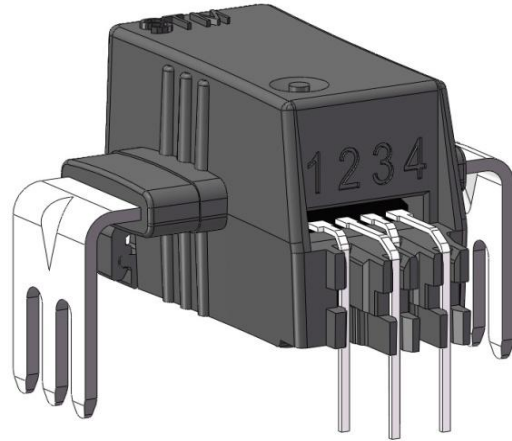


产品规格书	STMHALL	北京世特美测控技术有限公司	
SPECIFICATION		BEIJING STM MEASUREMENT & CONTROL TECHNOLOGY CO.,LTD	
产品名称 Model Name		产品型号 Model Type	
霍尔开环电流传感器 Open Loop Current Transducer Using Hall Effect		S07T_C2.5V1R	
		版本 Version	B.03



产品描述 Features

霍尔开环电流传感器	Hall open loop current transducer
用于测量直流、交流、脉冲电流等	For the electronic measurement of DC, AC and pulsed currents.
原边PCB焊接式	The primary circuit: PCB solder mode
副边PCB焊接式	The secondary circuit: PCB solder mode
原边副边之间绝缘	With a galvanic isolation between the primary circuit and the secondary circuit
单电源供电	Unipolar power supply
电压型输出信号	Output signal is voltage

特性 Advantages

温漂低	Low temperature coefficient of offset
小尺寸	Small size and space savings

应用 Applications

交流变频调速,伺服电机牵引	AC variable speed drives and servo motor drives
直流电机驱动静态转换器	Static converters for DC motor drives
电池电源	Battery supplied applications
不间断电源	Uninterruptable Power Supplies(UPS)
开关电源 (SMPS)	Switched Mode Power Supplies(SMPS)
焊机电源	Power supplies for welding applications
太阳能逆变器	Solar inverters

型号解释 Model type explanation

S	O7	T	20	C	2.5	V1	R	
								"空":无参考电压输出;R:带参考电压输出。"BLANK":No Vref; R:with Vref pins.
						辅助电源代码	power supply code	
					额定输出2.5V±0.8V	rated secondary output voltage is 2.5V±0.8V		
				C:电流; V:电压	primary input,C:current; V:voltage			
			额定输入值20A	rated primary input 20A				
		A: AC; D:DC; T:交直流通用	primary input, A:AC; D:DC; T:AC,DC,and pulsed					
							封装外壳代码	housing case code
S: 电量传感器 ; T:电量变送器								S: electrical transducer ; T: electrical transmitter with additional functions

型号表 Model table

型号 Model	原边额定输入电流 Primary nominal current rms A	原边电流测量范围 ⁽¹⁾ Primary current, measuring range A	理论灵敏度 Theoretical sensitivity Gth , mV/A	Vout-Vref @IPN mV
SO7T10C2.5V1R	10	±25	80	800
SO7T16C2.5V1R	16	±40	50	800
SO7T20C2.5V1R	20	±50	40	800
SO7T32C2.5V1R	32	±80	25	800
SO7T40C2.5V1R	40	±100	20	800
SO7T50C2.5V1R	50	±125	16	800

注(1): 数值在电源电压 $V_c > 4.6V$ 时测量。

Note(1): For $V_c > 4.6V$.

极限值 Absolute maximum ratings

Vc	辅助电源电压	Supply voltage	6	V
	原边导体温度	Primary conductor temperature	120	°C
	人体模型静电防护等级	ESD rating, Human Body Model(HBM)	2	kV

注：超过极限值使用可能会导致永久性的损坏，长期在极限值下使用会导致可靠性下降。

Note: Stresses above these ratings may cause permanent damage. Exposure to absolute maximum ratings for extended periods may degrade reliability.

