 XIAMEN NINGLY. ELECTRONICS CO., LTD.	<b>PRODUCT SPECIFICATION</b>	ISSUED DATE: REV. NO.: DOC. NO.: PAGE:	2005/6/14 A02 NLD-PSI-063 Page 1 of 3
	51NM, 52NM ROHS SERIES		

PREPARED BY		CHECKED BY		APPROVED BY	
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1. SCOPE

This specification defines the technical requirement of miniature fuse type 51NM,52NM/51NM(P) ROHS SERIES which are approved by UL、CSA, PSE and KTL

2. APPLICABLE STANDARD & APPROVED DETAILS

2.1 APPLICABLE STANDARD

Applicable standard for 51NM, 52NM ROHS SERIES: UL248-1 UL248-14 CSA C22.2 NO.248.1-00 CSA C22.2 NO.248.14-00 METI (PSE) 02(KTL)

2.2 APPROVED DETAILS

RATED VOLTAGE	PSE			UL		UR		CSA		KTL	
	APPROVED RANGE	CERT. NO:		APPROVED RANGE	CERT. NO:	APPROVED RANGE	CERT. NO:	APPROVED RANGE	CERT. NO:	APPROVED RANGE	CERT. NO:
125V	51NM	1A~5A	JET 2489-31003-1001	32mA-8A	E1564 71	3A~8A	E1564 71	32mA-8A	LR1011 78	100mA-250mA	SU05008-3003
		5.1A~15A	JET 2489-31003-1004								
	52NM	1A~5A	JET 2489-31003-1005								
		5.1A~15A	JET 2489-31003-1006								
250V	51NM	1A~5A	JET 2489-31003-1002	32mA-2.5A	71	3A~8A	E1564 71	32mA-8A	LR1011 78	2.5A-7A	SU05008-3028
		5.1A~15A	JET 2489-31003-1003								
	52NM	1A~5A	JET 2489-31003-1016								
		5.1A~15A	JET 2489-31003-1007								

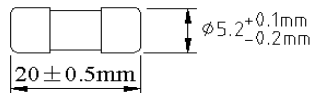
3. MATERIAL

PART	MATERIAL	REMARK
Cap	Brass	Nickel Plated
Tube	Clear Glass tube	
Cap with Lead	Brass	Nickel Plated
Lead	Tin.-Plated Copper	
Solder	≤12A(51NM)and <10A (52NM/51NM(P)): Pb Free; >12A (51NM) and≥10A(52NM/51NM(P)): Pb Contained High temperature Solder	
Element	Wire (A, B <sub>1</sub> , C)	

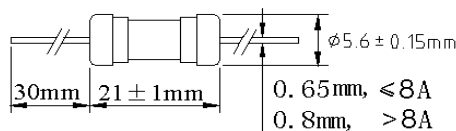
4. DIMENSION & CONSTRUCTION

4.1 DIMENSION

51NM



52NM,51NM(P)



4.2 GLASS TUBE


Tube shall be transparent as to be easily distinguished fusing element with naked eyes and the tube shall have no defects such as crack, injury and contamination.

4.3 CAP

Cap should be firmly attached so that it is not possible to remove them without damaging the fuse itself. The means of attachment shall be sufficient to withstand an axial pull of 5N applied to each cap for 1 minute. The cap shall be nickel plated firmly.

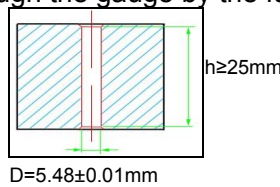
4.4 SOLDERING JOINT

Soldering joint in end cap shall not melt during normal operation and shall not have solder clips on tube, element in view and outer surface of caps.

 XIAMEN NINGLY. ELECTRONICS CO., LTD.	<b>PRODUCT SPECIFICATION</b>	ISSUED DATE:	2005/6/14
	51NM, 52NM ROHS SERIES	REV. NO.:	A02
		DOC. NO.:	NLD-PSI-063
		PAGE:	Page 2 of 3

#### 4.5 ALIGNMENT

The entire length of the fuse shall pass through the gauge by the fuses own weight. The construction of gauge is as follows:



#### 5.MECHANICAL PERFORMANCES

Fuse shall withstand three following tests:

- 5.1 Rotational strength: When one end cap of the specimen is fixed and then the torque 30N.mm is applied to the other end cap clockwise and counterclockwise, no loosening of end caps at both ends nor damage of fuse-tube shall occur.
- 5.2 Tensile strength: When one end cap of the specimen is fixed and then the tensile force 5N is applied to the other end cap in a direction to separate the end caps, no loosening of end caps or damage of fuse-tube shall occur.
- 5.3 Strength of Fuse-tube: When middle parts of end caps at both ends of the specimen are supported and then the force 25N is applied to the middle part of the fuse-tube, no damage of the fuse-tube shall occur.

#### 6. ELECTRICAL PERFORMANCE

##### 6.1TEST CONDITION

All electrical tests are to be conducted with the ambient air at a temperature of 24±3°C. The air temperature is not to vary more than 5 °C during the test, and is to be within these limits.

