

## SC810, 芯片式开环霍尔电流传感器, SO8 封装 SC810, Fully Integrated Current Sensor IC

*说明: 因芯片性能提升, 此版本 SC810RFT/SC810FFT 不再升级, 仅供老客户生产支持,  
以 SC810DFT/SC810FFT 相应支持新客户*

### 概述/ Description

SC810 是上海兴工微电子 (Senko Micro) 开发的基于开环霍尔原理的芯片式电流传感器, 可用于交流或直流电流测量, 应用于工业, 商业和通讯系统。芯片内部由一块精密的低失调线性霍尔电路和与电路距离相当近的铜导体电流路径构成。当路径中注入交流或直流电流时, 电路中的霍尔元件对电流产生的磁场进行感应, 经过信号处理后输出与电流呈线性关系的电压信号。

原边导体的引脚 (从1, 2到3, 4) 在电气上与副边信号引脚 (从5到8) 实现了隔离, 这使得SC810可以应用于需要电气隔离的应用场合, 替代线性光耦和其他隔离器件。

The Senko Micro's SC810 provides economical and precise solutions for AC or DC current sensing in industrial, commercial, and communications systems. The device package allows for easy implementation by the customer. The device consists of a precise, low-offset, linear Hall circuit with a copper conduction path located near the surface of the die. Applied current flowing through this copper conduction path generates a magnetic field which the Hall IC converts into a proportional voltage. A precise, proportional voltage is provided by the low-offset, chopper-stabilized Linear Hall IC, which is programmed for accuracy after packaging.

The terminals of the conductive path (from pin1 and 2 to pin 3 and 4) are electrically isolated from the signal leads (pins 5 through 8). This allows the SC810 to be used in applications requiring electrical isolation without the use of opto-isolators or other costly isolation techniques.

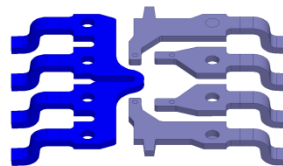
### 特性/ Features

- 开环霍尔原理  
Open Loop Hall principle
- 非接触式交直流测量  
Contactless AC/DC measurement
- 可选参考电压模式: 固定2.5v, 0.5Vcc, 0.1Vcc  
Selected Reference voltage mode: Fixed 2.5V,  
0.5Vcc, 0.1Vcc,
- 极低的原边阻抗 (1.2mΩ)  
1.2mΩ internal conductor resistance
- 原副边1分钟隔离耐压3.5kv  
3.5 kV RMS (1min AC test) minimum isolation  
voltage from pins 1-4 to pins 5-8
- SOP8封装  
Small footprint, low-profile SOP8-SC package
- 单电源供电: 5v  
Single Power Supply: 5V

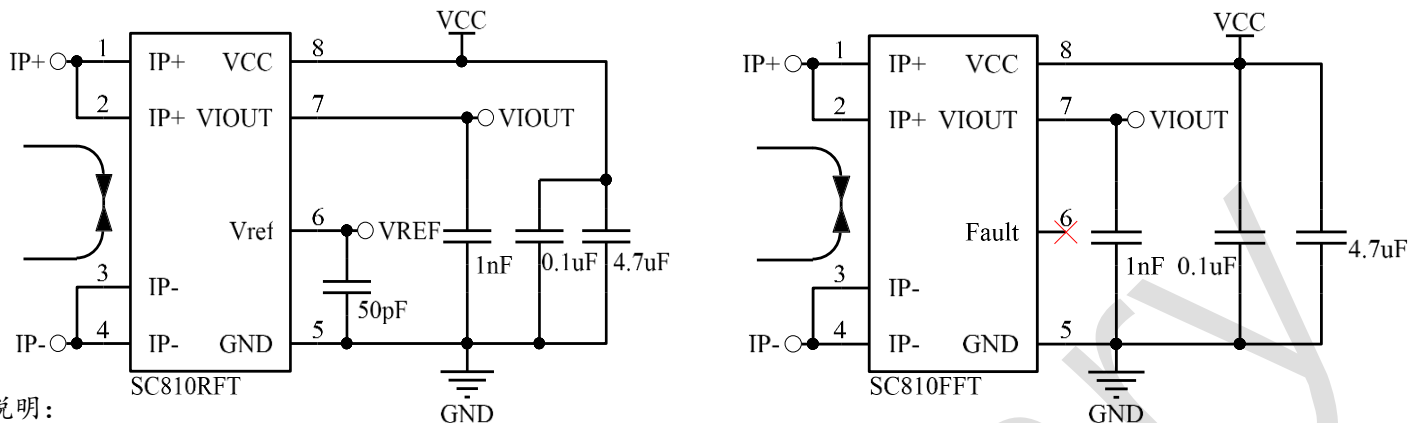
### 顶视图/Top view



### 芯片内部框架:



应用电路图/ Typical Application



说明:

- 4.7uF 电源滤波电容**必须**使用以保证性能  
4.7uF bypass is **MUST** have to guarantee performance;
- SC810RFT 适用于需要使用参考脚 VREF 的场合, 其余场合推荐使用 SC810FFT  
SC810RFT is fit for the application which need VREF, otherwise, use SC810FFT please.
- Pin6 of SC810FFT can be NC or to capacitor or to GND.  
SC810FFT 的第 6 脚可以悬空, 也可以接地, 也可以对大地接电容。

订购信息/ Order information

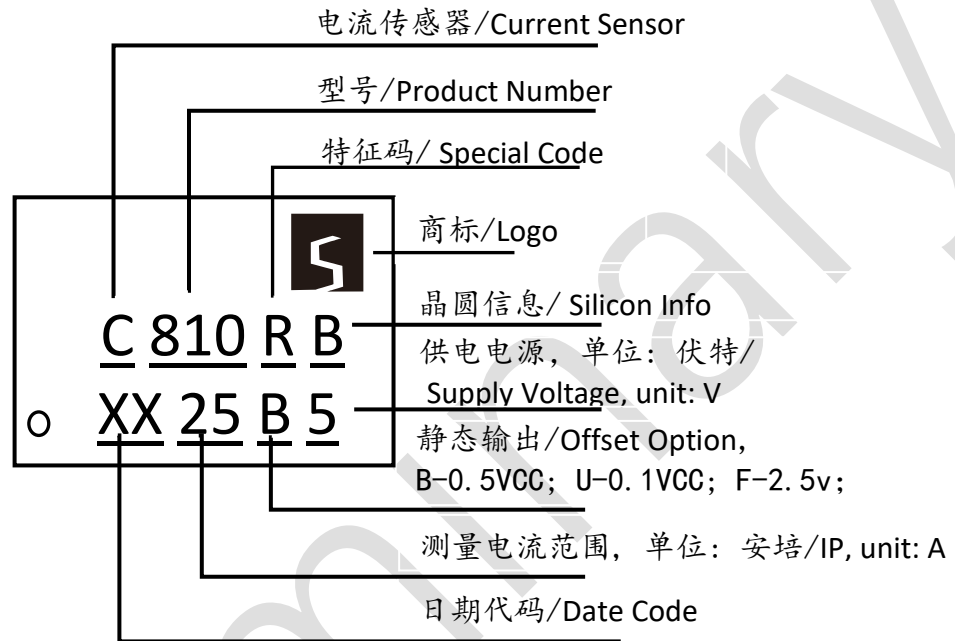
型号 Part Number	特征码 Special Code	温度范围 Temp Range	包装方式 Packing	测量电 流范围 IP(A)	Vout @IP=0A	灵敏度Sens @ VCC=5V (mV/A)	产品状态/ Product Status *2			
<sup>s</sup> SC810RFT-05B5	R	F (-40~125°C)	T (3000pcs/ 卷)	±10	B5(0.5Vcc)	200	Sample			
SC810RFT-10B5				±11	B5(0.5Vcc)	185	MP			
SC810RFT-20B5				±20	B5(0.5Vcc)	100	MP			
SC810RFT-20F5*1				±20	F5(2.5V)	100	MP			
<sup>s</sup> SC810RFT-25F5*1				±25	F5(2.5V)	80	Sample			
SC810RFT-30F5				±30	F5(2.5V)	66	MP			
SC810RFT-30B5				±30	B5(0.5Vcc)	66	MP			
SC810RFT-30U5				30	U5(0.1Vcc)	133	Sample			
<sup>s</sup> SC810RFT-40B5				±40	B5(0.5Vcc)	50	Sample			
SC810RFT-50B5				±50	B5(0.5Vcc)	40	MP			
<sup>s</sup> SC810RFT-50F5*1				±50	F5(2.5V)	40	Sample			
<sup>s</sup> SC810FFT-10B5				F	F (-40~125°C)	T (3000pcs/ 卷)	±10	B5(0.5Vcc)	200	Sample
<sup>s</sup> SC810FFT-20B5							±20	B5(0.5Vcc)	100	Sample
<sup>s</sup> SC810FFT-25B5							±25	B5(0.5Vcc)	80	Sample
<sup>s</sup> SC810FFT-30B5	±30	B5(0.5Vcc)	66				Sample			
<sup>s</sup> SC810FFT-40B5	±40	B5(0.5Vcc)	50				Sample			
<sup>s</sup> SC810FFT-50B5	±50	B5(0.5Vcc)	40				Sample			
<sup>s</sup> SC810FFT-20U5	20	U5(0.1Vcc)	200				Sample			
<sup>s</sup> SC810FFT-30U5	30	U5(0.1Vcc)	133				Sample			
<sup>s</sup> SC810FFT-40U5	40	U5(0.1Vcc)	100				Sample			

