



上海市质量监督检验技术研究院

Shanghai Institute of Quality Inspection and Technical Research

校准证书

中国认可
国际互认
校准
CALIBRATION
CNA 11128

CALIBRATION CERTIFICATE

证书编号: J16126002547 号
Certificate No.

客户名称 Customer	Research Center of Informatic Industries (RCII)
客户地址 Address of customer	No. 3, Roodsar St., shahid Azodi St., Karimkhan-e-zand Blvd., Tehran - IRAN
计量器具名称 Name of Samples	Multifunctional immunity test instrument host
型号 / 规格 Type/Specification	LIS-7600
出厂编号 Series No.	---
制造单位 Manufacturer	Lisun Group



批准人 孙晓虹
Approved by

核验员 徐静婷
Checked By

校准员 倪华
Calibrated By

校准日期 2016 年 12 月 30 日
Date of calibration Year Month Day

地址 (Address): 上海市江月路900号

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网址 (Web site): www.sqi.org.cn



本次计量所依据的技术文件(代号、名称):

Reference documents for the calibration (code、name)

GB/T 17626.5-2008 电磁兼容 试验和测量技术 浪涌(冲击)抗扰度实验 Electromagnetic compatibility-Testing and measurement techniques-Surge immunity test
 SQR/JL-BD-90 雷击浪涌发生器不确定度评定 Uncertainty evaluation of surge generator
 GB/T 17626.4-2008 电磁兼容 试验和测量技术 电快速瞬变脉冲群抗扰度试验 Electromagnetic compatibility-Testing and measurement techniques-Electrical fast transient/burst immunity test
 SQR/JL-BD-209 电快速瞬变脉冲发生器校准装置不确定度评定 Uncertainty evaluation of Electrical fast transient generator

计量地点及环境条件:

Location and environmental condition

计量地点: 江月路900号5号楼416室

其它: /

Location

Others

环境温度: 22 °C;

相对湿度: 60 %

Ambient temperature

Relative humidity

本次计量所使用的主要计量标准器具:

Main measurement standards used in this verification

名称/型号 Name/Type	编号 Number	测量范围/准确度 Measuring range/Accuracy	证书编号/有效期限 Certificate No./Due date
示波器 Oscilloscope DP04104B-L	C023952	DC-1GHz /±1.5% 0-100V /±1.5%	2016F32-10-000660/ 2017-5-23
高压探头 High-voltage probe/P6015A	30-17	1000:1 /±2%	J16125000131/ 2017-8-5
衰减器 Attenuator	1011-057	100:1(50Ω) /±5%	J16120000666/ 2017-9-28
衰减器 Attenuator	0212-034	500:1(1000Ω) /±5%	J16120000667/ 2017-9-28

以上计量标准器具的量值均可溯源到国家基准。

Quantity values of above measurement standards used in this calibration are traced to those of the national primary standards in the P.R. China.

结果/说明:


Results and additional explanation

参考: ISO 7637 Road vehicles — Electrical disturbances from conduction and coupling — Part 2:Electrical transient conduction along supply lines only

数据见后页 Data showing in next page

本证书提供的结果仅对本次被检(校)样品有效, 未经本院许可, 不得部分采用本证书的内容。

The data are valid only for the Sample(s),Partly using this certificate will not be admitted unless allowed.

结果/说明 (续页): 

Results and additional explanation (continued page)

校准结果: Calibration results

系统构成 System composition

LIS-7600 LIS 7600 0161201
LIS-7610 LIS 7610 0161201
LIS-7620 LIS 7620 0161201J
LIS-7630 LIS 7630 0161201

Test Pulse 1

Source	Load	Parameter	Setting Value	Measurement	Specification	Conclusion
12V	No Load	Us	-100V	-103.0V	-110 V ~-90 V	pass
12V	No Load	tr	1 μ s	0.69 μ s	0.5 μ s~1 μ s	pass
12V	No Load	td	2000 μ s	2092 μ s	1600 μ s~2400 μ s	pass
12V	10 Ω Load	Us	-50V	-50.3V	-60 V ~-40 V	pass
12V	10 Ω Load	td	1500 μ s	1464 μ s	1200 μ s~1800 μ s	pass
24V	No Load	Us	-600V	-603V	-660 V ~-540 V	pass
24V	No Load	tr	3 μ s	2.12 μ s	1.5 μ s~3 μ s	pass
24V	No Load	td	1000 μ s	1084 μ s	800 μ s~1200 μ s	pass
24V	50 Ω Load	Us	-300V	-306V	-330 V ~-270 V	pass
24V	50 Ω Load	td	1000 μ s	1000 μ s	800 μ s~1200 μ s	pass

