

Design Verification Test Report - 0ALL Fuse series

Fuse Type and Rating : 0ALL 300A/315A

Production Lot Number : ENG'samples

Project Number : FPQ-168

Fuse Part Number : 0ALLBK300-EA, 0ALLBK315-EA

Reference	Test Description	Testing Condition	Acceptance Criteria	Result
UL248-1	Cold resistance	Ambient Temperature 23+/-5°C, current <10% In, Test point: terminal	Record real data	24/24 pass
ISO8820-8 & JASO D622	Temperature rise test	Ambient Temperature 23+/-5°C, current 50% of rated current	Temperature Rise <50K	4/4 pass
JASO D622 6.3.4.1	Temperature and humidity cycle	Temp.: -40°C ~ +120°C, each cycle 24hrs, total 10 cycles	No visual Damage, Resistance change <10%	4/4 pass
ISO8820-8 & JASO D622 6.3.6	Thermal shock resistance test	Temp.: -30°C ~ +100°C, 30 minutes for each extremum, Transfer time is15 seconds max, total 48 cycles	No visual Damage, Resistance change <10%	4/4 pass
User-defined	High temperature storage test	Storage under 125°C for 100hrs	No visual Damage, Resistance change <10%	4/4 pass
JASO D622 6.3.3	Vibration Durability	Ambient temperature: 23+/-5°C Vibration frequency:10-55Hz -Max amplitude 1.5mm Pace time: 1min per cycle 3 direction, 2hours per direction, total 6 hours	No visual Damage, Resistance change <10%	4/4 pass
JASO D622 6.3.2	Transient current intermittent cycle durability test	Ambient temperature: 23+/-5°C One cycle contains a current of 2In/0.25sec, and follow by current of 0.5In/15sec, total 50000cycles	No visual Damage, Resistance change <10%	4/4 pass
GB/T31465.15.4	Lubricant & Fuel oil resistance	Wipe the marking with fuel oil and lubricant for 30sec each	After test, marking is clear and identifiable	2/2 pass
JASO D622 & ISO8820-8	Strength of fuse links	Tighten and loosed the fuses with 20+/-1 Nm torque for 3 times	Terminals maintain integrated after test	4/4 pass

Reported By: Hongguo Hu

Approved by: Simon Chiu

Test Complete Date: Nov 22, 2022

Cold resistance

Fuse Type and Rating : 0ALL 300A/315A

Production Lot Number : ENG'samples

Project Number : FPQ-168

Fuse Part Number : 0ALLBK300-EA, 0ALLBK315-EA

Condition : UL248-1

Ambient Temperature 23+/-5°C, current <10% In, Test point: terminal

Rating	Unit	Cold Resistance	Visual Check	Result
		mΩ		
0ALL 300A	1	0.4962	No Visual Damage	Pass
	2	0.4920	No Visual Damage	Pass
	3	0.4950	No Visual Damage	Pass
	4	0.4901	No Visual Damage	Pass
	5	0.4906	No Visual Damage	Pass
	6	0.4933	No Visual Damage	Pass
	7	0.4956	No Visual Damage	Pass
	8	0.4947	No Visual Damage	Pass
	9	0.4976	No Visual Damage	Pass
	10	0.4910	No Visual Damage	Pass
	11	0.4908	No Visual Damage	Pass
	12	0.4912	No Visual Damage	Pass
0ALL 315A	1	0.4650	No Visual Damage	Pass
	2	0.4593	No Visual Damage	Pass
	3	0.4602	No Visual Damage	Pass
	4	0.4583	No Visual Damage	Pass
	5	0.4578	No Visual Damage	Pass
	6	0.4594	No Visual Damage	Pass
	7	0.4596	No Visual Damage	Pass
	8	0.4625	No Visual Damage	Pass
	9	0.4618	No Visual Damage	Pass
	10	0.4607	No Visual Damage	Pass
	11	0.4591	No Visual Damage	Pass
	12	0.4616	No Visual Damage	Pass

