Fuse Qualification Summary Report - 0AKSX Fuse series

Fuse Type and Rating : 0AKSX 500A
Production Lot Number : ENG'samples
Project Number : FPQ-136
Fuse Part Number : 0AKSBK500-XX

Reference	Test Description	Testing Condition	Acceptance Criteria	Result
GB/T31456.1 GB/T31465.6	Cold resistance	Ambient Temperature 23+-5℃ current ≤10% In, Measure Point: Fuse Cap	Record data	9/9 pass
GB/T31456.1 GB/T31465.6	Temperature rise test	Ambient Temperature 23+-5℃; Current: 50% of rated current,wire cable:50mm²	Record data	4/4 pass
GB/T31456.1 GB/T31465.6	Temperature and humidity cycle	Make 10 temperature / humidity change cycles in the constant temperature and humidity tank according to the standard	No appearance damage, Rc change <10%	3/3 pass
GB/T31456.1 GB/T31465.6	Thermal shock resistance test	48cycles, -40°C-100°C;	No appearance damage, Rc change <10%	3/3 pass
User-defined	High temperature storage test	Storage under 125degrees for 100hours;	No appearance damage, Rc change <10%	2/2 pass
GB/T31456.1 GB/T31465.6	Vibration Durability	Ambient Temperature 23+-5℃; The vibration frequency should be 10-55Hz, the Max amplitude 1.5mm, 3direction, 2hours per direction	No appearance damage, Rc change <10%	6/6 pass
GB/T31456.1 GB/T31465.6	Transient current intermittent cycle durability test	Ambient Temperature 23+-5℃; One cycle contain a current of 2In/0.25sec, and follow by current of 0.5In/15sec; Total 50000cycle	No appearance damage, Rc change <10%	1/1 pass
GB/T31456.1 GB/T31465.6	Wipe off the Lubricant & Fuel oil	Wipe the marking with fuel oil and lubricant for 30sec each	After test, marking is clear and identifiable	8/8 pass
GB/T31456.1 GB/T31465.6	Strength of fuse links	Tighten and loosed the fuses(M8) with 12+/-1 Nm torque for 3 times	Terminals maintain integrated after test.	8/8 pass

Reported By: Hongguo Hu

Approved by: Simon Chiu

Test Complete Date: Apr 15 , 2020

Cold resistance

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Condition : **GB/T31456.1GB/T31465.6**

Ambient Temperature 23+-5℃ current ≤10% In, Measure Point: Fuse Cap

Type:	0AKSB 500A					
Start Date:	12/30/2019			End Date:	12/30/2019	
Room Temp.:	25	℃		Room Humi.:	50	%
No.\Name	Cold Resistance	Visual Check	No.\Name	Cold Resistance	Visual Check	
Unit:	mΩ		Unit:	mΩ		
Upper Limit:		No Visual Damage	Upper Limit:		No Visual Damage	
Lower Limit:			Lower Limit:			
1	0.1586	pass	5	0.1568	pass	
2	0.1588	pass	6	0.1598	pass	
3	0.1590	pass	7	0.1581	pass	
4	0.1563	pass	8	0.1579	pass	
			9	0.1594	pass	

Temperature rise test

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Condition : **GB/T31456.1GB/T31465.6**
Ambient Temperature 23+-5℃; Current: 50% of rated current,wire cable:50mm²

Type:	0AKSB 500A					
Start Date:	1/16/2020			End Date:	1/16/2020	
Room Temp.:	27	℃		Room Humi.:	50	%
No.\Name	Cold resistance	Temperature rise @0.5In	Visual Check			
Unit:	mΩ	K				
Upper Limit:			No Visual Damage			
Lower Limit:						
1	0.1579	60.6	pass			
2	0.1572	57.4	pass			
5	0.1522	58.3	pass			
6	0.1580	58.8	pass			