\*1 F5 : 电源为 4.5v~5.5v, IP=0A 情况下, VIOUT=2.5v, F5 Vout=2.5v with IP=0A, when power supply from 4.5v~5.5v

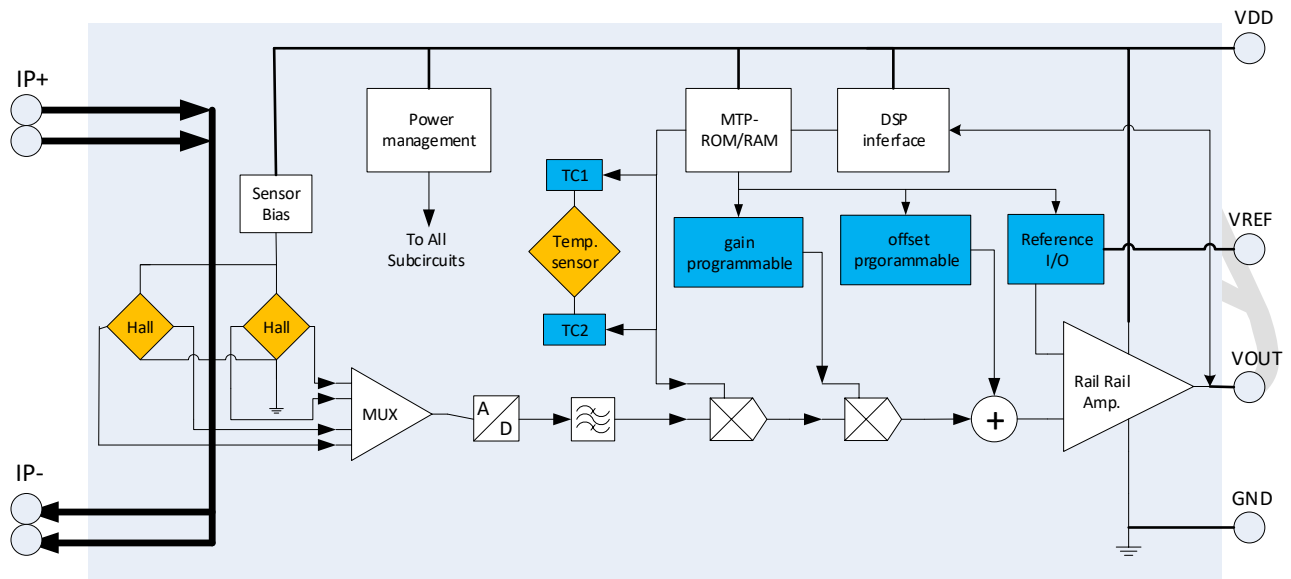
\*2 MP=量产, Sample=样品, 量产状态下的所有产品由自动化设备打标, 样品状态下的产品由手工打标。

MP = mass production, All products in MP status will be marked by automation machine as Mark Description, All products in sample status will be marked by manually machine as Mark Description.

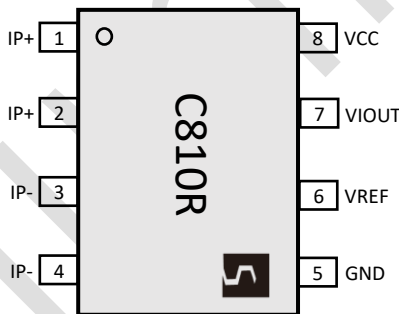
丝印描述/Mark Description



功能框图/Functional Block Diagram(SC810RFT)

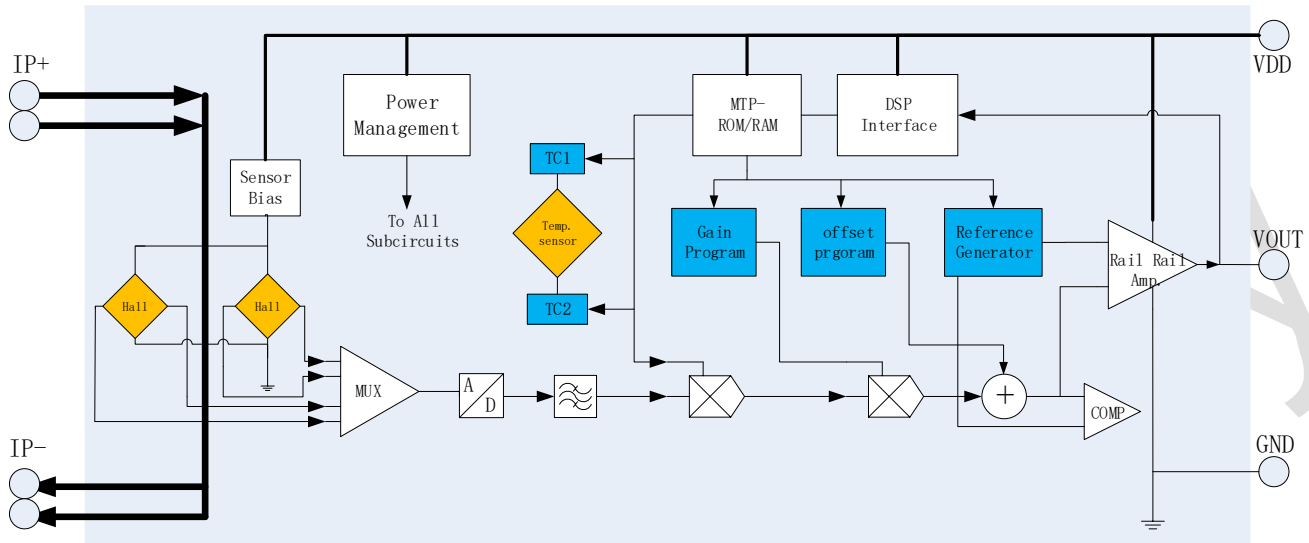


管脚分配/Pin Configuration (SC810RFT)

