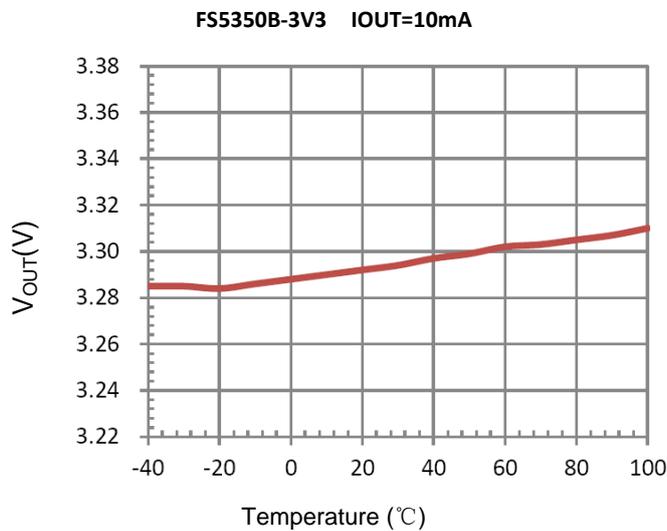
Supply Current vs. Input Voltage

FS5350B-3V3   no load

FS5350B-5V0   no load
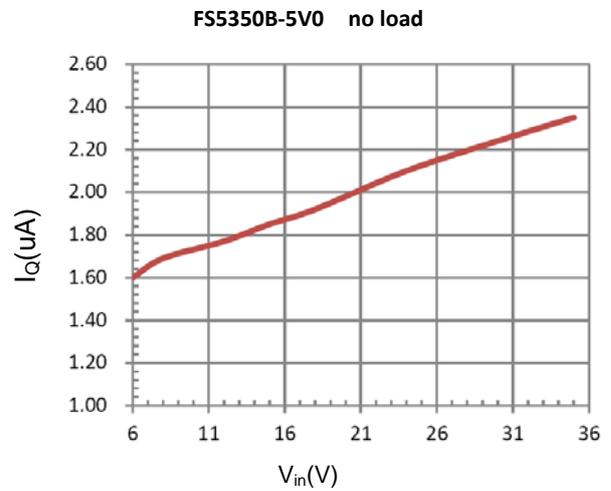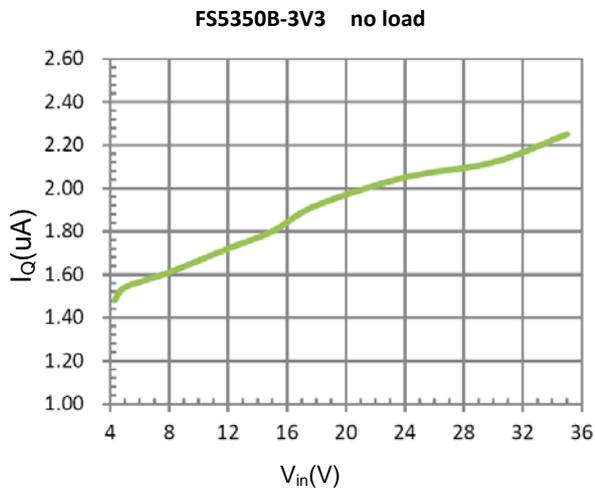
GND Current vs.output current

