

Approval Sheet

FOR DISTRELEC

PART NO.: 143-37-270 (U12N033C180)

DESIGN NO.: SR-1804169-A

DATE: April 24. 2018

REMARK:

APPROVED BY (PLEASE SIGN)			

**ONTOP ELECTRONIC CO., LTD.
SACONTOP CO., LTD.**

台北市中山北路六段一六一號二樓之二
2F-2, NO.161, SEC.6, CHUNG SHANG N. RD., TAIPEI, TAIWAN
TEL: +886-2-2838-2606
FAX: +886-2-2838-2604
EMAIL: sale@sac-ontop.com.tw

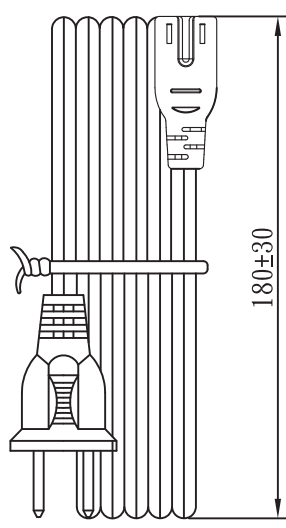
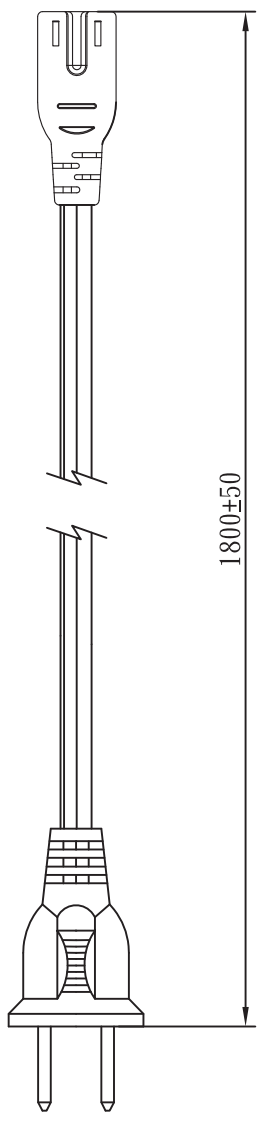
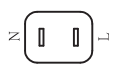
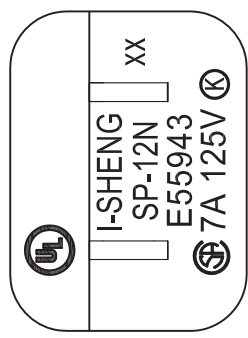
Our power supply itself is with EMC(EMI+EMS) approval. We don't have Customer's end-product, please double check EMC or peak current or any necessary request after mating with your product with our power supply.

We will produce the goods per the sample + the specification shown on this approval sheet, if you have any question on our sample or our approval sheet such as O/P, dc plug, polarity, safety, protection characteristic (OCP/OVP..etc.) please inform us before signing back the approval sheet. Thanks.

**** IMPORTANT ****

If you want to supply the safety for power supply only or complete set (your product + our power supply), pls contact us to check details in advance. Thanks.

No	品名規格	數量	料號
1	KWC-50T 銅片	2 pcs	BBN50T02
2	PVC 30P (SP-12N)	12.5 g	RPP03012
3	IS-033C 磷青銅銅管	2 pcs	BPP0037B
4	IS-033C 內模套	1 pcs	MI33C012
5	PVC 50P (IS-033C)	6.2 g	RPP05012
6	扎帶 (黑色, 6寸)	1 pcs	KBBPE115