Tested by: Efag He

Tested completed date: Oct 11, 2022

Temperature rise test

Fuse Type and Rating : 0ALL 300A/315A

Production Lot Number : ENG'samples

Project Number : FPQ-168

Fuse Part Number : 0ALLBK300-EA, 0ALLBK315-EA

Condition : ISO8820-8 & JASO D622

Ambient Temperature 23+/-5°C, current 50% of rated current

Room temp.: 23.3°C , RH 56%

Rating	Unit	Cold Resistance	Temp. rise@0.5In	Result
		mΩ	< 50 K	
0ALL 300A	1	0.4962	32.5	Pass
	2	0.4920	31.6	Pass
0ALL 315A	1	0.4650	38.6	Pass
	2	0.4593	37.4	Pass

Tested by: Efaq He

Tested completed date: Oct 13, 2022

Temperature and humidity cycle

Fuse Type and Rating : 0ALL 300A/315A

Production Lot Number : ENG'samples

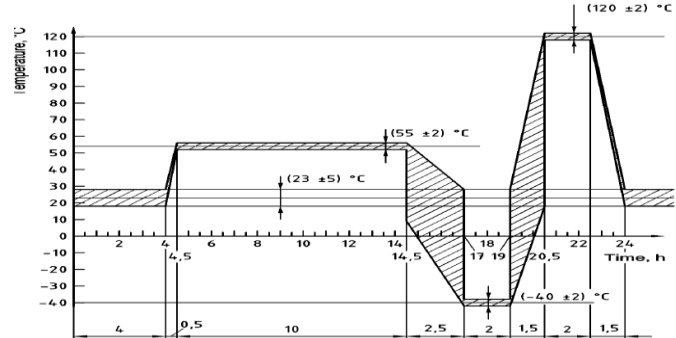
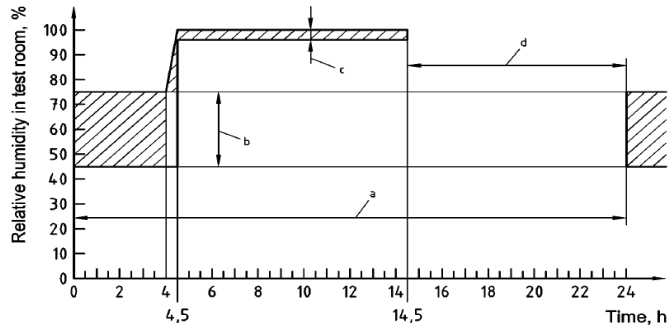
Project Number : FPQ-168

Fuse Part Number : 0ALLBK300-EA, 0ALLBK315-EA

Condition : JASO D622 6.3.4.1

Temp.: -40°C ~ +120°C, each cycle 24hrs, total 10 cycles

Room temp.: 24.1°C , RH 53%



Rating	Unit	Cold Resistance	Resistance after test	change %	Visual Check	Result
		mΩ	mΩ	R		
0ALL 300A	3	0.4950	0.4979	0.59%	No visual damage	Pass
	4	0.4901	0.4939	0.78%	No visual damage	Pass
0ALL 315A	3	0.4602	0.4617	0.33%	No visual damage	Pass
	4	0.4583	0.4602	0.41%	No visual damage	Pass

Tested by: Efag He

Tested completed date: Oct 24, 2022

Thermal shock resistance test

Fuse Type and Rating : 0ALL 300A/315A

Production Lot Number : ENG'samples

Project Number : FPQ-168

Fuse Part Number : 0ALLBK300-EA, 0ALLBK315-EA

Condition : ISO8820-8 & JASO D622 6.3.6

Temp.: -30°C ~ +100°C, 30 minutes for each extremum, Transfer time is 15 seconds max, total 48 cycles

Room temp.: 24.5°C , RH 57%

Rating	Unit	Cold Resistance	Resistance after test	change %	Visual Check	Result
		mΩ	mΩ	R		
0ALL 300A	5	0.4906	0.4925	0.39%	No visual damage	Pass
	6	0.4933	0.4951	0.36%	No visual damage	Pass
0ALL 315A	5	0.4578	0.4593	0.33%	No visual damage	Pass
	6	0.4594	0.4612	0.39%	No visual damage	Pass