FS5350B-3V3   VIN=4.3V

FS5350B-5V0 VIN=6.0V
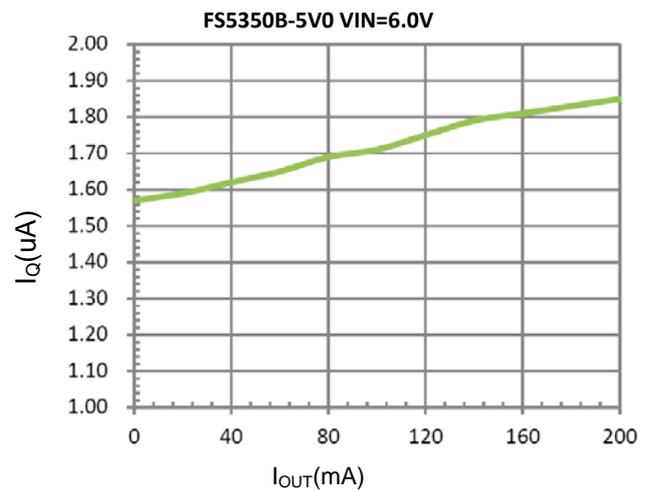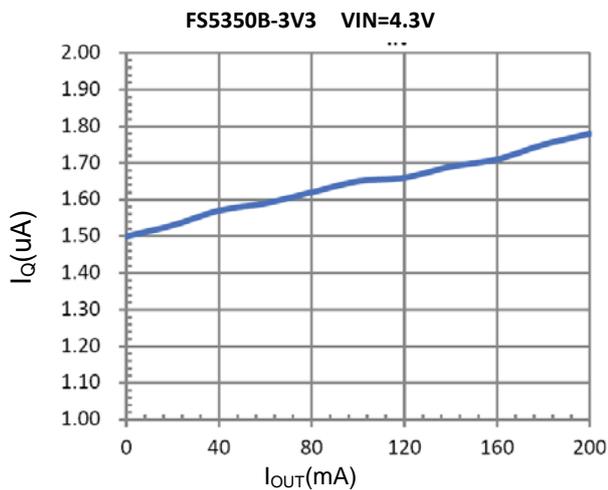
Supply Current vs. Ambient Temperature

FS5350B-3V3   no load



FS5350B-5V0   no load
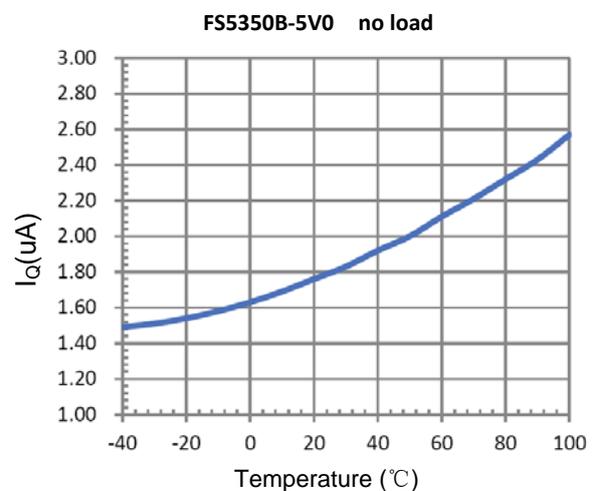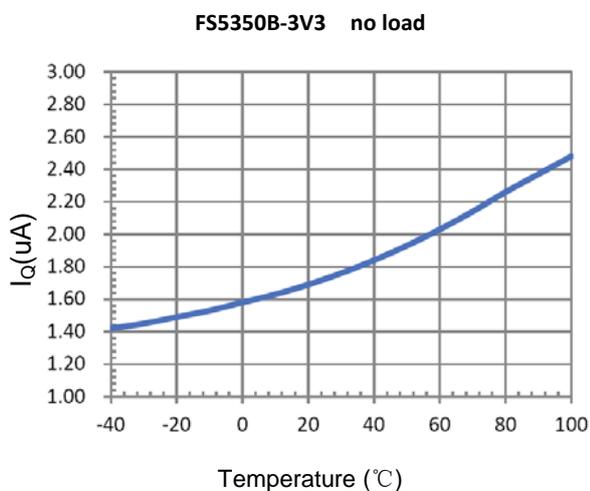
The start up Response