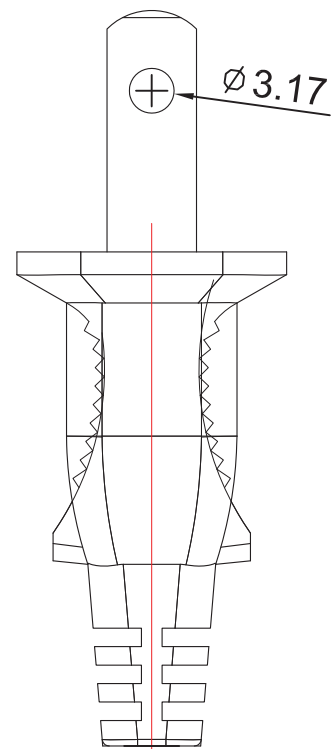
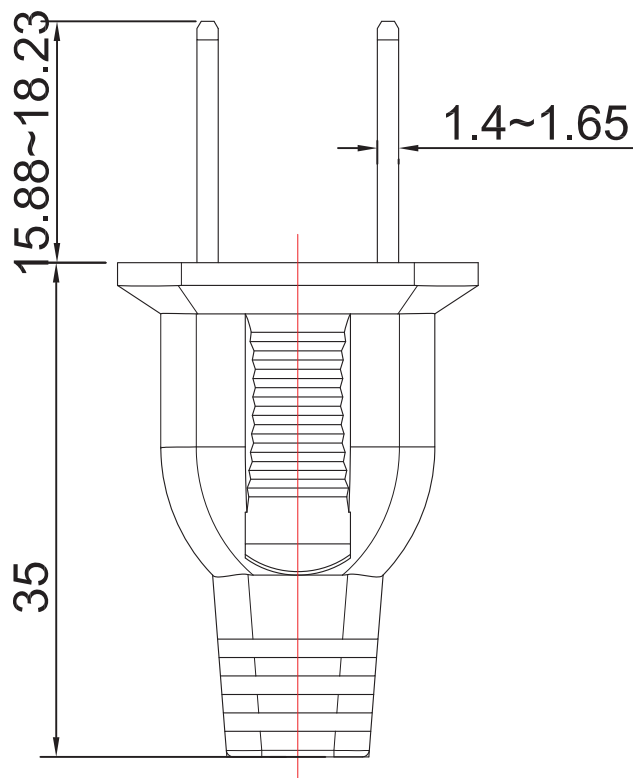
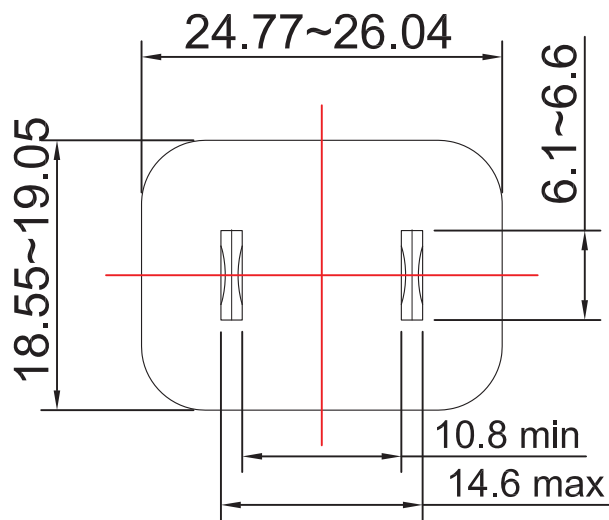
配線顏色:


N: Stripe 有條紋邊
L: Non-Stripe 無條紋邊

線材印字: (凹字)

(UL) E314513 SPT-2 60°C 2X18AWG(0.824mm²) 300V VW-1 I-SHENG
CSA LL81924 TYPE SPT-2 60°C 2X0.824mm² (18AWG) 300V VW-1

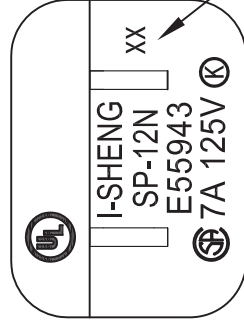
線材	SPT-2 18AWGx2C 60°C 凹 CT-12 (BLACK)		
插頭	SP-12N + IS-033C	剪線長度	1800
客戶名稱	Distrelec	單重	
	143-37-270	KS 圖號	SR-1804169
	I-SHENG ELECTRONICS (KUN SHAN) CO., LTD.		制圖 馬林娣 2018.04.24
	鎰勝電子科技(昆山)有限公司		審核 汪華高 2018.04.24
			核准 林駿宇 2018.04.24
T17 2S2116 12 180 00			



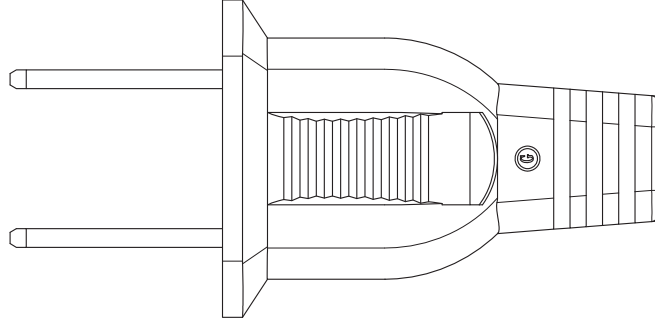
DWG. NAME	TYPE AND DIMENSIONS			TOLERANCE	
APPLY TO STANDARD	AMERICA APPROVAL POWER SUPPLY CORD				
ISSUE DATE	2000/08/29	REV.	E	≤ 1.0	±0.3
REVISE DATE	2009/08/10	UNIT	mm		
TYPE	SP-12N	DWG. NO.	A2N-01	≤ 10.0	±0.5
WIRE	SPT-1,SPT-2,NISPT-1,NISPT-2(16~20AWG/2C)				
 I-SHENG ELECTRIC WIRE & CABLE CO.,LTD. 鎰勝工業股份有限公司	DESIGN BY	YUYING WANG		≤ 20.0	±1.0
	REVIEW BY	FANNY WANG			
	APPROVE BY	RYAN LAI		> 20.0	±2.0