绝缘参数 Isolation characteristics

Vd	工频耐压	RMS voltage for AC isolation test 50/60Hz 1minute	4.3	kV
Vw	耐冲击电压	Impulse withstand voltage 1.2/50 μ s	8	kV
dCI	空气间隙	Clearance distance(pri. - sec.)	>8	mm
dCp	爬电距离	Creepage distance(pri. - sec.)	>8	mm
CTI	漏电起痕指数	Comparative tracking index	600	V
	外壳材料	Insulated plastic case material	V0 according to UL 94	

一般参数 General data

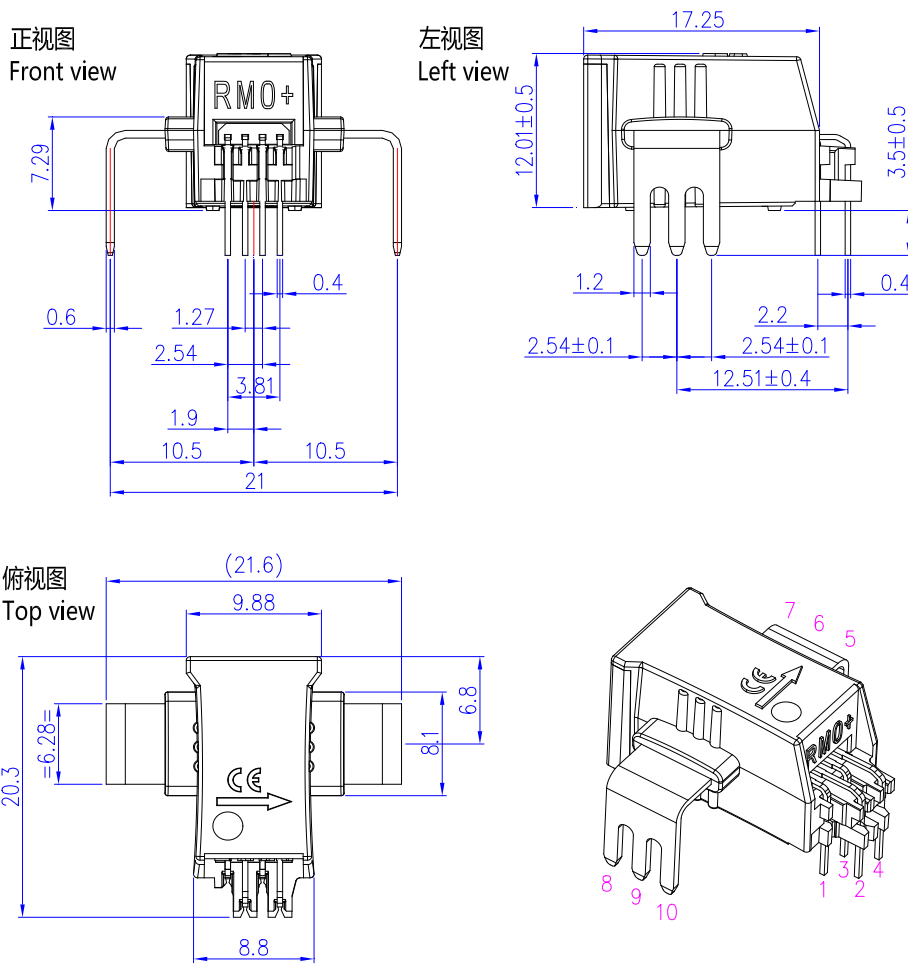
TA	工作环境温度	Ambient operating temperature	- 40 .. + 105	°C
TS	存储环境温度	Ambient storage temperature	- 45 .. + 105	°C
m	重量	Mass	6	g
	安全标准	Standards Safety	EN50178:1997 UL 508:2010	

电参数 Electrical data S07T_C2.5V1R

At TA=25°C, Vc=+5V, RL=10kΩ, unless otherwise noted.