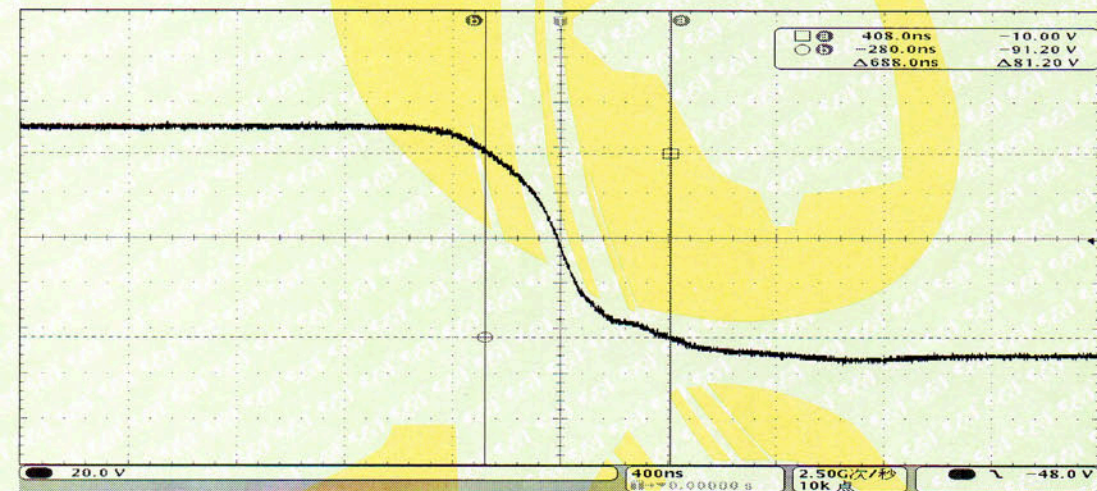
Test Pulse 2a

Source	Load	Parameter	Setting Value	Measurement	Specification	Conclusion
12Vand24V	No Load	Us	50V	50.8V	45 V ~55 V	pass
12Vand24V	No Load	tr	1μs	0.92μs	0.5μs~1μs	pass
12Vand24V	No Load	td	50μs	51.1μs	40μs~60μs	pass
12Vand24V	2Ω Load	Us	25V	27.1V	20 V ~30 V	pass
12Vand24V	2Ω Load	td	12μs	13.24μs	9.6μs~14.4μs	pass

Source	Load	Parameter	Setting Value	Measurement	Specification	Conclusion
12Vand24V	No Load	Us	75V	76.3V	67.5 V ~82.5 V	pass
12Vand24V	No Load	tr	1μs	0.90μs	0.5us~1us	pass
12Vand24V	No Load	td	50μs	50.5μs	40us~60us	pass
12Vand24V	2Ω Load	Us	37.5V	31.3V	30V ~45V	pass
12Vand24V	2Ω Load	td	12μs	13.90μs	9.6us~14.4us	pass

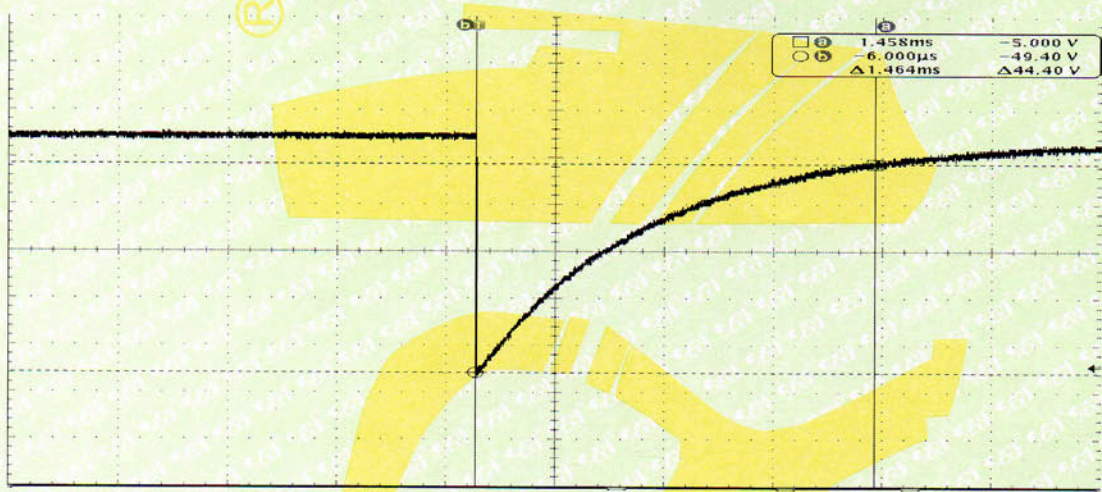
本次校准不确定度 The calibration uncertainty: $U_{rel}=3.3\%(k=2)$