MARKING

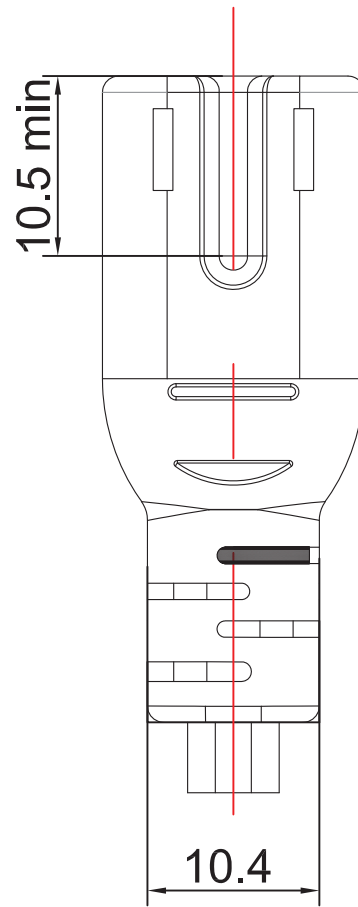
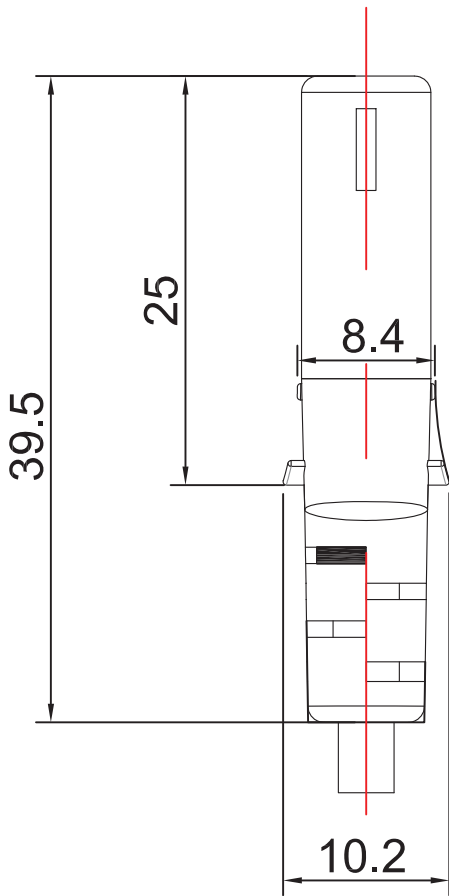
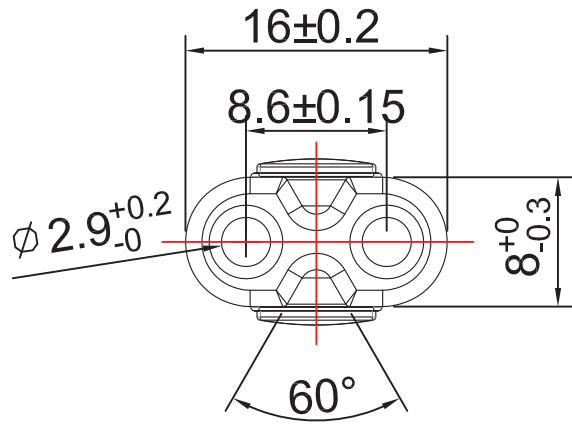
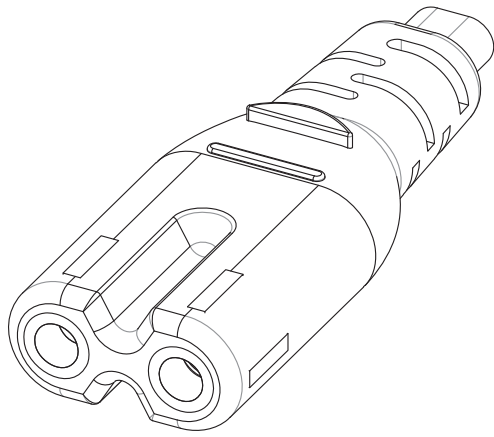
ISSUE 2014.04.29	STD. NAME UL/CSA APPROVAL POWER SUPPLY CORD	FILE NO. A2N-02-XX
REVISED A	CAT NO. SP-12N 成品標識示意圖	PAGE 1