##### 6.2CURRENT-CARRYING CAPACITY TEST

A fuse shall carry 100% of rated current for 4hrs and more, without clearing the circuit during this test. While the fuse is carrying this current no soldered connection shall melt and a casing or enclosure shall not char or rupture in any manner.

##### 6.3 TEMPERATURE TEST

The circuit is be made to carry 100% of the fuse rating. After thermal equilibrium is reached, the temperature rise on the surface of each fuse shall be 75°C or less.

Note: temp. Rise =fuse temp.-room temp.

##### 6.4 PRE-ARCING TIME/CURRENT CHARACTERISTIC


When a current equal to the rated current multiplied by the rate of fusing current given in the following table is passed, shall be the pre-arcing time given in the following table. After this test, there shall be neither damaged of the fuse-tube nor shattered of the cap.

% of Amp rating	Opening Time
135%	1 hour MAX
200%	5 sec MAX

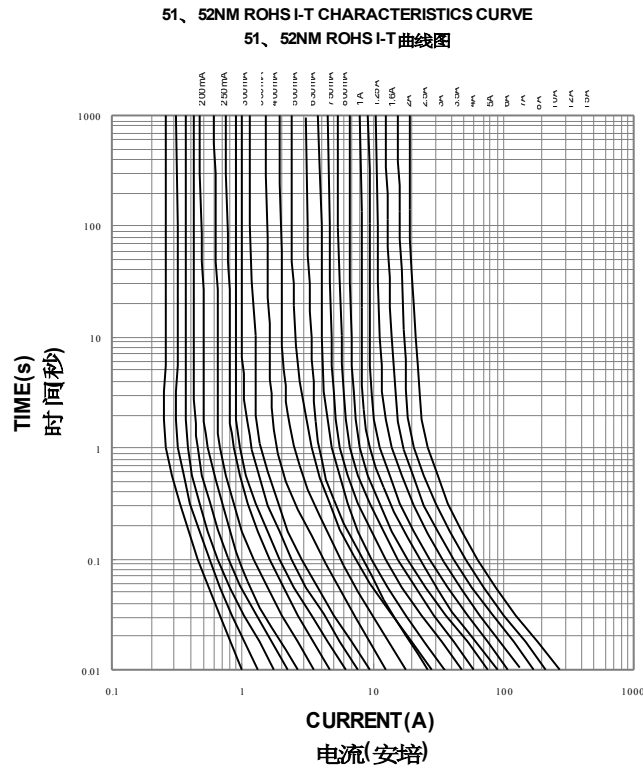
##### 6.5 INTERRUPTING ABILITY

The interrupting ability should reach the interrupting current rating given in the following table. And after this test, there should be neither damaged of the fuse-tube nor shattered of the caps. After this test, the insulation resistance between the end caps shall be not less than 0.2MΩ.

RATED VOLTAGE	RATED CURRENT	INTERRUPTING RATING					
		UL	UR	CSA	PSE		KTL
125V	ALL	10,000A		10,000A	51NM	100A	
					52NM	500A	
250V	0-1A	35A	100A	35A	100A	100A	
	1.1A-3.5A	100A		100A			
	3.5A-10A	200A		200A			
	10.1A—15A	750A		750A			

 XIAMEN NINGLY. ELECTRONICS CO., LTD.	<b>PRODUCT SPECIFICATION</b>	ISSUED DATE: REV. NO.: DOC. NO.: PAGE:	2005/6/14 A02 NLD-PSI-063 Page 3 of 3
	51NM, 52NM ROHS SERIES		

## 6.6 TIME-CURRENT CHARACTERISTIC CURVE



6.7 Soldering parameters: Wave solder---260°C, 10 sec Maximum。

## 7. MARKING

7.1 The marking on fuse shall be indelibly marked on end cap and easily visible.

7.2 The symbol for every fuse shall be as prescribed below:

- 1) Approval safety logo:      
- 2) Type: 51NM, 52NM
- 3) Trademark: 
- 4) Rated current
- 5) Rated voltage

Note: 1), 2), 3) should be marked on the same side cap of the fuse.

4), 5) should be marked on the other side cap of the fuse.

7.3 The smallest package in which the fuses are supplied shall containing the Type, Rated current, Rated voltage, Interrupting rating, Approval safety logo, Lot. No., Trademark.

## 8. PACKAGING REQUIREMENT

8.1 Domestic sales:

8.1.1 NO LEAD TYPE:200EA/small bag→25 small bags/big bag→2 big bags/small external carton;

8.1.2 LEAD TYPE:100EA/small bag→25 small bags/big bag→4 big bags/big external carton.

small external carton dimensions: long×width×high=32×24×16.5cm;

Big external carton dimensions : long×width×high=35.5×29.5×26cm;

8.2 Oversea sales:

8.2.1 NO LEAD TYPE:200EA/small bag→5 small bags/box→10 boxes/middling external carton;

8.2.2 LEAD TYPE:100EA/small bag→5 small bags/box→10 boxes/middling external carton;

Middling external carton dimensions: long×width×high=35.5×29.5×26cm;

8.3 Packaging shall be so carried out that the products will not absorb moisture or be damaged during transportation or storage.