Tested by: Efag He

Tested completed date: Oct 24, 2022

High temperature storage test

Fuse Type and Rating : 0ALL 300A/315A

Production Lot Number : ENG'samples

Project Number : FPQ-168

Fuse Part Number : 0ALLBK300-EA, 0ALLBK315-EA

Condition : User-defined

Storage under 125°C for 100hrs

Room temp.: 25.1°C , RH 57%

Rating	Unit	Cold Resistance	Resistance after test	change %	Visual Check	Result
		mΩ	mΩ	R		
0ALL 300A	7	0.4956	0.4985	0.59%	No visual damage	Pass
	8	0.4947	0.4966	0.38%	No visual damage	Pass
0ALL 315A	7	0.4596	0.4607	0.24%	No visual damage	Pass
	8	0.4625	0.4659	0.74%	No visual damage	Pass

Tested by: Efag He

Tested completed date: Oct 22, 2022

Vibration Durability

Fuse Type and Rating : 0ALL 300A/315A

Production Lot Number : ENG'samples

Project Number : FPQ-168

Fuse Part Number : 0ALLBK300-EA, 0ALLBK315-EA

Condition : JASO D622 6.3.3

Ambient temperature: 23+/-5oC

Vibration frequency:10-55Hz -Max amplitude 1.5mm

Pace time: 1min per cycle

Room temp.: 26.2°C , RH 62%

Rating	Unit	Cold Resistance	Resistance after test	change %	Visual Check	Result
		mΩ	mΩ	R		
0ALL 300A	9	0.4976	0.5014	0.76%	No visual damage	Pass
	10	0.4910	0.4938	0.57%	No visual damage	Pass
0ALL 315A	9	0.4618	0.4659	0.89%	No visual damage	Pass
	10	0.4607	0.4640	0.72%	No visual damage	Pass

Tested by: Efag He

Tested completed date: Oct 28, 2022

Transient current intermittent cycle durability test

Fuse Type and Rating : 0ALL 300A/315A

Production Lot Number : ENG'samples

Project Number : FPQ-168

Fuse Part Number : 0ALLBK300-EA, 0ALLBK315-EA

Condition : JASO D622 6.3.2

Ambient temperature: 23+/-5oC

One cycle contains a current of 2In/0.25sec, and follow by current of 0.5In/15sec, total 50000cycles

Room temp.: 25.3°C , RH 58%

Rating	Unit	Cold Resistance	Resistance after test	change %	Visual Check	Result
		mΩ	mΩ	R		
0ALL 300A	11	0.4908	0.4917	0.18%	No visual damage	Pass
	12	0.4912	0.4923	0.22%	No visual damage	Pass
0ALL 315A	11	0.4591	0.4606	0.33%	No visual damage	Pass
	12	0.4616	0.4657	0.89%	No visual damage	Pass

Tested by: Efaq He

Tested completed date: Nov 16, 2022

Lubricant & Fuel oil resistance

Fuse Type and Rating : 0ALL 300A/315A

Production Lot Number : ENG'samples

Project Number : FPQ-168

Fuse Part Number : 0ALLBK300-EA, 0ALLBK315-EA

Condition : GB/T31465.15.4

Wipe the marking with fuel oil and lubricant for 30sec each

Room temp.: 24.1°C , RH 57%

Rating	Unit	Cold Resistance	After test	Result
		mΩ		
0ALL 300A	7	0.4956	Marking still legible	Pass
	8	0.4947	Marking still legible	Pass

Tested by: Efag He

Tested completed date: Oct 26, 2022

Strength of fuse links

Fuse Type and Rating : 0ALL 300A/315A

Production Lot Number : ENG'samples

Project Number : FPQ-168

Fuse Part Number : 0ALLBK300-EA, 0ALLBK315-EA

Condition : JASO D622 & ISO8820-8

Tighten and loosed the fuses with 20+/-1 Nm torque for 3 times

Room temp.: 25.1°C , RH 55%

Rating	Unit	Cold Resistance	Number of installations and disassembly	Visual Check after test	Result
		mΩ			
0ALL 300A	3	0.4950	>3	No Visual Damage	Pass
	5	0.4906	>3	No Visual Damage	Pass
	10	0.4910	>3	No Visual Damage	Pass
	11	0.4908	>3	No Visual Damage	Pass

Tested by: Efad He

Tested completed date: Nov 17, 2022