Temperature and humidity cycle

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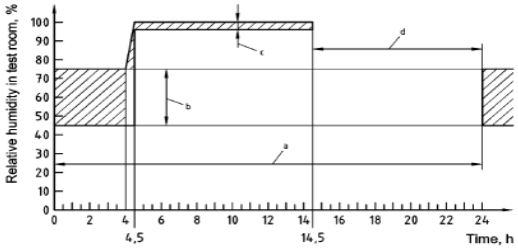
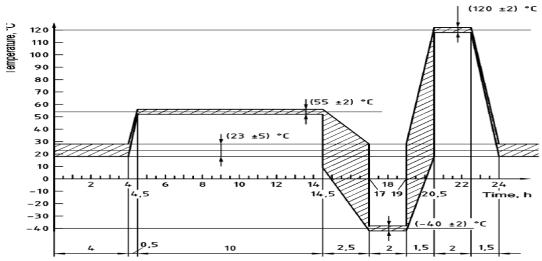
Condition : **GB/T31456.1GB/T31465.6**

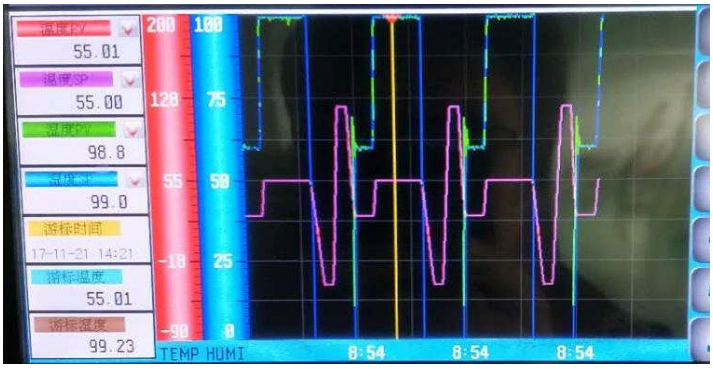
Make 10 temperature / humidity change cycles in the constant temperature and humidity tank according to the standard

24hours/cycles





Type:	0AKSB 500A					
Start Date:	12/30/2019			End Date:	1/10/2020	
Room Temp.:	25	℃		Room Humi.:	50	%
No.\Name	Cold Resistance	Rc change	Visual Check			
Unit:	mΩ	%				
Upper Limit:		10%	No Visual Damage			
Lower Limit:		-10%				
1	0.1595	0.57%	pass			
2	0.1588	0.00%	pass			
3	0.1584	-0.38%	pass			



Thermal shock resistance test

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Condition : **GB/T31456.1GB/T31465.6**

48cycles, -40° C-100° C;

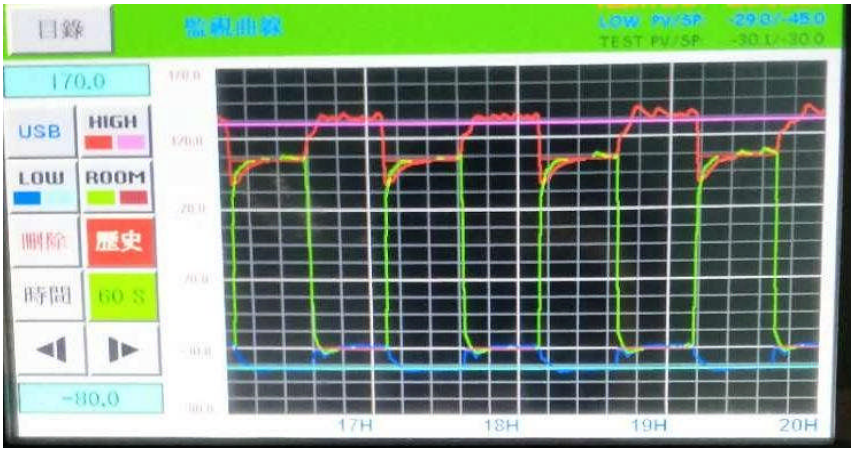
The condition of a single cycle:

-Leave the test pieces inside the room at (-30±2)℃ for 30 minutes.

-Move then to another room at (100±2)℃ within 15 seconds and leave them for 30 minutes.

-Move them back to the original room at (-30±2)℃ within 15 seconds.

