File E342800
Project 10CA57210

September 13, 2011

REPORT

On

DIRECT PLUG-IN AND CORD-CONNECTED
CLASS 2 POWER UNITS

Globtek (Hong Kong) Ltd
Kowloon, HK

DESCRIPTION

PRODUCT COVERED:

USL - Class 2 Inherently Limited Power Supply, Model DA-50-26.

GENERAL:

The unit covered by this Report is direct plug-in Class 2 Power Supply.

The unit consists of a linear mode transformer housed in a thermoplastic enclosure, and provided with non-polarized parallel blades with grounding pin for connection to line voltage.

ELECTRICAL RATINGS:

Model	Rated Input, AC			Rated Output, AC	
	Volts	Hz	VA	Volts	mA
DA-50-26	120	60	60	26	1920

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE’S USE):

USL indicates investigation to the UL Standard for Safety for Class 2 Power Units, UL 1310, Fifth Edition, with revisions including and through September 30, 2010.

The maximum room ambient temperature is 33°C (Tmra).

CONSTRUCTION DETAILS:

Section General - The following construction items are described in Section General.

Abbreviations	Instruction Manual
Markings	Printed Wiring Boards
Blades	Internal Wiring
Spacings	Electrical Connections
Segregation	Insulation Tubing/Sleeving
Corrosion Protection	

Markings – See Sec. Gen, Markings. The following marking shall be provided.

“Class 2 Power Supply”

Instruction Manual – See Sec. Gen., Instruction Manual for details.

Illustrations - the following illustrations are included in this report.

ILL. Number	Description
1	Transformer insulation

General - The general design, shape and arrangement shall be as illustrated in the following figures, except where variations are specifically described.

MODEL DA-50-26 – FIG. 1

1. Enclosure - R/C (QMFZ2), SABIC INNOVATIVE PLASTICS US L L C (E121562), Type SE100 (f1)(b), rated V-1, 80°C, measured minimum 2 mm thick. Overall measured 105.5 by 70 by 56.5 mm. Two halves are secured by ultrasonic welding, provide a mounting tab with a mounting hole on base enclosure.

2. Blades – Plated copper alloy, grounding type with 15 A, 125 V (NEMA 5-15P) blades configuration, integrally molded with enclosure. Each blade located measured minimum 8.0 mm from side of platform edge. See Section General, ILL. 1 for dimensions, spacing and location of blades.

3. Output Terminals - Three provided, each consists of a 0.76 mm thick copper alloy terminal plate with screw opening protruded to have minimum two full threads. Provided with No. 6 (3.5 mm major diameter, 32 threads/inch) plated screws for each terminal. Terminal plate secured to enclosure by integral bent tabs, provided with two full threads on terminal plate for terminal screw.

MODEL DA-50-26 – FIG. 2

1. Transformer – Transformer employed Class 130(B) Insulation System – R/C (OBJY2), GLOBTEK INC (E243347), Type GTX-1. Constructed as below, see ILL. 1 for construction.

   a) Core - Laminated sheet steel, varnished, E-I type, measured overall 57 by 47.7 by 36.8 mm. Window dimensions 28.5 by 9.4 mm.

   b) Primary Winding - R/C (OBMW2), Type MW75, 0.36 mm diameter, 425 turns. Mechanically secured to Primary Leads before soldering.

   c) Secondary Winding – R/C (OBMW2), Type MW75, 0.7 mm diameter, 100 turns. Mechanically secured to Output Terminals before soldering.

   d) Bobbin – Two-flange type, two provided. R/C (QMFZ2), E I DUPONT DE NEMOURS & CO INC (E41938), Type FR530, minimum 0.79 mm, rated V-0, 155°C.

   e) Bobbin Holder – R/C (QMFZ2), E I DUPONT DE NEMOURS & CO INC (E41938), Type FR530, minimum 0.75 mm, rated V-0, 155°C.

   f) Insulation Tape - R/C (OANZ2), 3M COMPANY ELECTRICAL MARKETS DIV (EMD) (E17385), Type 1350F-1, rated 130°C, minimum 0.05 mm thick.

   g) Thermal Links – R/C (XCMQ2), AUPO ELECTRONICS LTD (E140847), Type P4 or P4-F, rated 250 V ac, 2 A, 130°C.

   h) Primary Leads - R/C (AVLV2), Style 1015, Min. 22 AWG, rated 600 V, 105°C. Mechanically secured before soldering. Connected between Blades and transformer primary winding.

   i) Varnish – R/C (OBOR2), ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC (E75225), Type 468-2(+).