Symbol	参数	Parameter	Min	Typ	Max	Unit
Np	原边匝数	Number of primary turns		1		
Rp	原边跳线阻值	Resistance of primary jumper	@TA=25°C	0.21		mΩ
			@TA=105°C	0.29		
Vc	辅助电源电压	Supply voltage	4.5	5	5.5	V
Ic	辅助电源电流	Current consumption		19	25	mA
VREF	内部输出参考电压	Internal reference voltage output	2.48	2.5	2.52	V
Vout-Vref	副边输出电压范围	Output voltage range @IPM	-2		2	V
CL	负载电容	Capacitive loading	0		6	nF
VOE	电失调电压	Electrical offset voltage @Ip=0A Vout-Vref @ Vref=2.5V	-7		7	mV
TCVOE	电失调电压温度漂移	Temperature coefficient of VOE, @-40°C...105°C	-0.075		0.075	mV/K
TCVref	参考电压温度漂移	Temperature coefficient of Vref, -40°C...105°C	-150		150	ppm/K
εG	灵敏度误差	Sensitivity error	-0.5		0.5	%
TCG	增益温度漂移	Temperature coefficient of G, -40°C...105°C	-200		200	ppm/K
εL	线性度误差	Linearity error	0...IPN	-0.5	0.5	% of IPN
			0...IPM			% of IPM
IOM	换算到原边的磁失调电流	Magnetic offset current (@ 10 x IPN)referred to primary	-0.25		0.25	A
Tra	反应时间	Reaction time @10% of IPN @di/dt=50A/μs			2	μs
Tr	响应时间	Response time @90% of IPN @di/dt=50A/μs			4	μs
BW	频带宽度	Frequency bandwidth(-3dB)		200		kHz
X	精度	Accuracy @ IPN, TA=25°C	-1		1	% of IPN
		Accuracy @ IPN, TA=105°C	-2.5		2.5	

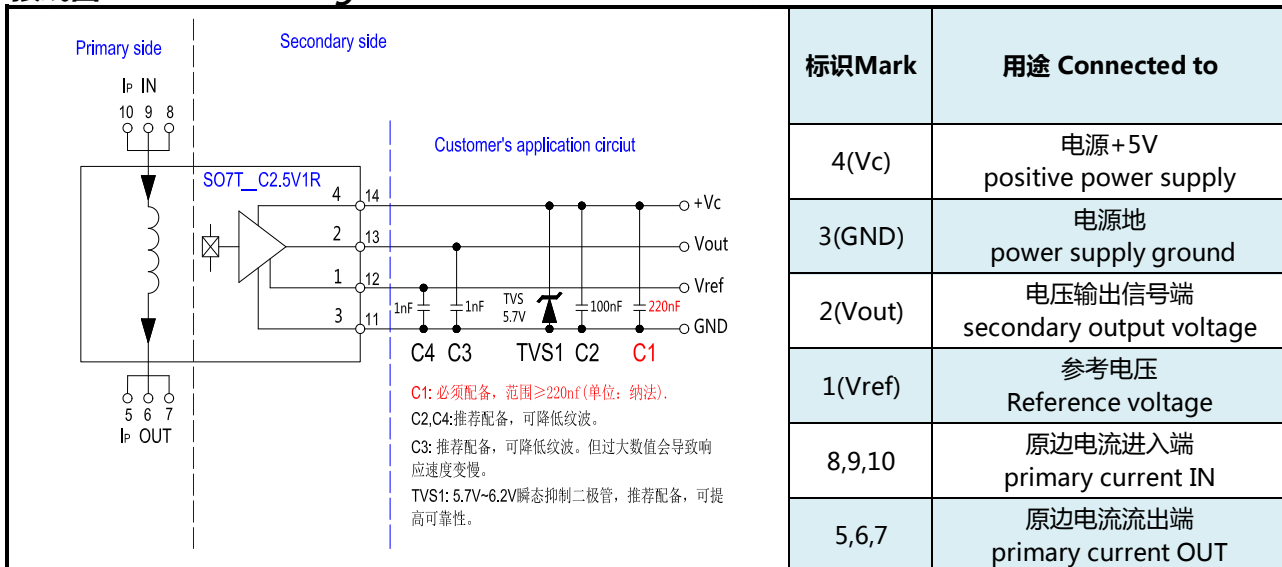
外形图 Mechanical outline (mm)