**No laod　COUT=10uF**
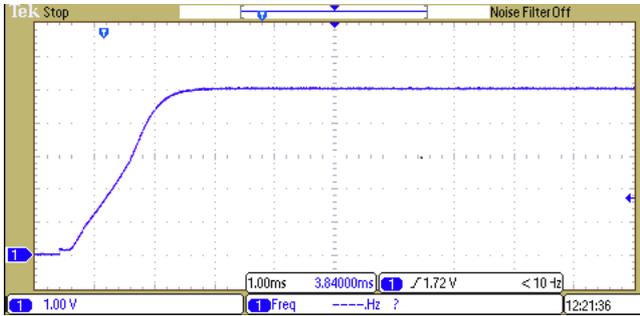
**Iload=30mA start up　COUT=10uF**
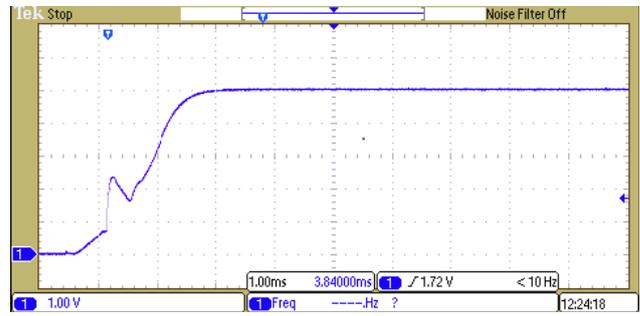
### Load Transient Response

VIN=12.0V, COUT=10uF, IOUT=10mA to 200mA
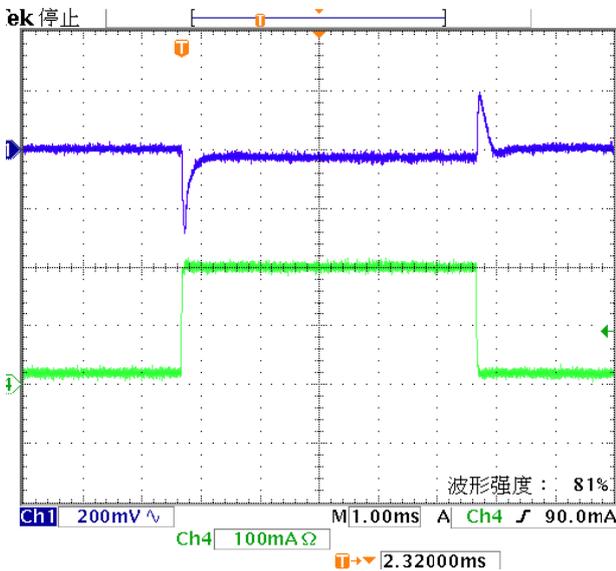
Input Transient Response

VIN=5.0V to 12.0V, COUT=10uF, IOUT=1mA
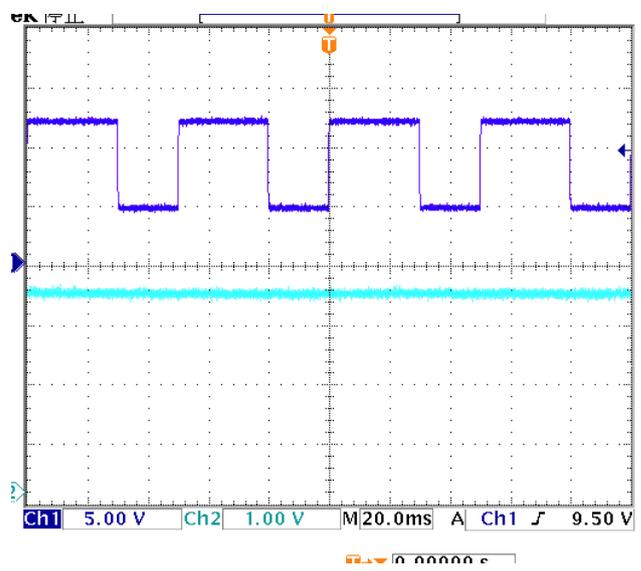
Short Protection & release

VIN=25V，Short Protection occur

VIN=25V，Short Protection release