2. Bonding Conductor Wire - R/C (AVLV2), green or green with yellow stripe, Min. No. 18 AWG, Style 1015, rated 600 V, 105°C. Wire bonding core to grounding blade is equipped with two wire connectors at two ends.

3. Wire Connector – Listed (ZMVV), three provided, Crimp type wire connector, suit for 18 AWG stranded wire. One connector secured to grounding blade by riveting. The other two secured to transformer core by a screw with nut and star washer.

4. Internal Wiring - R/C (AVLV2), Style 1015, Min. No. 22 AWG, rated 105°C, 600 V, VW-1, used to connect between output terminal and core, one end equipped a wire connector, and the other end is mechanically secured to output terminal before soldering.

5. Tube – R/C (YDPU2), rated 600 V, 125°C, VW-1. Tube is used in internal wiring, fuse and secondary winding outside transformer.

6. Fuse – Listed (JDYX), rated 3 A, minimum 125 V ac. Fuse is connected between secondary wingding and output terminal.

Winding Insulation for transformer:

Description	Insulation Material	Total Thickness, mm	Layers
Primary Winding and Secondary Winding	Primary Bobbin	0.79	-
	Secondary Bobbin	0.79	
	Bobbin Holder	0.82	-
Primary Outer-wrap	Tape	Min. 0.10	Min. 2
Primary Winding and Core (Bottom)	Bobbin	0.84	-
	Bobbin Holder (#)	0.83	-
Primary Winding and Core (Sides)	Bobbin Holder	0.75	-
	Tape	Min. 0.10	Min. 2
Primary Winding and Core (Centre)	Bobbin	1.3	-
Thermal Link and Primary Winding	Tape	Min. 0.10	Min. 2
Primary Crossover Lead and Primary Winding	Tape	0.05	1
Primary Lead connection and Primary Winding	Tape	Min. 0.10	Min. 2
Secondary Outer-wrap	Tape	Min. 0.10	Min. 2
Secondary Winding and Core (Side)	Tape	Min. 0.10	Min. 2
	Bobbin Holder	0.78	-
Secondary Winding and Core (Centre)	Bobbin	1.3	-
Secondary Winding and Core (Top)	Bobbin	0.83	-
	Tape (@)	0.10	2

Bobbin holder (#): The folder of bobbin holder is at least 1.6 mm for spacing between primary winding and core.

Tape (@): The folder of tape is at least 1.6 mm for spacing between secondary winding and core.

TEST RECORD NO. 1

SAMPLES:

Samples of Class 2 Power Supply, Model DA-50-26 were submitted by the manufacturer and subjected to the following tests with the requirements in the Standard for Class 2 Power Units, UL 1310, Fifth Edition.

GENERAL:

Test results relate only to the items tested.

The following tests were conducted in accordance with UL 1310.

Test	Clause
Leakage Current Test:	26
Dielectric Voltage Withstand Test Following Leakage Current Test:	34
Leakage Current Test After Humidity Exposure:	27
Dielectric Voltage Withstand Test After Humidity Exposure:	34
Maximum Output Voltage Test:	28
Normal Input Test:	50.2
Maximum Input Test:	29
Output Current And Power Test:	30
Dielectric Voltage Withstand Test After Output Current And Power Test:	34
Full-Load Output Current Test:	32
Normal Temperature Test - General:	33
Dielectric Voltage Withstand Test:	34
Induced Potential Test	34.2
Abnormal Tests:	39
Output Loading Test - Abnormal:	39.2
Dielectric Voltage Withstand Test After Output Loading Test:	34
Transformer Burnout Test (Linear Designs) - Abnormal:	39.3
Dielectric Voltage Withstand Test After Transformer Burnout Test:	34
Transformer Insulating Materials Test	40

Test	Clause
Blade Secureness Test: (Direct Plug-In Unit)	43
Input Contact Security Test: (Direct Plug-In Unit)	44
Impact Test: (Direct Plug-In Unit)	46.2
Dielectric Voltage Withstand Test After Impact Test	34
Rod Pressure Test: (Direct Plug-In Unit)	46.4
Dielectric Voltage Withstand Test (After Rod Pressure Test)	34
Resistance To Crushing Test: (Direct Plug-In Unit)	46.5
Mold Stress Relief Distortion Test	Table 25.1
Weight And Moment Determination: (Direct Plug-In Unit)	7.11
Output Connector Security Test (Wire Binding Terminals)	45

The test methods and results of the above tests have been reviewed and found in accordance with the requirements in the standards mentioned above.