Type:	0AKSB 500A					
Start Date:	12/30/2019			End Date:	1/2/2020	
Room Temp.:	26	℃		Room Humi.:	51	%
No.\Name	Cold Resistance	Rc change	Visual Check			
Unit:	mΩ	%				
Upper Limit:		10%	No Visual Damage			
Lower Limit:		-10%				
4	0.1559	-0.26%	pass			
5	0.1531	-2.36%	pass			
6	0.1575	-1.44%	pass			



High temperature storage test

Fuse Type and Rating : 0AKSX 500A
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Condition : **User-defined**
Storage under 125degrees for 100hours;

Type:	0AKSB 500A					
Start Date:	1/6/2020			End Date:	1/14/2020	
Room Temp.:	24.6	℃		Room Humi.:	66	%
No.\Name	Cold Resistance	Rc change	Visual Check			
Unit:	mΩ	%				
Upper Limit:		10%	No Visual Damage			
Lower Limit:		-10%				
7	0.1588	0.44%	pass			
8	0.1585	0.38%	pass			

Vibration Durability

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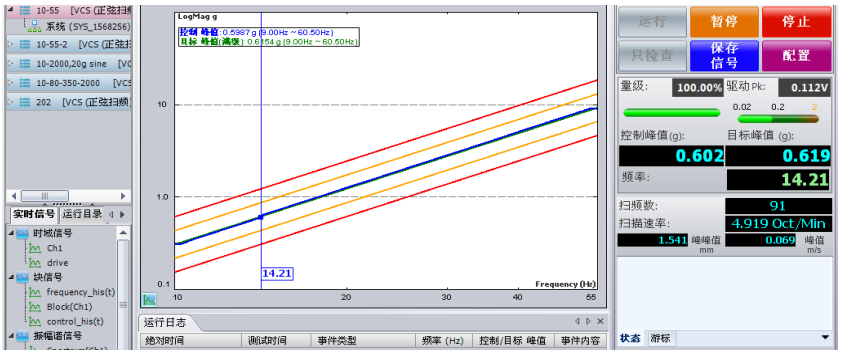
Condition : **GB/T31456.1GB/T31465.6**

Ambient Temperature 23+-5℃; The vibration frequency should be 10-55Hz, the Max amplitude 1.5mm, 3direction, 2hours per direction

Type:	0AKSB 500A					
Start Date:	1/14/2020			End Date:	1/14/2020	
Room Temp.:	26	℃		Room Humi.:	44	%
No.\Name	Cold Resistance	Rc change	Visual Check			
Unit:	mΩ	%				
Upper Limit:		10%	No Visual Damage			
Lower Limit:		-10%				
1	0.1579	-1.00%	pass			
2	0.1572	-1.01%	pass			
3	0.1567	-1.07%	pass			
4	0.1553	-0.38%	pass			
5	0.1522	-0.59%	pass			
6	0.1580	0.32%	pass			



Transient current intermittent cycle durability test

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Condition : **GB/T31456.1GB/T31465.6**

Ambient Temperature 23+-5℃; One cycle contain a current of 2In/0.25sec, and follow by current of 0.5In/15sec;
Total 50000cycle

Type:	0AKSB 500A					
Start Date:	3/19/2020			End Date:	4/10/2020	
Room Temp.:	25.3	℃		Room Humi.:	63	%
No.\Name	Cold Resistance	Rc change	Visual Check			
Unit:	mΩ	%				
Upper Limit:		10%	No Visual Damage			
Lower Limit:		-10%				
1	0.1587	0.51%	pass			

Wipe off the Lubricant & Fuel oil

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Condition : **GB/T31456.1GB/T31465.6**
Wipe the marking with fuel oil and lubricant for 30sec each

Type:	0AKSB 500A					
Start Date:	4/11/2020			End Date:	4/11/2020	
Room Temp.:	25.3	℃		Room Humi.:	63	%
No.\Name	Marking still legible		No.\Name	Marking still legible		
1	pass		5	pass		
2	pass		6	pass		
3	pass		7	pass		
4	pass		8	pass		

Strength of fuse links

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Condition : **GB/T31456.1GB/T31465.6**
Tighten and loosed the fuses(M8) with 12+/-1 Nm torque for 3 times

Type:	0AKSB 500A					
Start Date:	4/11/2020			End Date:	4/11/2020	
Room Temp.:	25.3	℃		Room Humi.:	63	%
No.\Name	The frequency of Tighten and loosed	Visual Check	No.\Name	The frequency of Tighten and loosed	Visual Check	
Unit:			Unit:			
Upper Limit:		No Visual Damage	Upper Limit:		No Visual Damage	
Lower Limit:	3		Lower Limit:	3		
1	>3	pass	5	>3	pass	
2	>3	pass	6	>3	pass	
3	>3	pass	7	>3	pass	
4	>3	pass	8	>3	pass	