1. P1 (12V) 100 (no load)

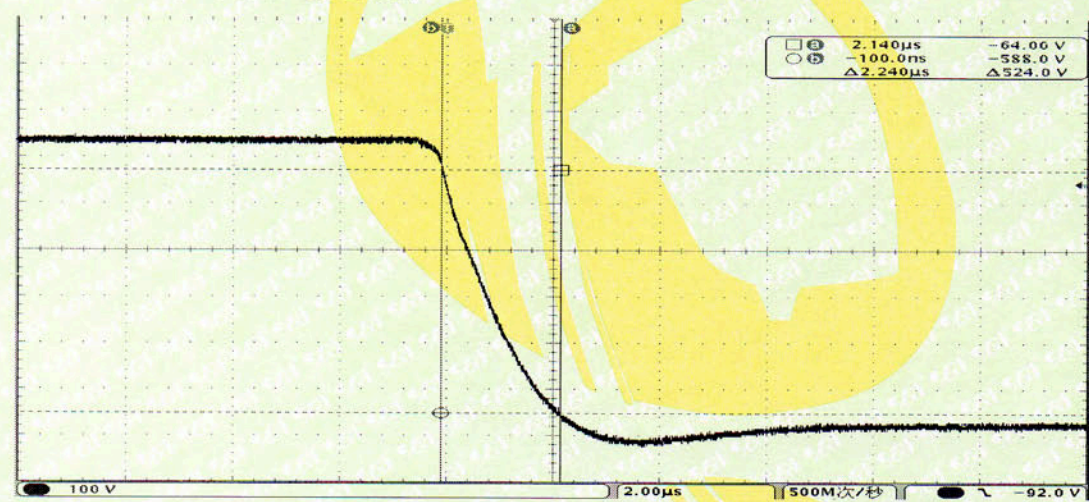




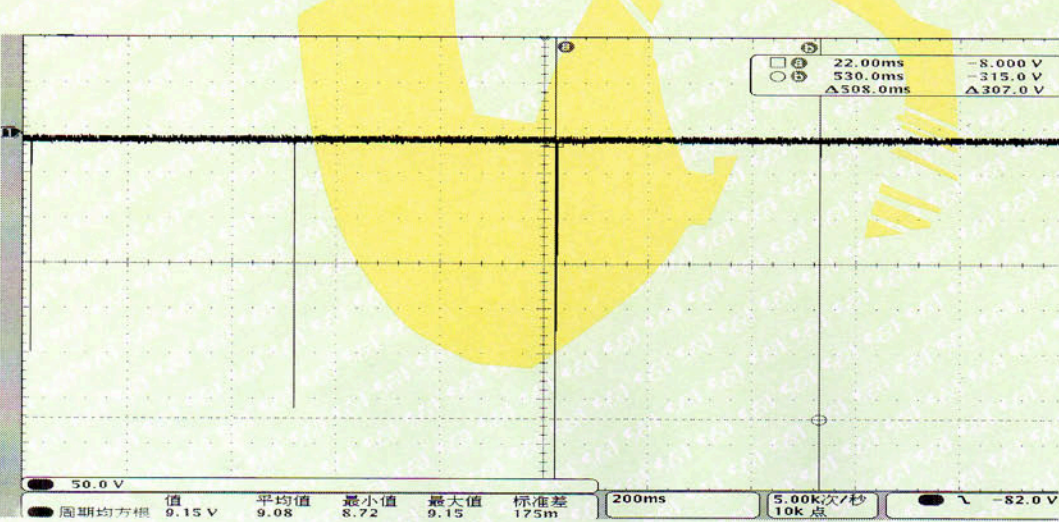
2. P1 (12V) 100 (load)



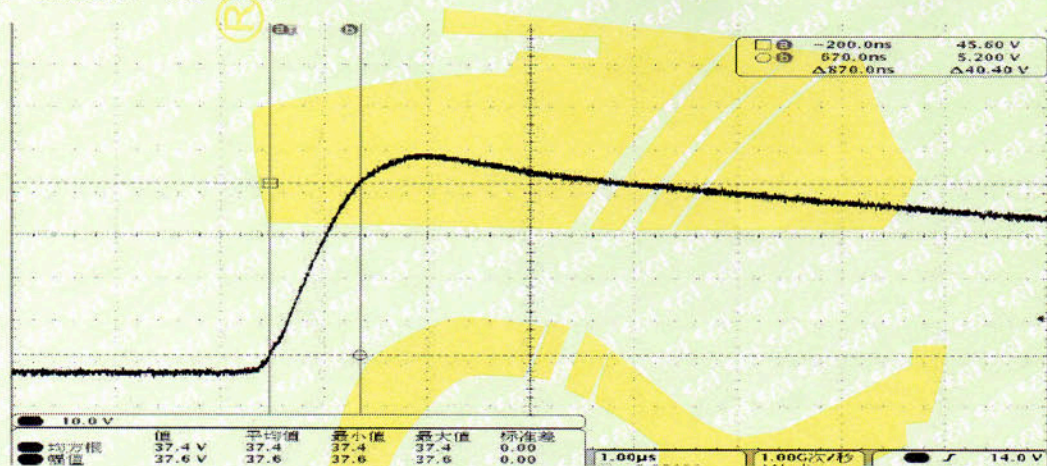
3. P1 (24V) 600V (no load)



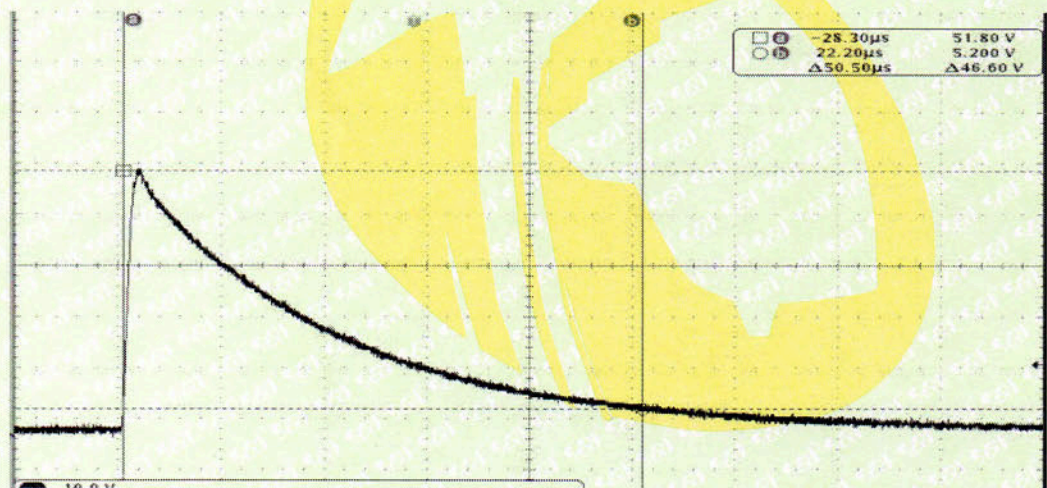
4. P1 (24V) 600V (load)