穴號
CAVITY NUMBER

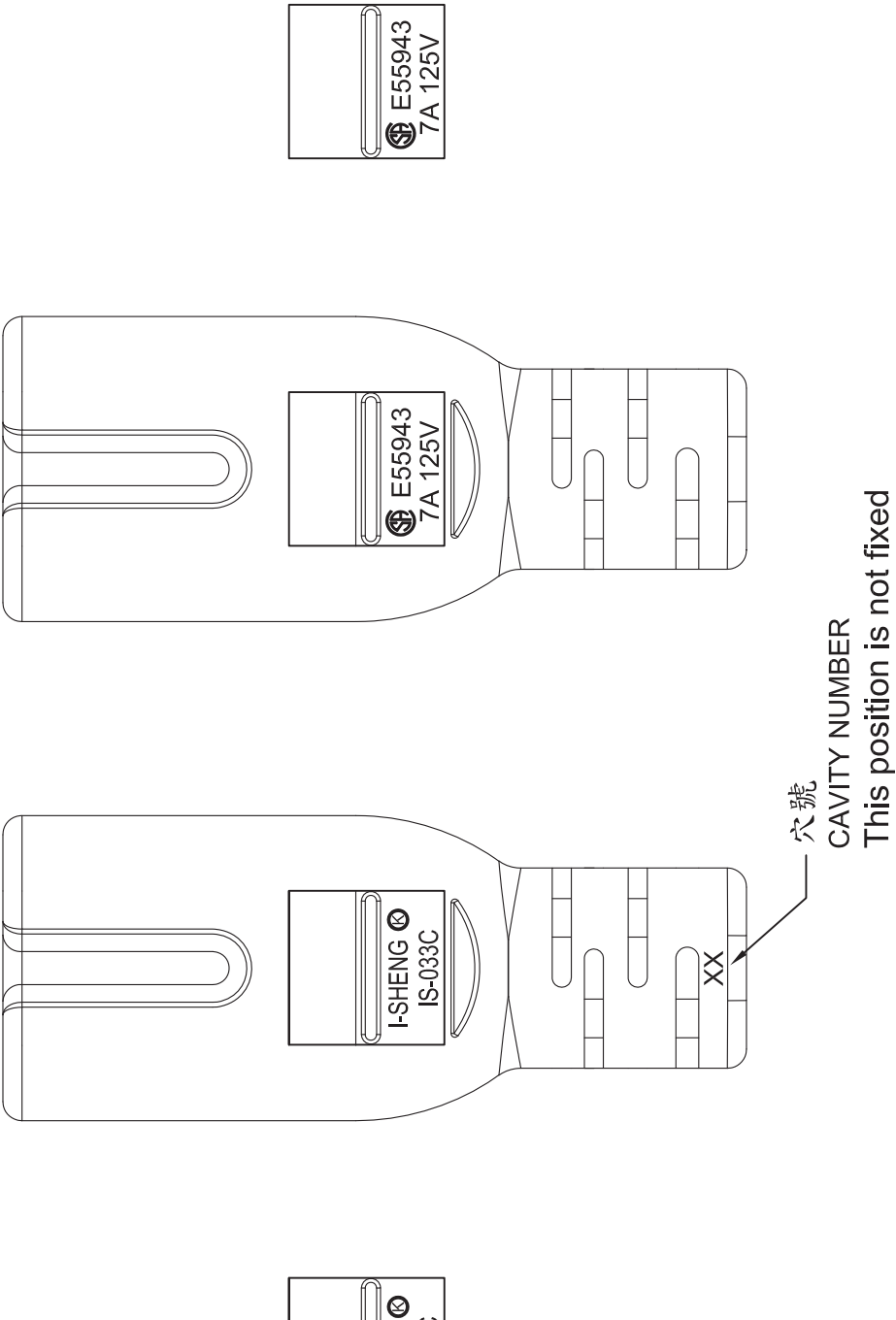
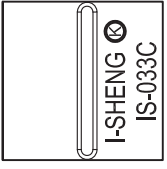
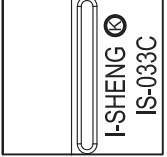

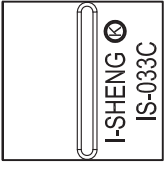
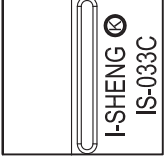