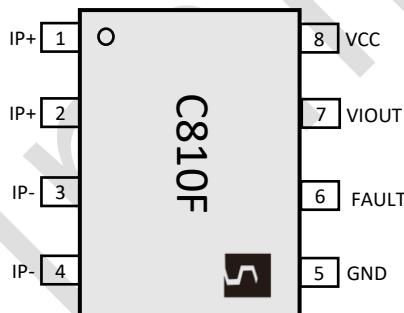


管脚号码 /Number	名称/Name	描述/ Description
1,2	IP+	原边电流输入正/Terminals for current being sampled;
3,4	IP-	原边电流输入负/ Terminals for current being sampled;
5	GND	地/ Signal Ground terminal
6	VREF	输出模式: 静态电压输出, 始终等于原边为0时的输出电压/NC or Output: Equal to Vout@IP=0A. 输入模式: 内部可以被修改为0.6v-2.5v Input: Can be revised to 0.6 v-2.5v
7	VIOUT	模拟输出脚/ Analog output signal
8	VCC	电源引脚/ Device power supply terminal

功能框图/Functional Block Diagram(SC810FFT)



管脚分配/Pin Configuration (SC810FFT)



管脚号码	名称	描述
1,2	IP+	原边电流输入正/Terminals for current being sampled;
3,4	IP-	原边电流输入负/Terminals for current being sampled;
5	GND	地/ Signal Ground terminal
6	FAULT	待定/ TBD
7	VIOUT	模拟输出脚/ Analog output signal
8	VCC	电源引脚/ Device power supply terminal

### 绝对最大额定值/Absolute Maximum Ratings

绝对最大额定值是器件工作的限值，如果超过该值可能造成器件损坏。经常性工作在该值范围之外可能会影响器件可靠性。

Absolute maximum ratings are limiting values to be applied individually, and beyond which the serviceability of the circuit may be impaired. Functional operability is not necessarily implied. Exposure to absolute maximum rating conditions for an extended period of time may affect device reliability.

符号/ Characteristic	指标/ Symbol	备注/ Notes	额定值/ Rating	单位/ Unit
V <sub>CC</sub>	电源电压/ Supply voltage		6.0	V
V <sub>RCC</sub>	反向电源电压/Reverse Supply Voltage		-0.1	V
V <sub>IOUT</sub>	输出电压/Output voltage		6.0	V
V <sub>RIOUT</sub>	反向输出电压/Reverse Output Voltage		-0.1	V
I <sub>IOUT(Source)</sub>	输出脚拉电流/Output Current Source		20	mA
I <sub>IOUT(Sink)</sub>	输出脚灌电流/Output Current Sink		20	mA
T <sub>A</sub>	环境温度范围/Nominal Operating Ambient Temperature	Range F	-40~125	°C
T <sub>J(max)</sub>	最大结温/Maximum Junction Temperature		165	°C
T <sub>stg</sub>	存储温度/Storage Temperature			°C

### 常规工作参数/Common operating Characteristics

注意：除特别备注外，全温度范围T<sub>A</sub>=-40°C ~ 125°C, C<sub>Bypass</sub>=4.7uF, C<sub>Load</sub>=1.5nF, V<sub>CC</sub>=5V,

Note: Over full range of T<sub>A</sub>=-40°C ~ 125°C, C<sub>Bypass</sub>=4.7uF, C<sub>Load</sub>=1.5nF, V<sub>CC</sub>=5V, unless otherwise specified.

参数 Parameter	符号 Symbol	测试条件 Test Condition	最小 值 Min	典型 值 Typ	最大 值 Max	单位 Units
电源电压/Supply Voltage	V <sub>CC</sub>	Operating	4.5	5	5.5	V
供电电流/Supply Current	I <sub>CC</sub>	V <sub>CC</sub> = 5.0 V, output open		9	15	mA
V <sub>out</sub> 外接电容范围/ Output Capacitance Load	C <sub>LOAD</sub>	V <sub>IOUT</sub> to GND		1.5	3	nF
V <sub>out</sub> 外接电阻范围/ Output Resistive Load	R <sub>LOAD</sub>	V <sub>IOUT</sub> to GND	0.17			kΩ
原边导体阻抗/ Primary Conductor Resistance	R <sub>PRIMARY</sub>	T <sub>A</sub> = 25°C		1.2	1.8	mΩ
响应时间(R型) / Response Time (Code R)	t <sub>r</sub>	I <sub>P</sub> = I <sub>P(max)</sub> , T <sub>A</sub> = 25°C, C <sub>OUT</sub> = 1nF		3		μS
响应时间(F型)/ Response Time (Code F)				3.5		μS
带宽/Frequency Bandwidth	f	-3 Db, T <sub>A</sub> =25°C; I <sub>P</sub> =10 A peak-to-peak				kHz
上电时间/Power-On Time	T <sub>PO</sub>	Output reaches 90% of steady-state level, T <sub>J</sub> = 25°C, 20 A present		100	500	μS
内部滤波阻抗/ Internal Filter Resistance	R <sub>F(INT)</sub>			1.7		KΩ
电源旁路电容/ Power supply bypass capacitor	C <sub>bypass</sub>	Normal operating	2.2	4.7		μF
V <sub>ref</sub> 外接电容范围/ V <sub>ref</sub> capacitance load(Output)	C <sub>REF</sub>			0	100	pF
V <sub>ref</sub> 外接输入范围(仅限于R型)/ Reference input voltage (Only for Code R)	V <sub>ref</sub>		0.7		2.6	V
V <sub>ref</sub> 拉电流能力(仅限于R型)/ V <sub>REF</sub> Source Current(Only for Code R)	V <sub>ref_Isou</sub> rce	V <sub>ref</sub> shorted to GND.		71		μA

Vref灌电流能力(仅限于R型)/ VREF Sink Current(Only for Code R)	Vref_Isin k	Vref shorted to VCC		14.4		mA
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### 隔离参数/Insulation coordination

参数/Parameter	符号 Symbol	值 Value	单位 Unit	备注/Comment
1分钟隔离耐压测试(50Hz) / RMS voltage for AC insulation test, 50Hz, 1min	V <sub>iso</sub>	3500	V	According to UL60950-1
冲击耐受电压 1.2/50us / Impulse withstand voltage 1.2/50us	V <sub>imp</sub>	6000	V	According to UL60950-1
电气间隙 / Clearance distance	D <sub>cl</sub>	3.8~4.0	mm	
爬电距离 / Creepage distance	D <sub>cp</sub>	3.8~4.0	mm	
漏电起痕指数 / Comparative tracking index	CTI	600	V	

### SC810RFT-25B5 性能指标/ Individual Performance Characteristics

注意：除非特殊说明，以下为全温度范围  $T_A = -40^{\circ}\text{C} \sim 125^{\circ}\text{C}$ ,  $C_{\text{Bypass}} = 4.7\mu\text{f}$ ,  $C_{\text{Load}} = 1.5\text{nF}$ ,  $V_{\text{CC}} = 5\text{V}$  测试结果。

Note: Over full range of  $T_A = -40^{\circ}\text{C} \sim 125^{\circ}\text{C}$ ,  $C_{\text{Bypass}} = 4.7\mu\text{f}$ ,  $C_{\text{Load}} = 1.5\text{nF}$ ,  $V_{\text{CC}} = 5\text{V}$ , unless otherwise specified.