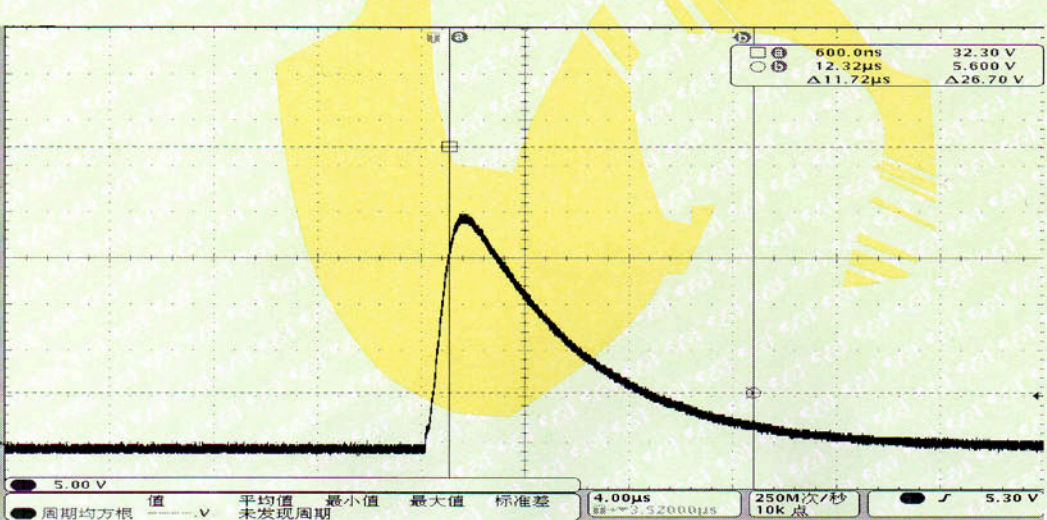
5. P2a 50V (no load)



6. P2a 50V (no load)



7. P2a 50V (load)





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Test Pulse 2b



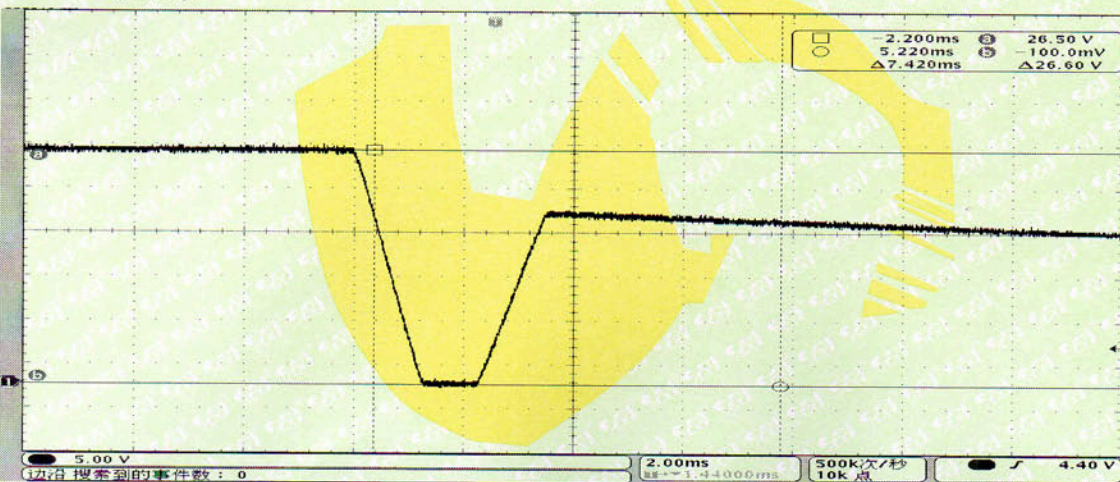
Source	Load	Parameter	Setting Value	Measurement	Specification	Conclusion
12V	No Load	Us	10V	9.55V	8V ~12 V	pass
12V	No Load	tr	1ms	1.01ms	0.5ms ~1.5ms	pass
12V	No Load	td	2s	2.00s	1.6s ~2.4s	pass
12V	10Ω Load	Us	20V	20.05V	18 V ~22 V	pass

Test Pulse 4

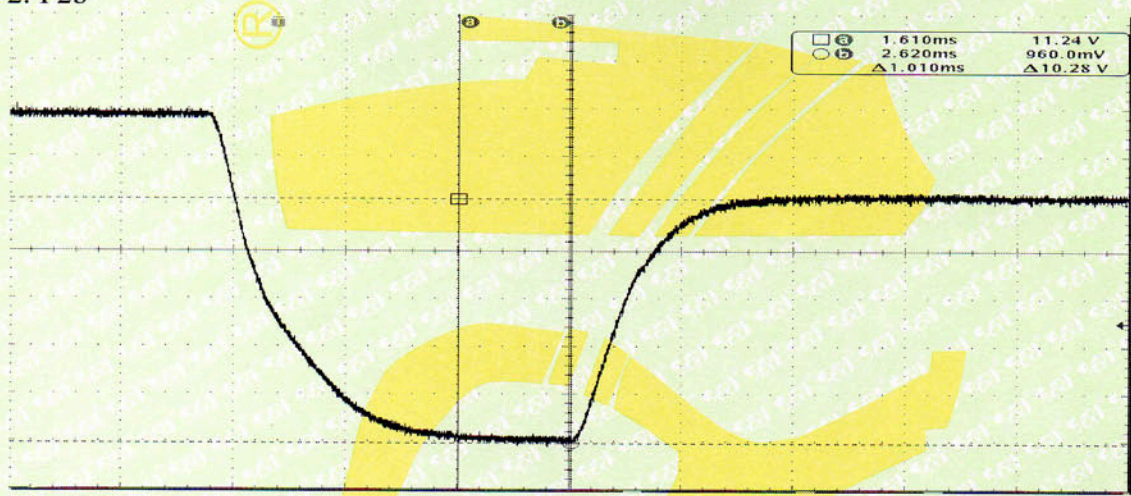
Source	Load	Parameter	Setting Value	Measurement	Specification	Conclusion
12V	No Load	Us	5.5V	5.60V	5.0V ~6.1V	pass
12V	No Load	Ua	2.5V	2.46V	2.3V ~2.8V	pass
12V	No Load	t7	15ms	15.0ms	N/A	pass
12V	No Load	t8	50ms	49.9ms	N/A	pass
12V	No Load	t9	5s	5.01s	N/A	pass
12V	No Load	t10	5ms	5.02ms	N/A	pass
12V	No Load	t11	5ms	5.03ms	N/A	pass
24V	No Load	Us	16.0V	16.13V	14.4V ~17.6V	pass
24V	No Load	Ua	12.0V	12.00V	10.8V ~13.2V	pass
24V	No Load	t7	50ms	49.7ms	N/A	pass
24V	No Load	t8	50ms	49.3ms	N/A	pass
24V	No Load	t9	5s	5.20s	N/A	pass
24V	No Load	t10	10ms	10.03ms	N/A	pass
24V	No Load	t11	10ms	10.03ms	N/A	pass