 I-SHENG (KISIS)	D. by	潘銀麗	C. by	汪華高	A. by	周家榮
---	-------	-----	-------	-----	-------	-----



DWG. NAME		TYPE AND DIMENSIONS		
APPLY TO STANDARD		UL/CSA APPROVAL POWER SUPPLY CORD		
ISSUE DATE	2013/11/21	REV.	A	
REVISE DATE		UNIT	mm	
TYPE	IS-033C	DWG. NO.	L0C-2	
WIRE	SPT-2, NISPT-2 18/2C			
 I-SHENG ELECTRIC WIRE & CABLE CO.,LTD. 鎰勝工業股份有限公司	DESIGN BY	Fanny Wang		
	REVIEW BY	James Chan		
	APPROVE BY	Ryan Lai		
		≤ 1.0		±0.3
		≤ 10.0		±0.5
		≤ 20.0		±1.0
		> 20.0		±2.0

MARKING

ISSUE 2014.07.30	STD. NAME UL/CSA APPROVAL POWER SUPPLY CORD	FILE NO. L3C-02-XX
REVISED A	CAT NO. IS-033C 成品標識示意圖	PAGE 1
		
		
		
		
		
<p>穴號 CAVITY NUMBER This position is not fixed</p>		
	I-SHENG (KSIS)	D. by
潘銀麗		
C. by		
汪華高		
A. by		
秦嘉豪		

SPECIFICATION

Rev. 1.0

Issued	2014/5/23	Description	File No.	T172S2116
Revised		SP-12N+IS-033C SPT-2 18AWGx2C 60°C	Page	1/1

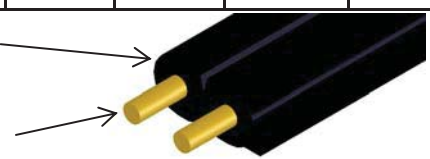
1. Scope :

This specification is applied to power supply cord conforming to:
UL 62 UL 817 CSA C22.2

2. Construction and dimensions:

In accordance with the following tables and attached drawings.

Item	Cat. No.	Rating		Approved No.	
		A	V	UL	CSA
Plug	SP-12N	7	125	E55943	LR 35162
Connector	IS-033C	7	125	E55943	LL 41230

Flexible cord					SPT-2 18AWG 2C			
Approved No.					E88265 、 E314513 、 E315167 、 LL81924			
Rating					300V 60°C			
Conductor		Insulation			Jacket			Conductor Resistance
Nominal (mm ²) (AWG)	Composition (pcs/mm)	Avg. Thickness (mm)	Min Thickness (mm)	Diameter (mm)	Avg. Thickness (mm)	Min Thickness (mm)	Diameter	
18AWG	40/ ϕ 0.162±0.008	1.14	1.02	3.4±0.15 x6.8±0.2	-	-	-	Max 22.4Ω/km at 20°C In case of dispute, Conductor resistance shall be the referee method.
PVC Insulation								
Copper Conductor								

3. Cable marking on the sheath:

Taiwan: (UL) E88265 SPT-2 60°C 2X18AWG(0.824mm ²) 300V VW-1 I-SHENG CSA LL81924 TYPE SPT-2 60°C 2X0.824mm ² (18AWG) 300V VW-1
Shenzhen: (UL) E88265-C SPT-2 60°C 2X18AWG(0.824mm ²) 300V VW-1 I-SHENG CSA LL81924 TYPE SPT-2 60°C 2X0.824mm ² (18AWG) 300V VW-1
(UL) E315167 SPT-2 60°C 2X18AWG(0.824mm ²) 300V VW-1 I-SHENG CSA LL81924 TYPE SPT-2 60°C 2X0.824mm ² (18AWG) 300V VW-1
Kunshan: (UL) E88265-K SPT-2 60°C 2X18AWG(0.824mm ²) 300V VW-1 I-SHENG CSA LL81924 TYPE SPT-2 60°C 2X0.824mm ² (18AWG) 300V VW-1
(UL) E314513 SPT-2 60°C 2X18AWG(0.824mm ²) 300V VW-1 I-SHENG CSA LL81924 TYPE SPT-2 60°C 2X0.824mm ² (18AWG) 300V VW-1

I-SHENG ELECTRIC WIRE & CABLE CO., LTD.