参数 Parameter	符号 Symbol	测试条件/Test Conditions	最小值 Min	典型值 Typ <sup>[1]</sup>	最大值 Max	单位 Units
<b>额定值/NOMINAL PERFORMANCE</b>						
量程范围/ Optimized Accuracy Range	$I_{\text{Pr}}$		-25		25	A
VIOUT @ 0A	$V_{\text{Oq}}$	$I_{\text{P}} = 0\text{A}$ , $T_A = 25^{\circ}\text{C}$		$0.5V_{\text{CC}}$		V
灵敏度/Sensitivity	Sens	Over full of $T_A = 25^{\circ}\text{C}$		80		mV/A
<b>精度指标/ACCURACY PERFORMANCE</b>						
总误差/Total Output Error <sup>[2]</sup>	$E_{\text{TOT}}$	$I_{\text{P}} = \pm 25\text{A}$ , $T_A = 25^{\circ}\text{C}$		$\pm 4.6$		%
		$I_{\text{P}} = \pm 25\text{A}$ , $T_A = 25^{\circ}\text{C} \sim 125^{\circ}\text{C}$ , output filtered		$\pm 8.1$		%
		$I_{\text{P}} = \pm 25\text{A}$ , $T_A = -40^{\circ}\text{C} \sim 25^{\circ}\text{C}$ , output filtered		$\pm 4.8$		%
<b>总误差/TOTAL OUTPUT ERROR COMPONENTS: <math>E_{\text{TOT}} = E_{\text{SENS}} + 100 \times V_{\text{OE}} / (\text{Sens} \times I_{\text{P}})</math></b>						
灵敏度误差/Sensitivity Error	$E_{\text{SENS}}$	$I_{\text{P}} = \pm 25\text{A}$ , $T_A = 25^{\circ}\text{C}$		$\pm 4.3$		%
		$I_{\text{P}} = \pm 25\text{A}$ , $T_A = 25 \sim 125^{\circ}\text{C}$		$\pm 7.3$		%
		$I_{\text{P}} = \pm 25\text{A}$ , $T_A = -40 \sim 25^{\circ}\text{C}$		$\pm 4.1$		%
零点误差/Offset Voltage	$V_{\text{OE}}$	$I_{\text{P}} = 0\text{A}$ , $T_A = 25^{\circ}\text{C}$		$\pm 15$		mV
		$I_{\text{P}} = 0\text{A}$ , $T_A = 25 \sim 125^{\circ}\text{C}$		$\pm 35$		mV
		$I_{\text{P}} = 0\text{A}$ , $T_A = -40 \sim 25^{\circ}\text{C}$		$\pm 30$		mV
非线性度/Nonlinearity	$E_{\text{LIN}}$	Measured using full-scale and half-scale $I_{\text{P}}$		$\pm 0.9$		%
参考脚零点误差/ Zero Current Reference Offset Voltage	$V_{\text{ZCR(ofs)}}$	$T_A = -40 \sim 125^{\circ}\text{C}$		$\pm 35$		mV

[1] 典型值是 +/- 3 西格玛值，99.73% 的产品落在该范围内/ Typical values with +/- are 3 sigma values

[2] 峰值电流  $I_{\text{P}}$  的百分比值/ Percentage of  $I_{\text{P}}$ , with  $I_{\text{P}} = I_{\text{PR(max)}}$ .

### SC810FFT-25B5 性能指标/ Individual Performance Characteristics

注意：除非特殊说明，以下为全温度范围  $T_A = -40^{\circ}\text{C} \sim 125^{\circ}\text{C}$ ,  $C_{\text{Bypass}} = 4.7\mu\text{f}$ ,  $C_{\text{Load}} = 1.5\text{nF}$ ,  $V_{\text{CC}} = 5\text{V}$  测试结果。

Note: Over full range of  $T_A = -40^{\circ}\text{C} \sim 125^{\circ}\text{C}$ ,  $C_{\text{Bypass}} = 4.7\mu\text{f}$ ,  $C_{\text{Load}} = 1.5\text{nF}$ ,  $V_{\text{CC}} = 5\text{V}$ , unless otherwise specified.

参数 Parameter	符号 Symbol	测试条件/Test Conditions	最小值 Min	典型值 Typ <sup>[1]</sup>	最大值 Max	单位 Units
<b>额定值/NOMINAL PERFORMANCE</b>						
量程范围/ Optimized Accuracy Range	$I_{\text{Pr}}$		-25		25	A
VIOUT @ 0A	$V_{\text{Oq}}$	$I_{\text{P}} = 0\text{A}$ , $T_A = 25^{\circ}\text{C}$		$0.5V_{\text{CC}}$		V
灵敏度/Sensitivity	Sens	Over full of $T_A = 25^{\circ}\text{C}$		80		mV/A
<b>精度指标/ACCURACY PERFORMANCE</b>						
总误差/Total Output Error <sup>[2]</sup>	$E_{\text{TOT}}$	$I_{\text{P}} = \pm 25\text{A}$ , $T_A = 25^{\circ}\text{C}$		$\pm 4.5$		%
		$I_{\text{P}} = \pm 25\text{A}$ , $T_A = 25^{\circ}\text{C} \sim 125^{\circ}\text{C}$ , output filtered		$\pm 5$		%
		$I_{\text{P}} = \pm 25\text{A}$ , $T_A = -40^{\circ}\text{C} \sim 25^{\circ}\text{C}$ , output filtered		$\pm 5.5$		%
<b>总误差/TOTAL OUTPUT ERROR COMPONENTS: <math>E_{\text{TOT}} = E_{\text{SENS}} + 100 \times V_{\text{OE}} / (\text{Sens} \times I_{\text{P}})</math></b>						
灵敏度误差/Sensitivity Error	$E_{\text{SENS}}$	$I_{\text{P}} = \pm 25\text{A}$ , $T_A = 25^{\circ}\text{C}$		$\pm 4.2$		%
		$I_{\text{P}} = \pm 25\text{A}$ , $T_A = 25 \sim 125^{\circ}\text{C}$		$\pm 4$		%
		$I_{\text{P}} = \pm 25\text{A}$ , $T_A = -40 \sim 25^{\circ}\text{C}$		$\pm 4.7$		%
零点误差/Offset Voltage	$V_{\text{OE}}$	$I_{\text{P}} = 0\text{A}$ , $T_A = 25^{\circ}\text{C}$		$\pm 22$		mV
		$I_{\text{P}} = 0\text{A}$ , $T_A = 25 \sim 125^{\circ}\text{C}$		$\pm 19$		mV
		$I_{\text{P}} = 0\text{A}$ , $T_A = -40 \sim 25^{\circ}\text{C}$		$\pm 32$		mV
非线性度/Nonlinearity	$E_{\text{LIN}}$	Measured using full-scale and half-scale $I_{\text{P}}$		$\pm 0.9$		%

[1] 典型值是 +/- 3 西格玛值，99.73% 的产品落在该范围内/ Typical values with +/- are 3 sigma values

[2] 峰值电流  $I_{\text{P}}$  的百分比值/ Percentage of  $I_{\text{P}}$ , with  $I_{\text{P}} = I_{\text{PR(max)}}$ .



### SC810RFT-30B5 性能指标/ Individual Performance Characteristics

注意：除非特殊说明，以下为全温度范围  $T_A = -40^{\circ}\text{C} \sim 125^{\circ}\text{C}$ ,  $C_{\text{Bypass}} = 4.7\mu\text{f}$ ,  $C_{\text{Load}} = 1.5\text{nF}$ ,  $V_{\text{CC}} = 5\text{V}$  测试结果。