本次校准不确定度 The calibration uncertainty: $U_{rel}=3.3\%(k=2)$

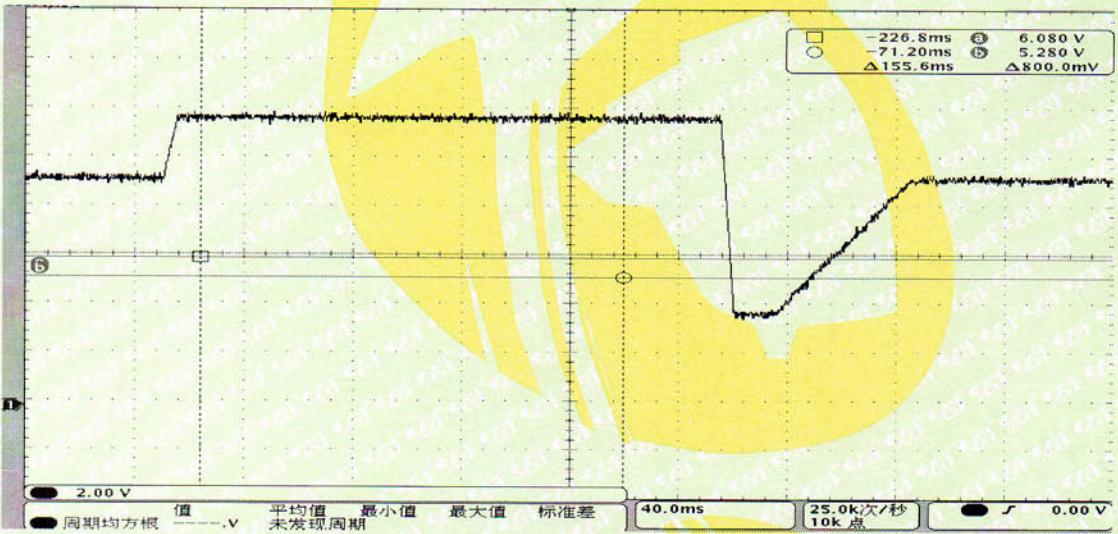
1. P2b (部份)



2. P2b

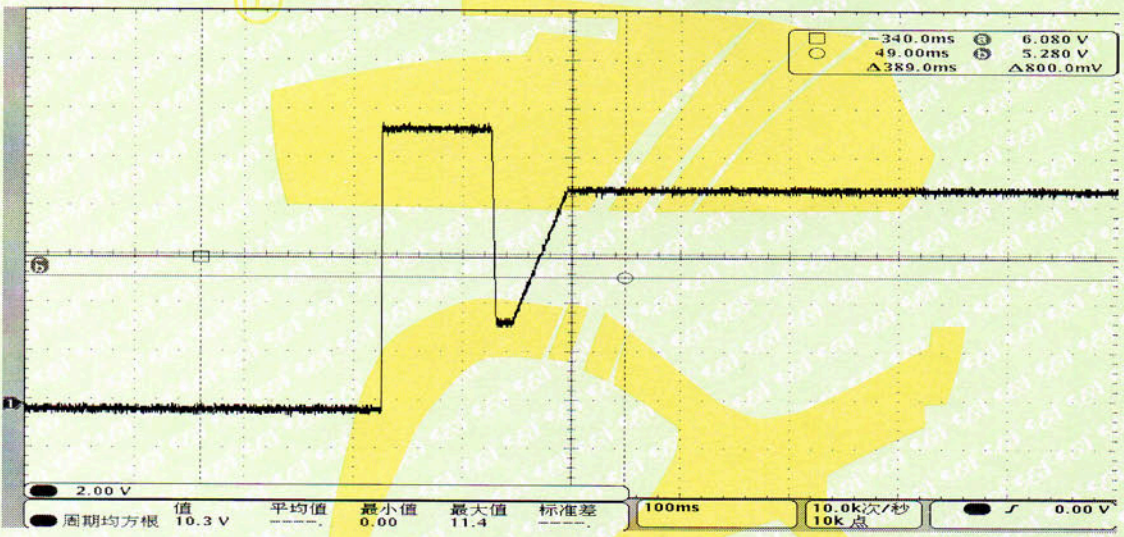


P4 (部分)