發行 ISSUED 2000.03.05	標準名稱 STD.NAME	SPECIFICATION	檔案編號 FILE NO
修訂 REVISED 2010.05.04	題目 TITLE	THE CHARACTERISTIC OF POWER SUPPLY CORD FOR UL & CSA	SPEC-AC

Items 項目	Conditions 條件	Specification 規格
1 Insulation resistance 絕緣抵抗	The measurement shall be made after an open-circuit output of 500 V for 1 minute at an ambient temperature of 20°C.	The insulation resistance shall not be less than 100 MΩ.
	a) Live parts of opposite polarity, b) Live parts and dead metal parts that are exposed to contact by persons or that may be grounded in service, and c) Live parts and any surface of insulating material that is exposed to contact by persons or that may be in contact with ground in service.	
2 Electric strength 耐電壓	Each cord set or power-supply cord shall be capable of withstanding without breakdown for a period of 1 minute The application of a 60-Hz potential of 2000 V between any two conductors. Testing transformer capacity (耐壓計容量) :500 VA or more Leakage current (遮斷電流) :2mA frequency (周波數) :50/60 Hz	There was no dielectric breakdown.
	Between two Conductors 2000V/1min. Between conductors And outside body. 2000V/1min.	
3 Temperature rise 溫昇	A rated current is passed through the circuit. The devices under test were caused to carry the test current continuously for a period of four hours.	The temperature rise shall not exceed 30 degrees above the ambient temperature.

I-SHENG ELECTRIC WIRE & CABLE CO., LTD.

發行 ISSUED 2000.03.05	標準名稱 STD.NAME	SPECIFICATION	檔案編號 FILE NO
修訂 REVISED 2010.05.04	題目 TITLE	THE CHARACTERISTIC OF POWER SUPPLY CORD FOR UL & CSA	SPEC-AC

Items 項目	Conditions 條件	Specification 規格															
4 Flexing test 屈曲強度	<p>Samples should be molded to a 20 inch length of flexible cord.</p> <p>The test weights attached to each cord approximately 12 inches from the point of rotation is subjected to 113g for SPT types and 284g for HPN type.</p> <p>A minimum of 2,500 flexing cycles consist of: rotation of the jaws from the vertical position until 90 degrees to one side, back past the vertical position until 90 degrees to the other side, and back to the vertical position. The rate of testing shall be 10 cycles per minute.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th></th> <th>Load Weight (g)</th> <th>Angle $\theta(^{\circ})$</th> <th>Furthermore 90° rotational direction (turns)</th> <th>Rate of flexing per min (turns)</th> </tr> </thead> <tbody> <tr> <td>plug</td> <td>SPT TYPES 113 HPN TYPES 284</td> <td>90</td> <td>2500</td> <td>10</td> </tr> <tr> <td>connect or</td> <td>SPT TYPES 113 HPN TYPES 284</td> <td>90</td> <td>2500</td> <td>10</td> </tr> </tbody> </table> <div style="text-align: center; margin-top: 10px;"> <p>Flexing test apparatus FLEXING CYCLE</p> <p>The diagram illustrates the flexing test apparatus. It shows a vertical cord passing through two guides spaced 3/4 inch (19 mm) apart. The cord is rotated 90 degrees to one side and back to the vertical position, then 90 degrees to the other side and back to the vertical position. The distance from the guides to the test weight is 12 inches (305mm). The distance from the guides to the point of rotation is 9 inches (229mm). The test weight is attached to the end of the cord.</p> </div>		Load Weight (g)	Angle $\theta(^{\circ})$	Furthermore 90° rotational direction (turns)	Rate of flexing per min (turns)	plug	SPT TYPES 113 HPN TYPES 284	90	2500	10	connect or	SPT TYPES 113 HPN TYPES 284	90	2500	10	<p>After the test the sample shall show no damage except that breakage.</p>
	Load Weight (g)	Angle $\theta(^{\circ})$	Furthermore 90° rotational direction (turns)	Rate of flexing per min (turns)													
plug	SPT TYPES 113 HPN TYPES 284	90	2500	10													
connect or	SPT TYPES 113 HPN TYPES 284	90	2500	10													


I-SHENG ELECTRIC WIRE & CABLE CO., LTD.

