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SPECIFICATION APPROVAL SHEET

Polyurethane Overcoated With Polyamide

Film Insulated Enamelled Copper Wire

UEFN/U(155°C) Type 1

Size Range : (0. 05-2.60)

NOTE：Approval content

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ADD：22th building, Jinlian Economic Industrial Park, 300350, Jinnan District, Tianjin

1. Materials name:

1.1.Conductor Materials : The conductor shall be the annealed copper wire specified in JISC 3103 .

1.2.Insulation Materials : The insulating film of the wire shall be made by baking insulating varnish mainly composed of high thermal polyurethane and overcoat polyamide on the conductor uniformly and perfectly .

1.3 Thermal Class : MW80-C 155°C class F.

1.4 Environment request : Conforms to "ROHS" and "does not have the halogon" the request.

2.Examinatiom item and characteristic :

Item	Characteristic
Appearance	(1)Surface no injuries and adhesion (2)Smooth surface and color uniform (3)Insulation film is not nail scrape
Dimension	The size shall be as given in table(non JIS specifications to another branch calculated)
Pinhole	DC 12V 1min, Maximum 5 take a test piece of about 5M
Flexibility & Adherence	No visible cracks appear on the film coating when using 15 times magnifier.
Resistance to abrasion	The size shall be as given in table 1
Dielectric breakdown voltage	Shall meet the values specified in attached table 1
Resistance to cut though	Not less than 200°C and 2 min
Resistance to heat shock	(1)Film shall show no crack though which conductor is visible (2)The specimen shall be heat to 175°C, 20% 3d 1/2hour (0.05~1.628mm) (3)The specimen shall be heat to 175°C, 25% 5d 1/2hour(1.628↑~2.60mm)
Solderability	Solder shall adhere to the conductor uniformly
Conductor resistance	Shall meet the values specified in attached table 1
Elongation	Shall meet the values specified in attached table 1

3. Test methods:

3.1 Appearance: Comply with JISC3216.

3.2 Dimension: Comply with JISC3216-2.

3.3 Pinhole: Comply with JISC3216-5.

3.4 Flexibility & Adherence: Comply with JISC3216-3.

3.5 Resistance to abrasion: Comply with JISC3216-3.

3.6 Dielectric breakdown voltage: Comply with JISC3216-5.next table of hook no and twist number.

Conductor diameter(mm)	Hook no(g)	Length 12cm of twist number
0.05	3	50
0.06~0.07	5	40
0.08~0.11	10	30
0.12~0.17	40	24
0.18~0.29	120	20
0.30~0.45	350	16
0.50~0.70	450	12
0.75~1.20	1500	9
1.30~2.00	4000	6
2.10~3.20	7000	3

3.7.Resistance to Cut through test : Comply with NO.3.50 of MW 1000 test Not less than 200°C. So next table of exert weight:

Conductor diameter(mm)	Exert weigh(g)
0.04~0.071	100
0.079~0.114	150
0.127~0.254	250
0.287~0.361	300
0.404~0.455	600
0.511~0.912	1000
1.024~1.628	2000

3.8 Resistance to heat shock test: Comply with NO.3.5 of MW1000 test:

Conductor diameter(mm)	Elongation or diameter of winding mandrel
0.051~0.226	20%↑ 3d
0.254~1.628	20% 3d
1.628↑~2.60	25% 5d

3.9.Resistance to solvent test : Comply with JISC3216-4 test.

3.10.Solderability : Comply with JISC3216-4 test; Above with 1.6mm specification Comply with part 3 No.3.13 of NEMA MW1000. So next table of dipping time:

Conductor diameter (mm)	Dipping time (second)
0.32↓	380°C/2S
0.35~0.50	380°C/3S
0.55~1.00	380°C/4S
1.10~1.50	380°C/5S
1.60	380°C/6S

Conductor diameter (mm)	Dipping time (second)
1.628~1.829↓	430°C/10S
1.829~2.906	430°C/12S

3.11.Conductor resistance test: Comply with JISC3216-5 test.

3.12.Elongation : Comply with JISC3216-3 test. The size shall be as given in table 1

Elongation (%) =[(length between gauge lines with parts in contact) -(gauge length)]/(gauge length)×100

4. Packing of axle specification: So next table

Conductor diameter (φmm)	Gluey of axle		Min. weigh (kg)
	JIS	PEWSC	
0.04~0.09	PT-4	ER-5L	0.5
0.10~0.15	PT-4	ER-5L	1.0
0.16~0.29	PT-10	ER-6L	3.5
0.30~0.69	PT-15	ER-7L	5.0
0.70~2.59	PT-25	ER-9L	9.0
2.60	--	ER-12	10.0

5. Packing:

Mark in the reel

5.1 Wire name and kind

5.2 Conductor diameter

5.3 Operating number

5.4 Manufacturing date

5.5 Net weight of one reel of winding

6.Storage conditions and shelf life.

6.1 There are no specific requirements in any of International Standards (JIS3202、 3003、 NEMA1000).

6.2 Recommend to store in room temperature, dry and ventilated environment.

6.3 If the product is stored more than 3 years, tests should be performed in accordance with International Standards to check its validity before use.