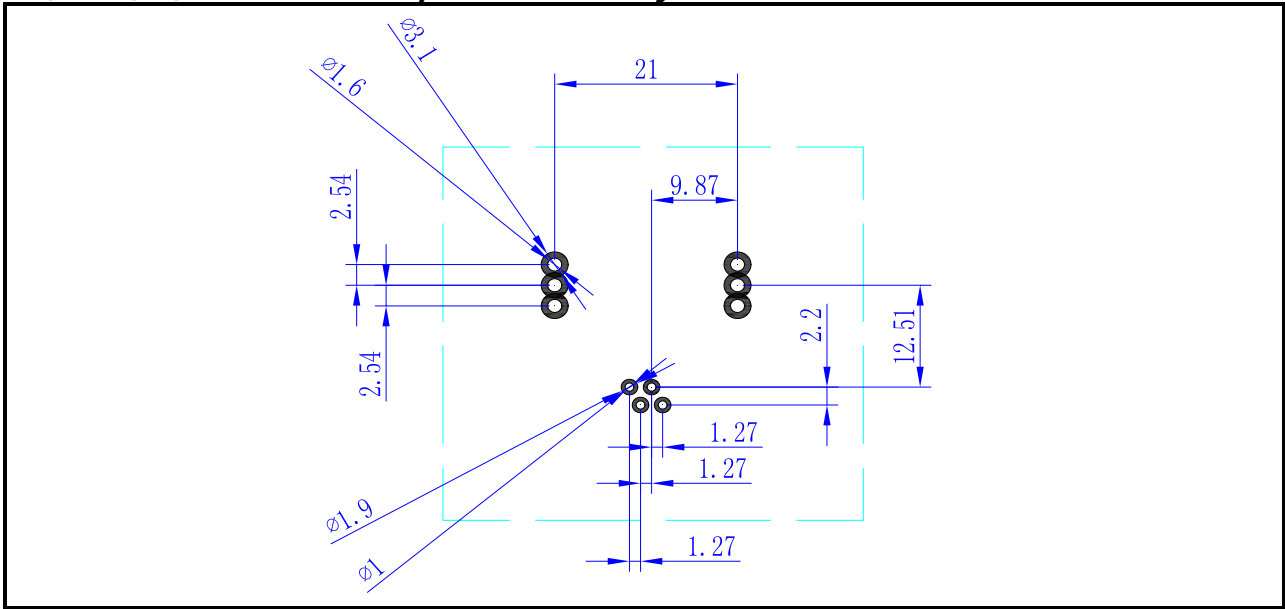
注：当电流 I_p 按箭头方向所示流过时，输出电压 $V_s > 2.5V$ 。

Remarks : $V_s > 2.5V$ when I_p flows in the direction of the arrow.

接线图 Connection diagram



印刷电路板焊接固定 PCB footprint & assembly



推荐PCB焊盘孔	Recommended PCB hole diameter	$\Phi 1.6\text{mm}$ for primary pins $\Phi 1\text{mm}$ for secondary pins
PCB最大厚度	Maximum PCB thickness	2.4mm
波峰焊	Wave soldering profile	maximum 260°C for 10 seconds

STMHALL	公司名称	北京世特美测控技术有限公司
	公司网址	www.bjstmck.com