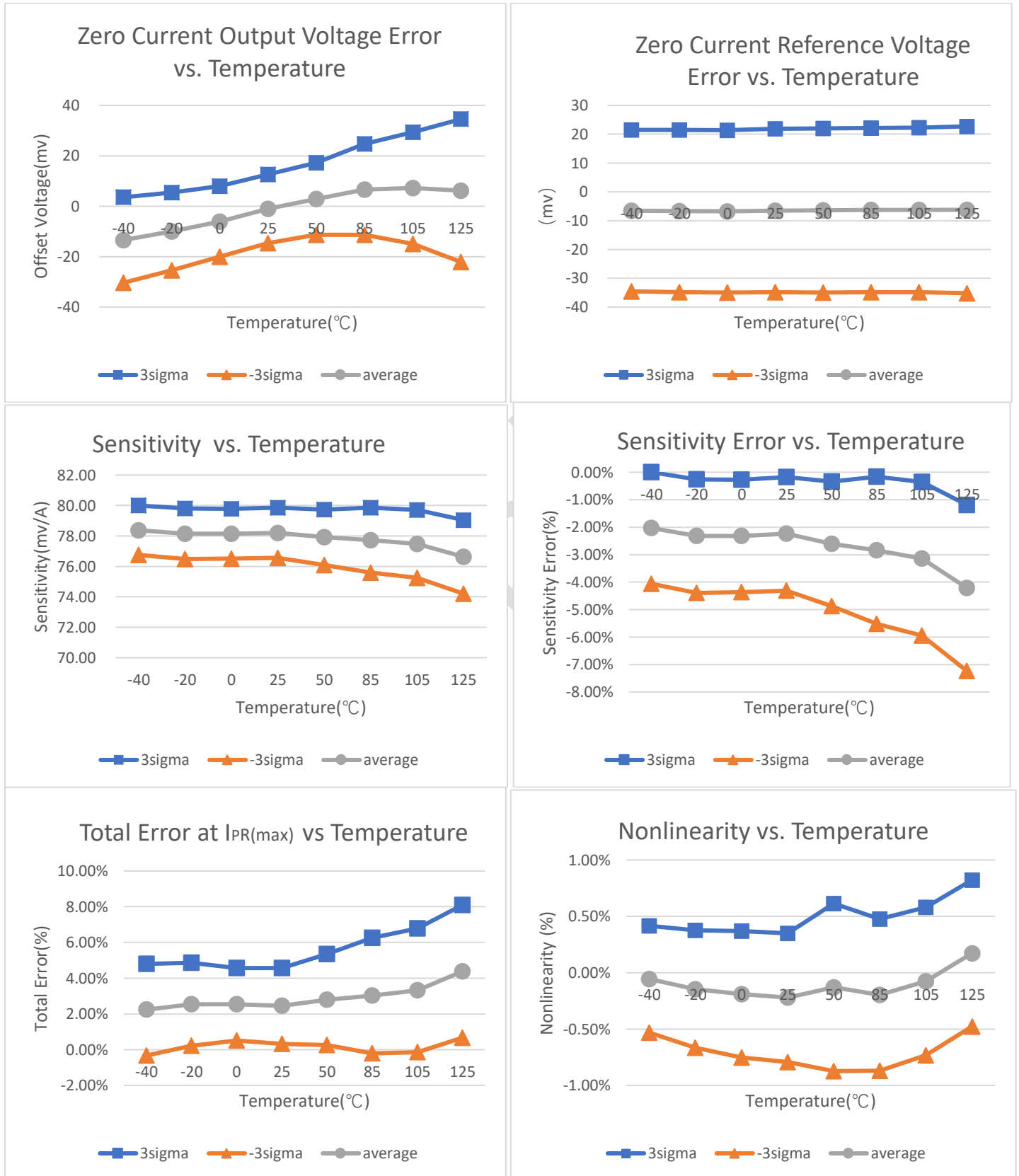
Note: Over full range of  $T_A = -40^{\circ}\text{C} \sim 125^{\circ}\text{C}$ ,  $C_{\text{Bypass}} = 4.7\mu\text{f}$ ,  $C_{\text{Load}} = 1.5\text{nF}$ ,  $V_{\text{CC}} = 5\text{V}$ , unless otherwise specified.

参数 Parameter	符号 Symbol	测试条件/Test Conditions	最小值 Min	典型值 Typ <sup>[1]</sup>	最大值 Max	单位 Units
<b>额定值/NOMINAL PERFORMANCE</b>						
量程范围/ Optimized Accuracy Range	$I_{\text{Pr}}$		-30		30	A
VIOUT @ 0A	$V_{\text{Oq}}$	$I_{\text{P}} = 0\text{A}$ , $T_A = 25^{\circ}\text{C}$		$0.5V_{\text{CC}}$		V
灵敏度/Sensitivity	Sens	Over full of $T_A = 25^{\circ}\text{C}$		66		mV/A
<b>精度指标/ACCURACY PERFORMANCE</b>						
总误差/Total Output Error <sup>[2]</sup>	$E_{\text{TOT}}$	$I_{\text{P}} = \pm 30\text{A}$ , $T_A = 25^{\circ}\text{C}$		$\pm 2.8$		%
		$I_{\text{P}} = \pm 30\text{A}$ , $T_A = 25^{\circ}\text{C} \sim 125^{\circ}\text{C}$ , output filtered		$\pm 6.3$		%
		$I_{\text{P}} = \pm 30\text{A}$ , $T_A = -40^{\circ}\text{C} \sim 25^{\circ}\text{C}$ , output filtered		$\pm 3.2$		%
<b>总误差/TOTAL OUTPUT ERROR COMPONENTS: <math>E_{\text{TOT}} = E_{\text{SENS}} + 100 \times V_{\text{OE}} / (\text{Sens} \times I_{\text{P}})</math></b>						
灵敏度误差/Sensitivity Error	$E_{\text{SENS}}$	$I_{\text{P}} = \pm 30\text{A}$ , $T_A = 25^{\circ}\text{C}$		$\pm 2.5$		%
		$I_{\text{P}} = \pm 30\text{A}$ , $T_A = 25 \sim 125^{\circ}\text{C}$		$\pm 5.4$		%
		$I_{\text{P}} = \pm 30\text{A}$ , $T_A = -40 \sim 25^{\circ}\text{C}$		$\pm 2.7$		%
零点误差/Offset Voltage	$V_{\text{OE}}$	$I_{\text{P}} = 0\text{A}$ , $T_A = 25^{\circ}\text{C}$		$\pm 17$		mV
		$I_{\text{P}} = 0\text{A}$ , $T_A = 25 \sim 125^{\circ}\text{C}$		$\pm 28$		mV
		$I_{\text{P}} = 0\text{A}$ , $T_A = -40 \sim 25^{\circ}\text{C}$		$\pm 26$		mV
非线性度/Nonlinearity	$E_{\text{LIN}}$	Measured using full-scale and half-scale $I_{\text{P}}$		$\pm 1.2$		%
参考脚零点误差/ Zero Current Reference Offset Voltage	$V_{\text{ZCR(ofs)}}$	$T_A = -40 \sim 125^{\circ}\text{C}$		$\pm 45$		mV

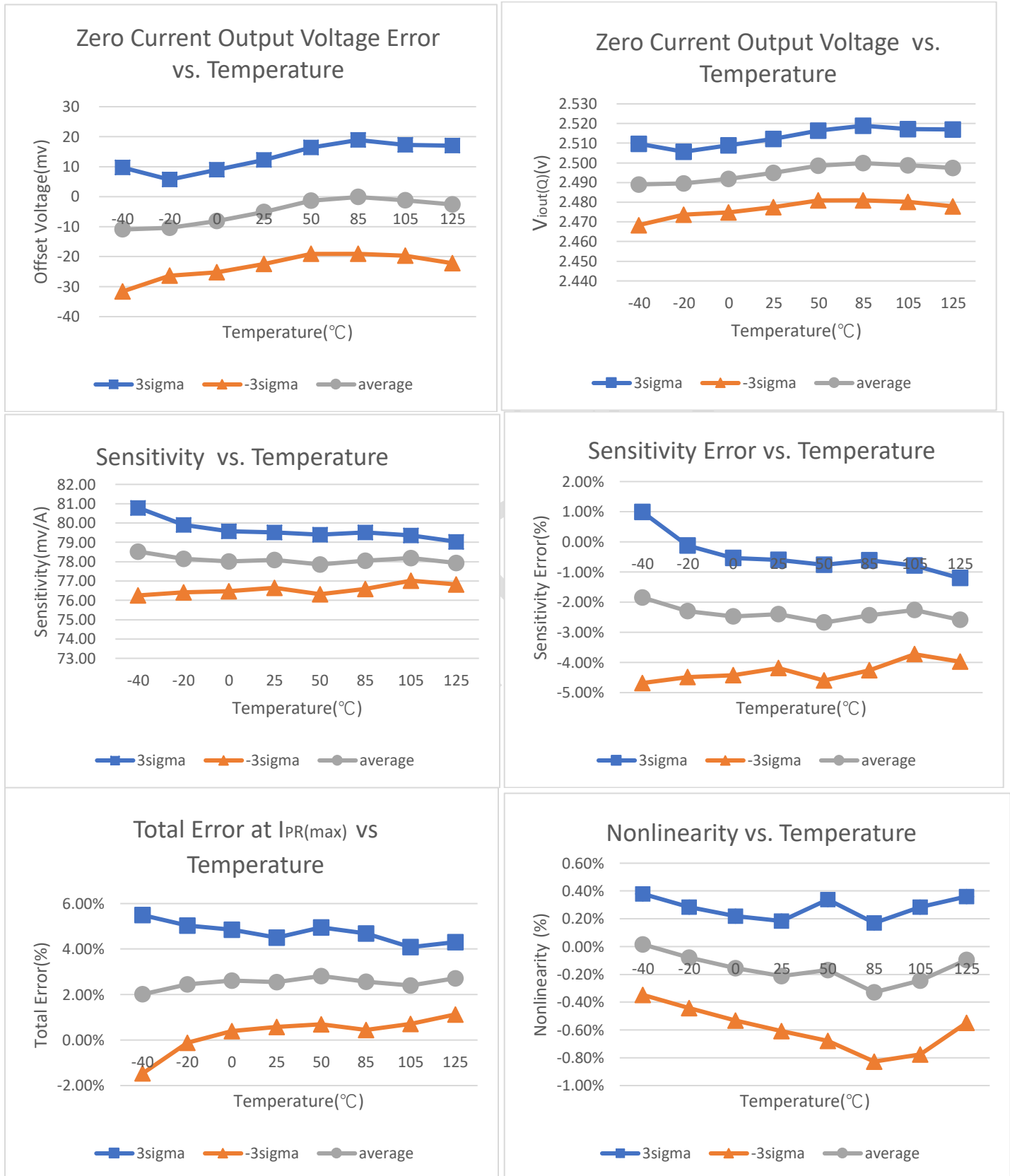
[1] 典型值是+/-3 西格玛值，99.73%的产品落在该范围内/ Typical values with +/- are 3 sigma values