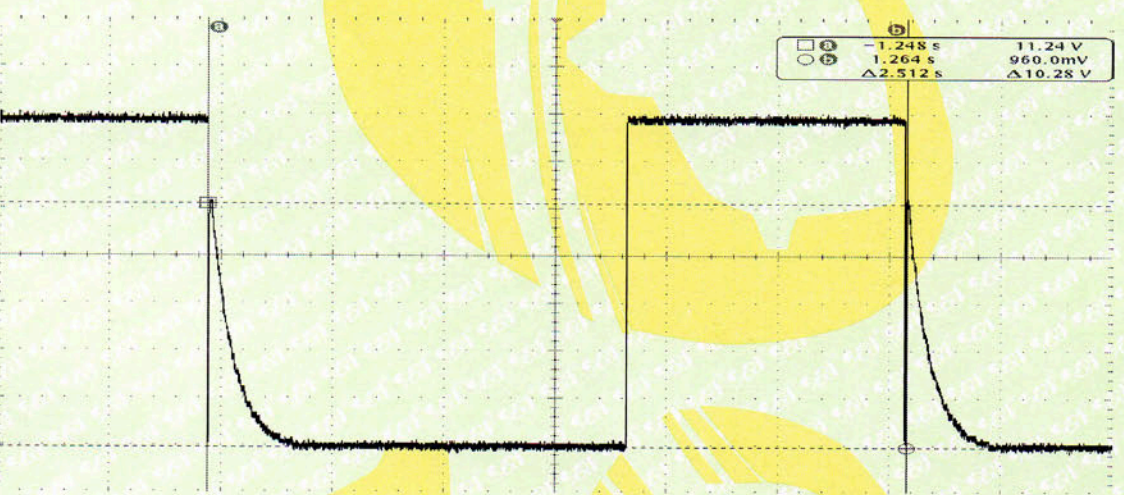




P4 (部分)



P4 (部分)





Test Pulse 3a

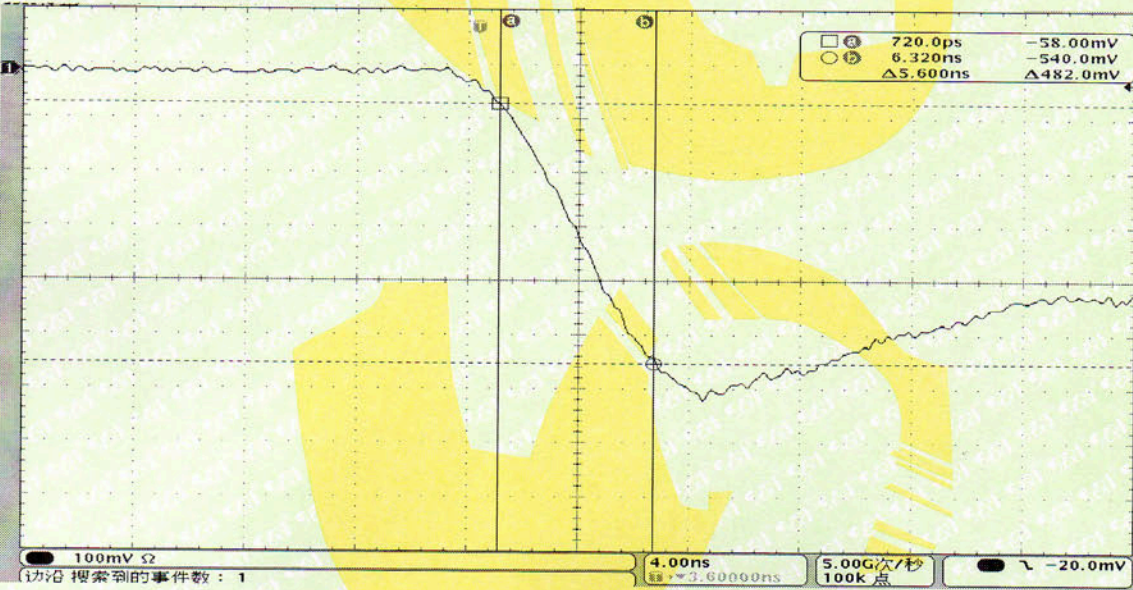
Source	Load	Parameter	Setting Value	Measurement	Specification	Conclusion
12Vand24V	1kΩ Load	Us	-200V	-190.3V	-220 V ~-180 V	pass
12Vand24V	1kΩ Load	tr	5ns	5.60ns	3.5ns~6.5ns	pass
12Vand24V	1kΩ Load	td	150ns	152.5ns	105ns~195ns	pass
12Vand24V	50Ω Load	Us	-100V	-94.2V	-120 V ~-80 V	pass
12Vand24V	50Ω Load	tr	5ns	5.80ns	3.5ns~6.5ns	pass
12Vand24V	50Ω Load	td	150ns	150.8ns	105ns~195ns	pass