發行 ISSUED 2000.03.05	標準名稱 STD.NAME	SPECIFICATION	檔案編號 FILE NO
修訂 REVISED 2010.05.04	題目 TITLE	THE CHARACTERISTIC OF POWER SUPPLY CORD FOR UL & CSA	SPEC-AC

Items 項目	Conditions 條件	Specification 規格																	
5	<p>Withdrawal force 引拔力</p> <p>Verification of the maximum withdrawal force The connector is inserted to the full depth into and withdrawn from the appropriate appliance inlet 10 times. It is then again inserted for a principal mass is such that it exerts a force equal to one-tenth of the maximum withdrawal force specified in the table and it shall be made in one piece and a supplementary.</p> <p>Verification of the minimum withdrawal force The test pin gauge is applied to each individual connector contact with the contact axes vertical and the gauge hanging vertically downwards. The total mass of the gauge shall be such as to exert the applicable force as show in table.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th rowspan="3">Type of connector</th> <th colspan="3">Withdrawal force N (kg)</th> </tr> <tr> <th colspan="2">Multi-pin gauge</th> <th rowspan="2">Single-pin gauge minimum</th> </tr> <tr> <th>Max</th> <th>Min</th> </tr> </thead> <tbody> <tr> <td>0.2A 2.5A 6A 10A</td> <td style="text-align: center;">50 (5.1)</td> <td style="text-align: center;">10 (1.0)</td> <td style="text-align: center;">1.5 (0.15)</td> </tr> <tr> <td>16A</td> <td style="text-align: center;">60 (6.1)</td> <td style="text-align: center;">15 (1.5)</td> <td style="text-align: center;">2 (0.2)</td> </tr> </tbody> </table>	Type of connector	Withdrawal force N (kg)			Multi-pin gauge		Single-pin gauge minimum	Max	Min	0.2A 2.5A 6A 10A	50 (5.1)	10 (1.0)	1.5 (0.15)	16A	60 (6.1)	15 (1.5)	2 (0.2)	<p>After Verification of the maximum withdrawal force test. The principal mass is hung on the connector without jolting and the supplementary mass is allowed to fall from a height of 5 cm on to the principal mass. The connector shall not remain in the appliance inlet.</p> <p>After Verification of the minimum withdrawal force test. The test pin gauge is applied gently, and care is taken not to knock the assembly when checking the minimum withdrawal force. The gauge shall not fall from the contact assembly within 3 sec.</p>
Type of connector	Withdrawal force N (kg)																		
	Multi-pin gauge		Single-pin gauge minimum																
	Max	Min																	
0.2A 2.5A 6A 10A	50 (5.1)	10 (1.0)	1.5 (0.15)																
16A	60 (6.1)	15 (1.5)	2 (0.2)																
6	<p>Resistance to Aging 老化試驗</p> <p>Samples of each catalog number were placed in an air-circulating oven maintained at 100 °C for 96 hours.</p>	<p>There was no cracking or deformation.</p>																	
7	<p>Polarity/Continuity 導通</p> <p>The power cord shall be test polarity and continuity, the test voltage is 24V DC</p>	<p>Without breakdown</p>																	

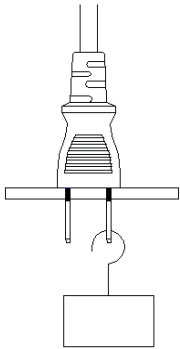
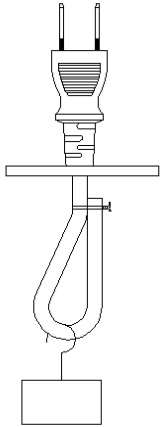
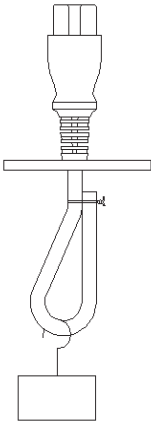
I-SHENG ELECTRIC WIRE & CABLE CO., LTD.

發行 ISSUED 2000.03.05	標準名稱 STD.NAME	SPECIFICATION	檔案編號 FILE NO
修訂 REVISED 2010.05.04	題目 TITLE	THE CHARACTERISTIC OF POWER SUPPLY CORD FOR UL & CSA	SPEC-AC