[2] 峰值电流  $I_{\text{P}}$  的百分比值/ Percentage of  $I_{\text{P}}$ , with  $I_{\text{P}} = I_{\text{PR(max)}}$ .

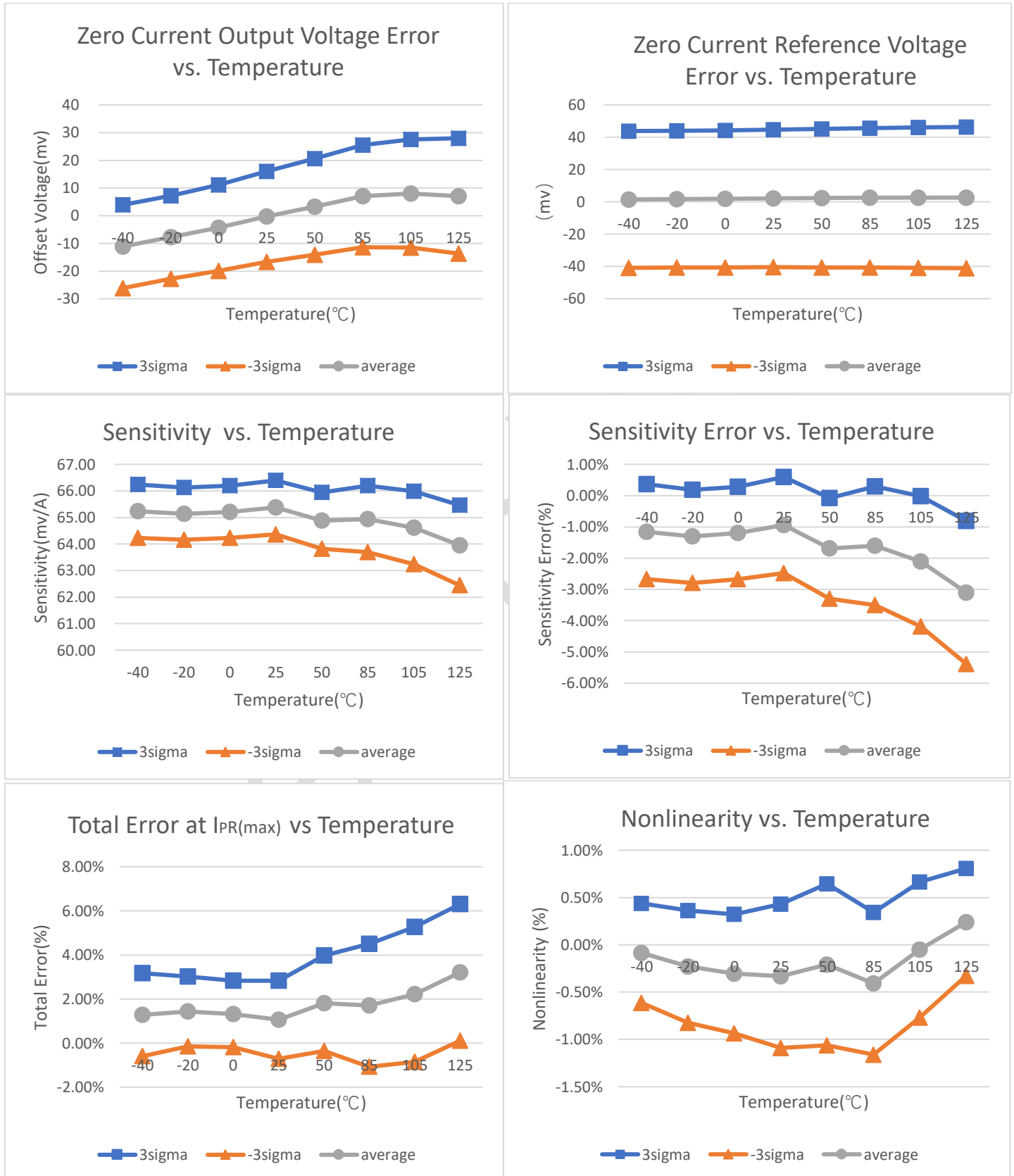
## 精度曲线/CHARACTERISTIC PERFORMANCE SC810RFT-25B5



## 精度曲线/CHARACTERISTIC PERFORMANCE SC810FFT-25B5

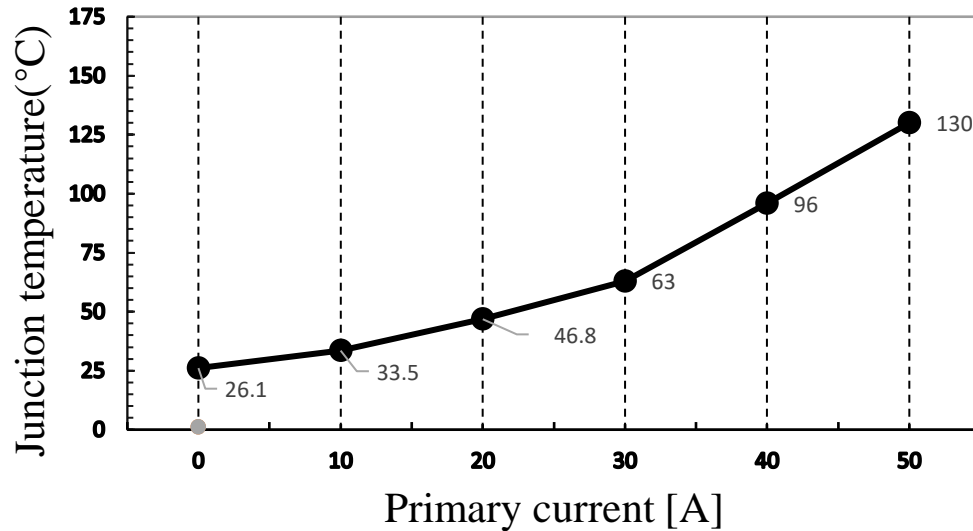


## 精度曲线/CHARACTERISTIC PERFORMANCE SC810RFT-30B5



## 温升与原边电流关系图/Thermal Rise vs. Primary Current

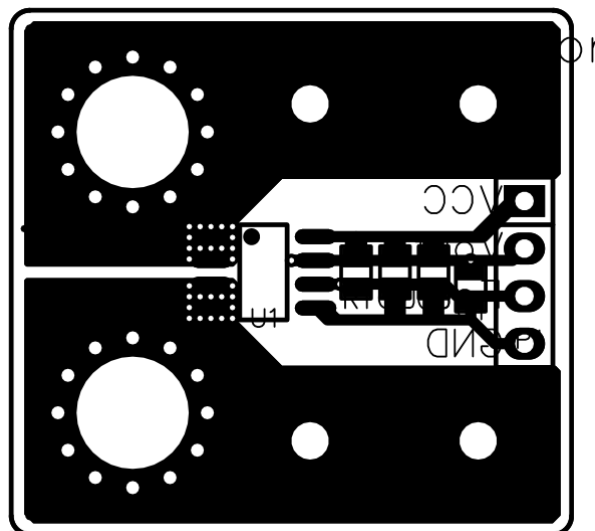
Typical junction temperature [°C] on SC810 vs Primary current [A] @26°C based on Demo Board  
 在 26°C 环境温度下，SC810 在基于 DEMO 板条件下测试得到的结温与原边电流的关系图。