Test Pulse 3b

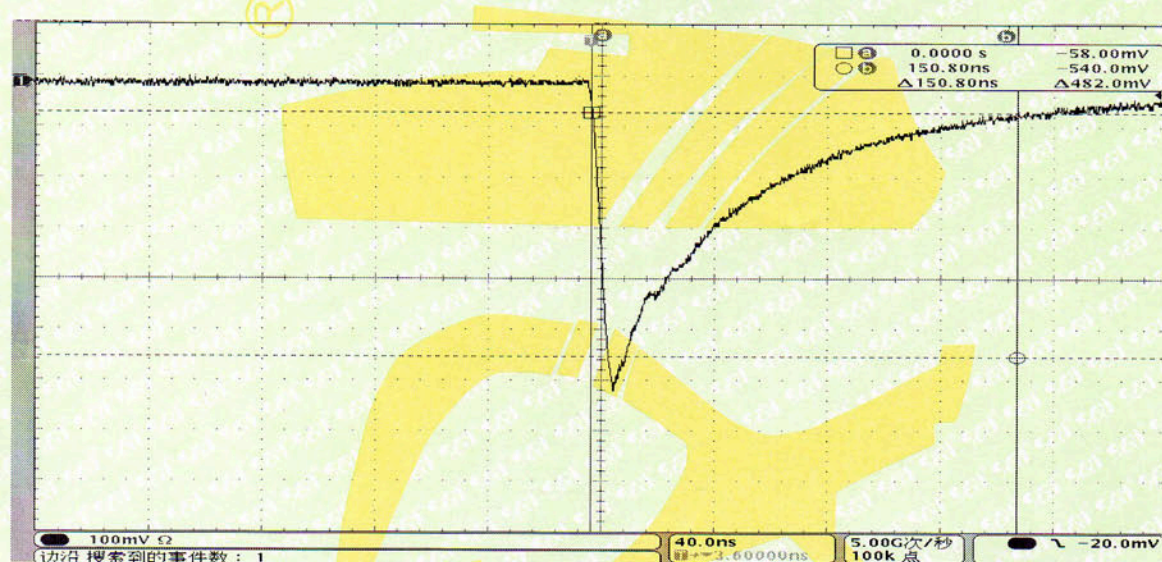
Source	Load	Parameter	Setting Value	Measurement	Specification	Conclusion
12Vand24V	1kΩ Load	Us	200V	192.6V	220 V ~180 V	pass
12Vand24V	1kΩ Load	tr	5ns	5.12ns	3.5ns~6.5ns	pass
12Vand24V	1kΩ Load	td	150ns	158.3ns	105ns~195ns	pass
12Vand24V	50Ω Load	Us	100V	105V	120 V ~80 V	pass
12Vand24V	50Ω Load	tr	5ns	4.48ns	3.5ns~6.5ns	pass
12Vand24V	50Ω Load	td	150ns	154.0ns	105ns~195ns	pass