Items 項目	Conditions 條件	Specification 規格
8	<p>Resistance to heat 耐熱試驗</p> <p>The test being made in a heating cabinet at a temperature of $100 \pm 2^{\circ}\text{C}$.</p> <p>The specimen is clamped between steel jaws, having a cylindrical face of 25mm radius, a width of 15mm and a length of 50mm. The corners are rounded with a radius of 2.5mm.</p> <p>The specimen is clamped in such a way that the jaws press against it in the area where it is gripped in normal use, the centre line of the jaws coinciding as nearly as possible with the centre of this area.</p> <p>The force applied through the jaws is 20N</p>	<p>After 1h, the jaws are removed and the specimen shall show no damage within the meaning of this standard.</p>
9	<p>Moisture resistance 耐濕性</p> <p>The humidity treatment is carried out in a humidity cabinet containing air with a relative humidity maintained between 91% and 95%. The temperature of the air, at all places where specimens can be located, is maintained within $\pm 1^{\circ}\text{C}$ of any convenient value $t^{\circ}\text{C}$ between 20°C and 30°C.</p> <p>Before being placed in the humidity cabinet, the specimens are brought to a temperature between $t^{\circ}\text{C}$ and $(t+4)^{\circ}\text{C}$.</p> <p>The specimens are kept in the cabinet for</p> <ul style="list-style-type: none"> - 168h (7 days) for connector with earthing contact and for appliance inlets with earthing contact, which are submitted as individual accessories, not incorporated in other equipment. - 48h (2 day) in all other cases. 	<p>After this treatment, the specimen shall show no damage.</p>
10	<p>Blade Connection Secureness 銅片與線材壓著力 測試</p> <div style="text-align: center;">  </div> <p>A pull of 20 lbf (89 N) shall be applied if the conductor is No. 18 AWG or larger in size. If a smaller cord is used, the pull shall be 8 lbf (36 N).</p>	<p>The connection shall not break under a pull applied for 1 minute between the element and the conductor before the element has been assembled into the fittings..</p>

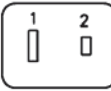


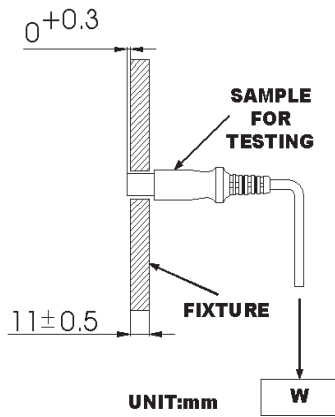
I-SHENG ELECTRIC WIRE & CABLE CO., LTD.

發行 ISSUED 2000.03.05	標準名稱 STD.NAME	SPECIFICATION	檔案編號 FILE NO
修訂 REVISED 2010.05.04	題目 TITLE	THE CHARACTERISTIC OF POWER SUPPLY CORD FOR UL & CSA	SPEC-AC

Items 項目	Conditions 條件	Specification 規格
11	<p>Blade security 銅片牢固力測試</p> <p>Apply a straight pull of 98 Newton for 2 min between an attachment plug and blade(s).</p> <div style="text-align: center;">  </div>	<p>After the test, the blades shall not be displaced by more than 2.4mm.</p>
12	<p>Strain relief 外部拉力測試</p> <p>Apply a straight pull of 137.2 Newton for 1 min between an attachment plug and a flexible cord and between a cord connector and a flexible cord.</p> <div style="text-align: center;">  <p style="text-align: center;">Between an attachment plug and a flexible cord</p>  <p style="text-align: center;">Between a cord connector and a flexible cord</p> </div>	<p>Without damage, such as displacement or looseness or detachment of metal parts, conductor break, insulation damage etc.</p>

I-SHENG ELECTRIC WIRE & CABLE CO., LTD.

發行 ISSUED 2000.03.05	標準名稱 STD.NAME	SPECIFICATION	檔案編號 FILE NO
修訂 REVISED 2010.05.04	題目 TITLE	THE CHARACTERISTIC OF POWER SUPPLY CORD FOR UL & CSA	SPEC-AC

Items 項目	Conditions 條件	Specification 規格
13	<p>Abrupt Pull 突拉測試</p> <p>The sample being tested shall be subjected to an impact by rasing and releasing a 1.1kg weight, allowing it to fall freely from distance of 7 inches to impact the strike plate. Each of six representative devices required, two is to be tested in each of the following orientations.</p> <p>a) Blades in the vertical position, b) Fitting rotated 90° to the right of the vertical position, and c) Fitting rotated 90° to the left of the vertical position.</p> <p>Exception No. 1: The abrupt pull test is not required for power-supply cords employing Types XTW, CXTW, TPT, TST, shaver, and clock cords.</p> <p>Exception No. 2: The abrupt pull test is not required for cord sets and power-supply cords employing 10 AWG and larger flexible cords.</p> <div style="text-align: center;"> <p><small>Figure 99.3</small> Orientations for abrupt pull test for two conductor representative devices</p> <p>STARTING POSITION</p>  </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <p>90° TO LEFT</p>  </div> <div style="text-align: center;"> <p>90° TO RIGHT</p>  </div> </div>	<p>No damage is allowed after test.</p>
14	<p>Bending strength of connector body 本體機械強度</p> <p>After the connector's point is fixed as shown in the figure below. Load of 10kg shall be applied vertically and slowly for 15 s.</p> <div style="text-align: center;">  <p>UNIT:mm</p> </div>	<p>After the test, the connector shall show no damage.</p>