## Demo 板信息/Demo Board information

板名称/Board Name	A10-V2
层数/Layer number	2
与原边管脚连接的铜皮面积 (包含所有层) / Total Copper size connected to Primary pins (Including all layers)	1224 mm <sup>2</sup>
铜厚/Copper layer thickness	2oz / 70um
板厚/Board Thickness	1mm

## Demo 板参考布线图/Demo Board Layout



## 应用信息/ Application Information

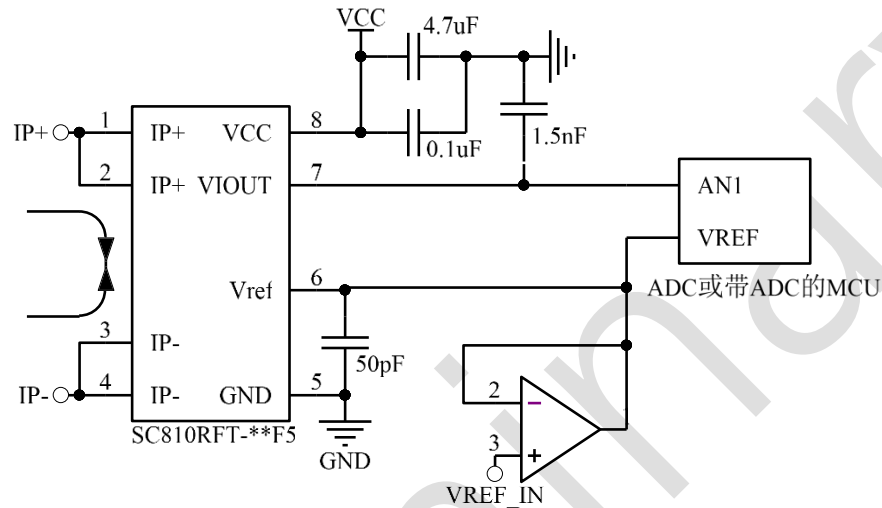
### 一关于 VREF 用法

SC810RFT 系列的 VREF 引脚既可以用于输入，也可以用于输出。

#### 1 VREF 用于输入

当外部接入 0.6-2.5v 电压输入源 (如下图) 时, 电流传感器 VIOOUT 引脚输出的偏置电压被修改为与外接输入相同的电压。

此时  $VIOOUT = VREF\_IN + \text{灵敏度} * IP$ , 其中  $VREF\_IN$  需在 0.6-2.5v 之间。



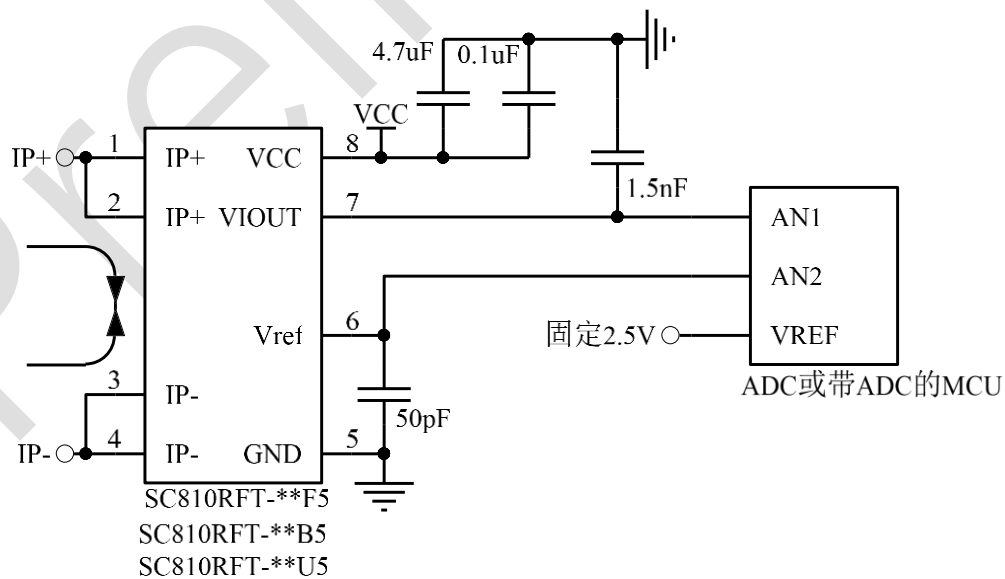
#### 2 VREF 用于输出

此时 VREF 始终等于原边为 0A 时的输出电压 VIOOUT。

当产品为 SC810RFT\*\*B5 时,  $VREF = 0.5VCC$

当产品为 SC810RFT\*\*F5 时,  $VREF = \text{固定 } 2.5v$

当产品为 SC810RFT\*\*U5 时,  $VREF = 0.1VCC$

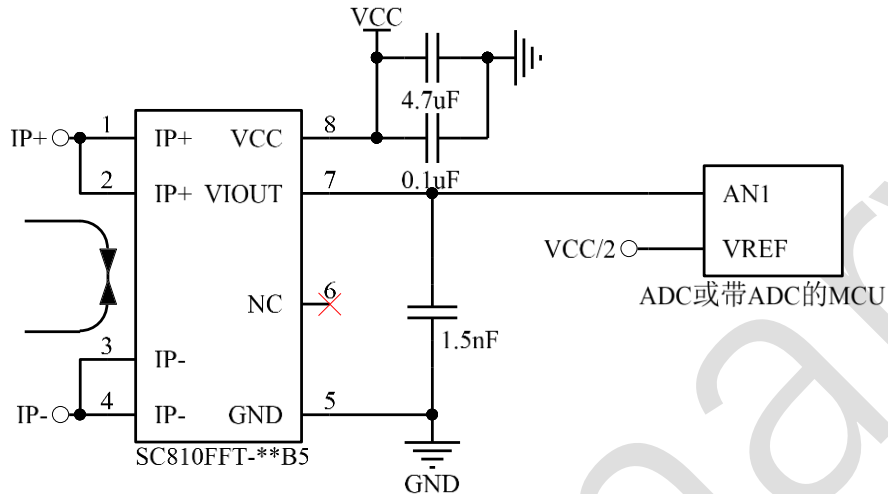


## 二 关于后缀的选择

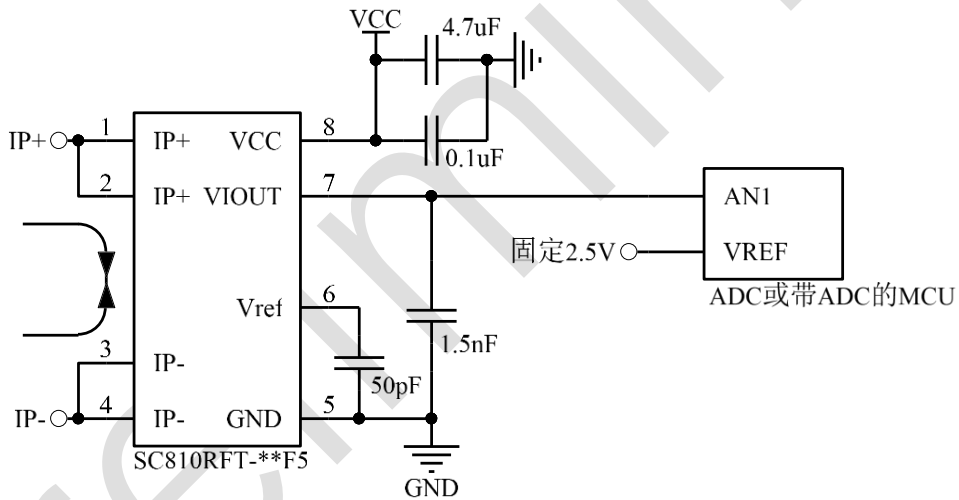
SC810\*\*\*U5 适用于单向电流测量。