Attached table 1

Diameter (φmm)	Tolerance (mm)	Min. Increase in Diameter (mm)	Max. Overall Diameter (mm)	Min. Dielectric breakdown voltage (v)	Max. Conductor resistance 20°C (Ω/KM)	Min. Elonga-tion (%)	Max. Springiness (°)	Resistance to Abrasion(g)	
								Average	Minimum
0.05	±0.003	0.016	0.083	1900	10240	10	--	--	--
0.06	±0.003	0.016	0.096	1900	6966	10	--	--	--
0.07	±0.003	0.016	0.106	1900	4990	10	--	--	--
0.08	±0.003	0.018	0.118	2000	3778	10	--	--	--
0.09	±0.003	0.018	0.128	2000	2959	10	--	--	--
0.10	±0.008	0.018	0.140	2000	2647	15	--	--	--
0.11	±0.008	0.018	0.150	2000	2153	15	--	--	--
0.12	±0.008	0.020	0.162	2200	1786	15	--	--	--
0.13	±0.008	0.020	0.172	2200	1505	15	--	--	--
0.14	±0.008	0.020	0.182	2200	1286	15	--	--	--
0.15	±0.008	0.020	0.192	2200	1111	15	--	--	--
0.16	±0.008	0.022	0.204	2200	969.5	15	--	--	--
0.17	±0.008	0.022	0.214	2200	853.5	15	--	--	--
0.18	±0.008	0.024	0.226	2400	757.2	15	--	--	--
0.19	±0.008	0.024	0.236	2400	676.2	15	--	--	--
0.20	±0.008	0.024	0.246	2400	607.6	15	--	--	--
0.21	±0.008	0.024	0.256	2400	549.0	15	--	--	--
0.22	±0.008	0.024	0.266	2400	498.4	15	--	--	--
0.23	±0.008	0.026	0.278	2400	454.5	15	--	--	--
0.24	±0.008	0.026	0.288	2400	416.2	15	--	--	--
0.25	±0.008	0.026	0.298	2400	382.5	15	66	--	--
0.26	±0.010	0.026	0.310	2400	358.4	15	66	347	296
0.27	±0.010	0.026	0.320	2400	331.4	15	61	347	296
0.28	±0.010	0.026	0.330	2400	307.3	15	61	347	296
0.29	±0.010	0.026	0.340	2400	285.7	20	61	347	296
0.30	±0.010	0.028	0.352	2800	262.9	20	61	377	316
0.32	±0.010	0.028	0.372	2800	230.0	20	55	388	326
0.35	±0.010	0.028	0.402	2800	191.2	20	50	388	326

Attached table 1

Diameter (φmm)	Tolerance (mm)	Min. Increase in Diameter (mm)	Max. Overall Diameter (mm)	Min. Dielectric breakdown voltage (v)	Max. Conductor resistance 20°C (Ω/KM)	Min. Elonga-tion (%)	Max. Springiness (°)	Resistance to Abrasion(g)	
								Average	Minimum
0.37	±0.010	0.028	0.424	2800	170.6	20	50	398	337
0.40	±0.010	0.030	0.456	2800	145.3	20	76	428	357
0.45	±0.010	0.032	0.508	2800	114.2	20	72	469	388
0.47	±0.010	0.032	0.529	3050	103.7	20	72	500	428
0.50	±0.010	0.034	0.560	3050	91.43	20	67	500	428
0.55	±0.020	0.034	0.620	3050	78.15	20	62	510	428
0.60	±0.020	0.034	0.672	3050	65.26	20	62	510	439
0.65	±0.020	0.036	0.724	3050	55.31	20	58	551	469
0.70	±0.020	0.038	0.776	3050	47.47	20	53	592	500
0.75	±0.020	0.040	0.830	3400	41.19	20	53	622	520
0.80	±0.020	0.042	0.882	3400	36.08	25	66	663	561
0.85	±0.020	0.044	0.934	3400	31.87	25	66	704	592
0.90	±0.020	0.046	0.986	3400	28.35	25	62	745	622
0.95	±0.020	0.048	1.038	3400	25.38	25	62	775	653
1.00	±0.030	0.050	1.102	3400	23.33	25	58	816	683
1.10	±0.030	0.052	1.204	4150	19.17	25	54	857	724
1.20	±0.030	0.052	1.304	4150	16.04	25	54	867	734
1.30	±0.030	0.054	1.408	4150	13.61	25	50	908	765
1.40	±0.030	0.054	1.508	4150	11.70	25	46	918	765
1.50	±0.030	0.056	1.612	4150	10.16	25	46	969	800
1.60	±0.030	0.056	1.712	4150	8.906	25	42	1000	847
1.70	±0.03	0.058	1.814	4350	7.871	25	--	1020	887
1.80	±0.03	0.058	1.914	4350	7.007	25	--	1020	887
1.90	±0.03	0.060	2.018	4350	6.278	25	--	1120	928
2.00	±0.03	0.060	2.118	4350	5.656	30	--	1120	938
2.10	±0.03	0.062	2.220	4350	5.123	30	--	1120	969
2.20	±0.03	0.064	2.322	4350	4.662	30	--	1220	1000
2.30	±0.03	0.064	2.422	4350	4.260	30	--	1220	1010
2.40	±0.03	0.066	2.526	4350	3.908	30	--	1220	1020
2.50	±0.03	0.068	2.628	4350	3.598	30	--	1330	1120
2.60	±0.03	0.068	2.728	4350	3.324	30	--	1330	1120