本次校准不确定度 The calibration uncertainty: $U_{rel}=4.0\%(k=2)$

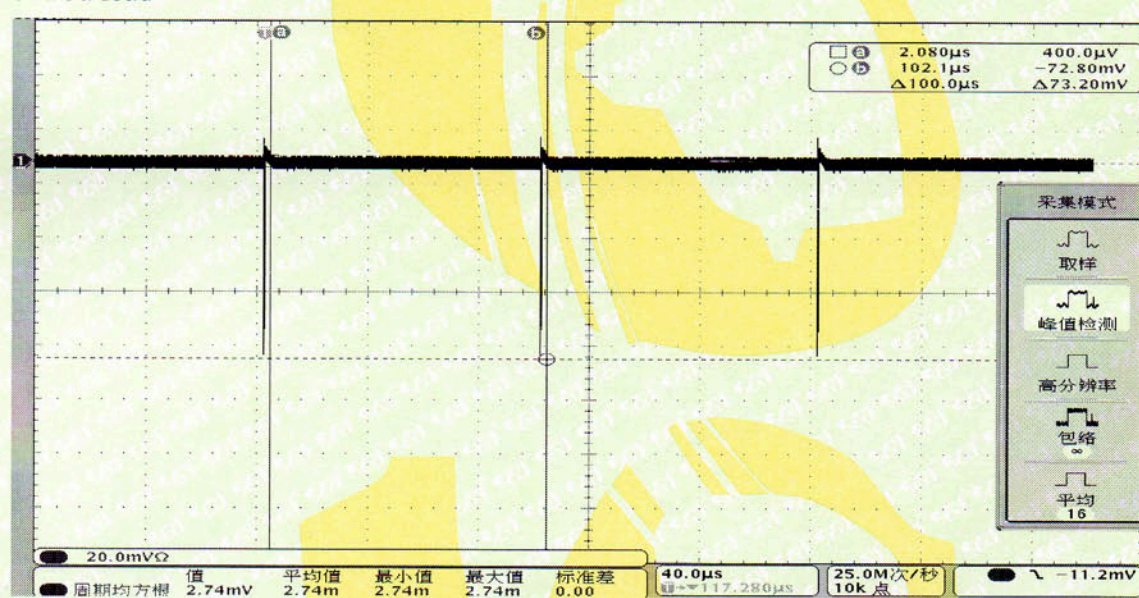
1. P3a load



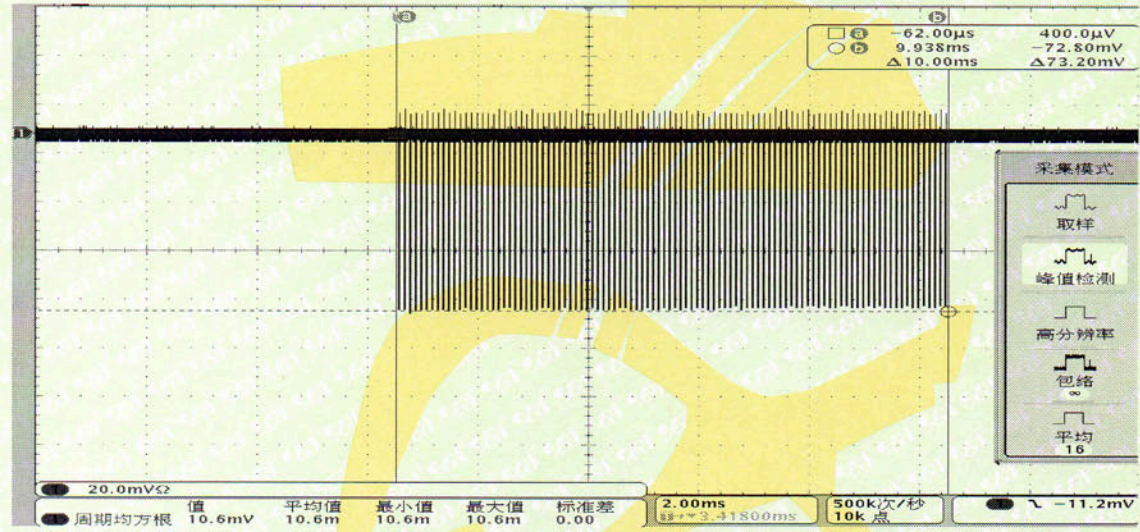
2. P3a load



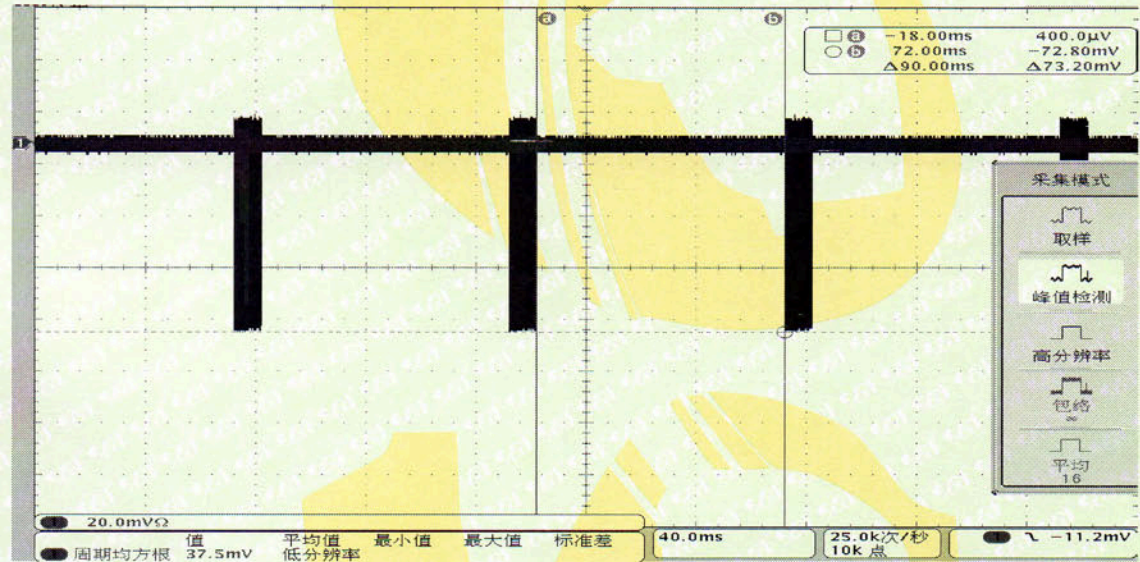
3. P3a load



4. P3a load



5. P3a load





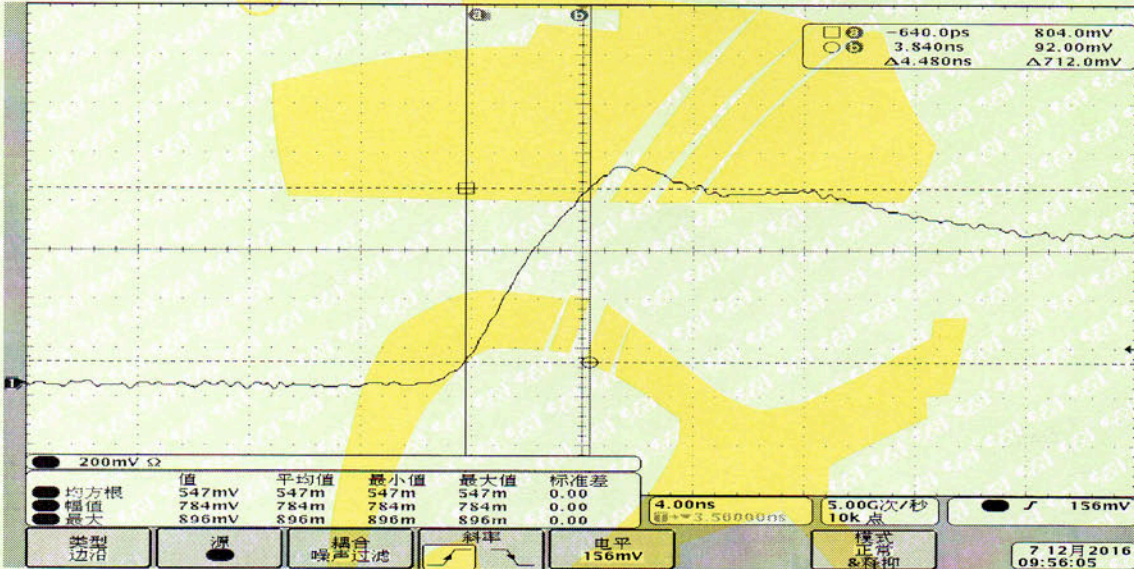
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6. P3b load



7. P3b load