SC810\*\*\*B5 和 SC810\*\*\*F5 适用于双向电流测量：

其中 SC810\*\*\*B5 适用于 VCC/2 的 ADC 基准源（无论基准为内基准或外基准）。



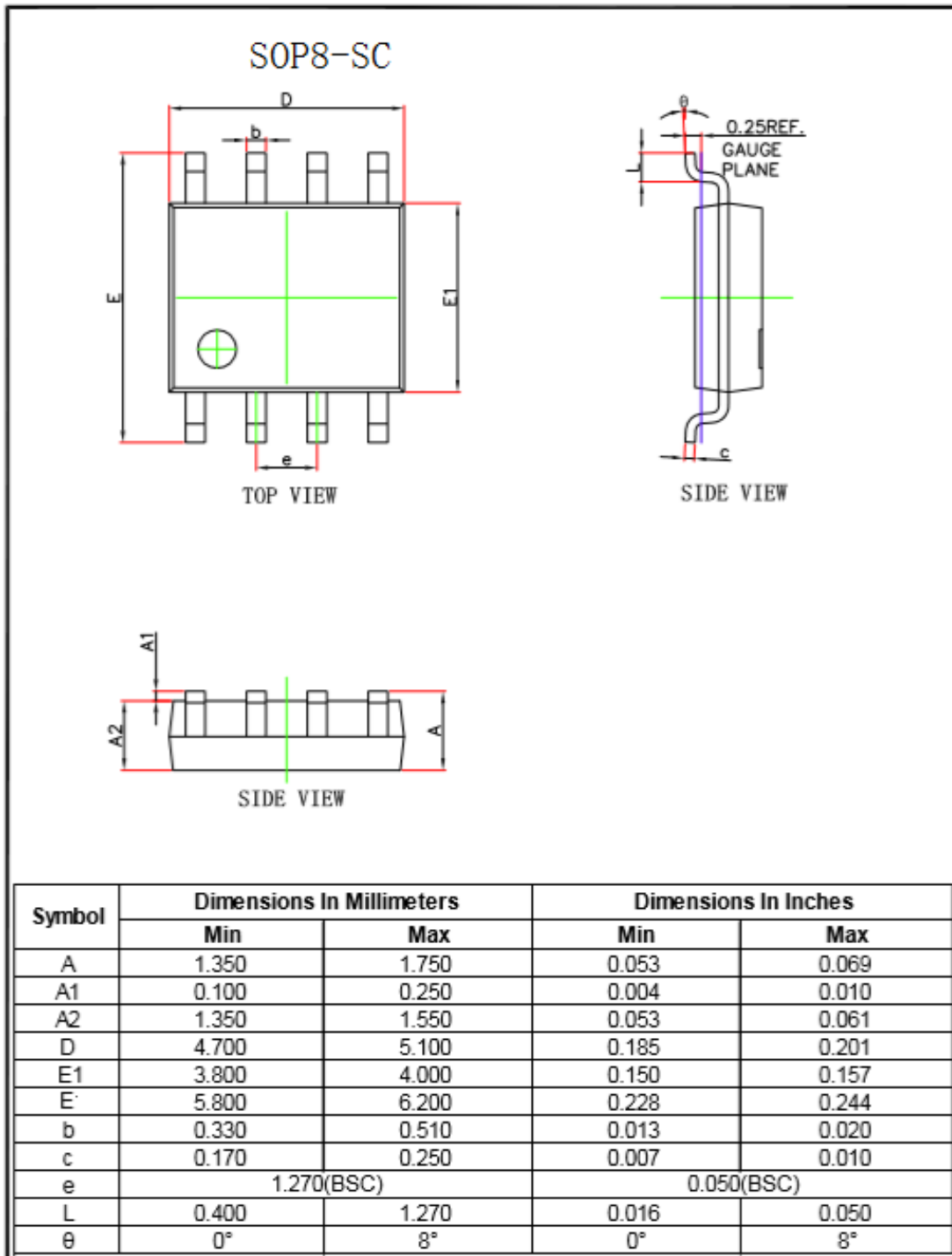
SC810\*\*\*F5 适用于固定 2.5V 的 ADC 基准源（无论基准为内基准或外基准）。



**封装信息/Package Information**

注意：封装为 SOP8-SC, 所有尺寸单位为毫米

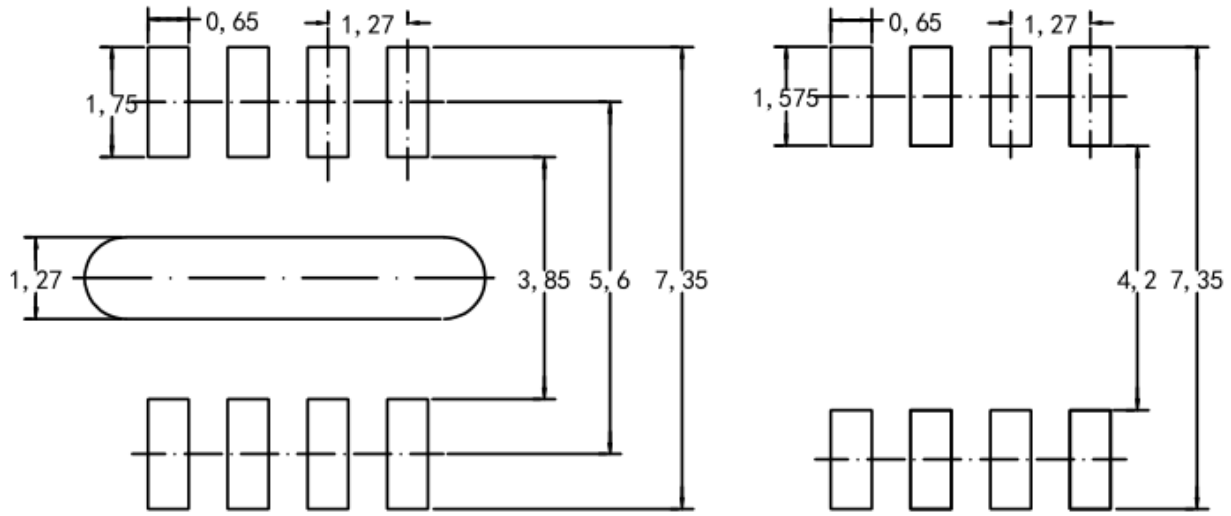
Note: Package is SOP8-SC, all dimensions are in millimeters.





PCB Layout 参考图/PCB Layout Reference view

单位: 毫米 / Unit: mm



适用于PCB允许开槽情况以增加爬电距离  
Used for PCB allowed for slot to increase creep distance

适用于PCB不允许开槽情况  
Used for PCB not allowed for slot

PCB Layout Reference View  
PCB Layout 参考图

## Important Notice

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## Revision Table

Revision	Change	Page	Author	Date
1.0	Initial draft for Chinese version		Tom	2019.11
1.1	Add application information and PCB layout view reference		Tom	2020.2
1.2	620B 为 R, 620C 为 F, 不再维护更新		Jon	2020.03
1.3	补充个型号: SC810RFT-30F5		Jon	2020.07