Test Record Summary:

The results of this investigation, including construction review and testing indicate that the product evaluated comply with the applicable requirements in Class 2 Power Units, UL1310, Fifth Edition, dated May 3, 2005, Last Revised date September 30, 2010, therefore, such products are judged eligible to bear UL’s Mark as described on the Conclusion Page of this Report.

CONCLUSION

Samples of the products covered by this Report have been found to comply with the requirements covering the category and the products are found to comply with UL's applicable requirements. The description and test result in this Report are only applicable to the samples investigated by UL and does not signify the product described as being covered under UL's Follow-Up Service Program. When covered under UL's Follow-Up Service Program, the manufacturer is authorized to use the UL Listing Mark on such products which comply with UL's Follow-Up Service Procedure and any other application requirements of Underwriters Laboratories Inc. The Listing Mark of Underwriters Laboratories Inc. on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method to identify products investigated by UL to published requirements and manufactured under UL's Listing and Follow-Up Service.

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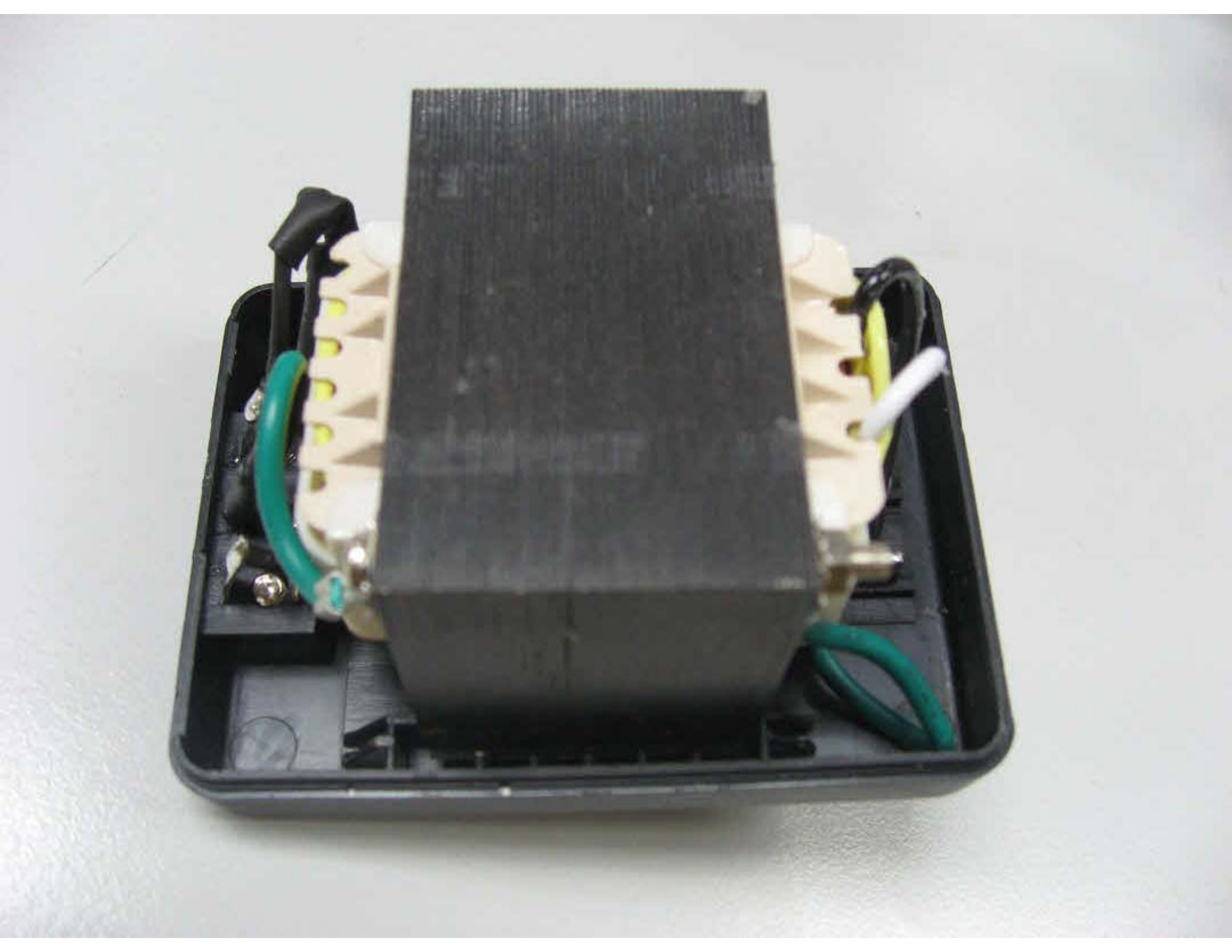

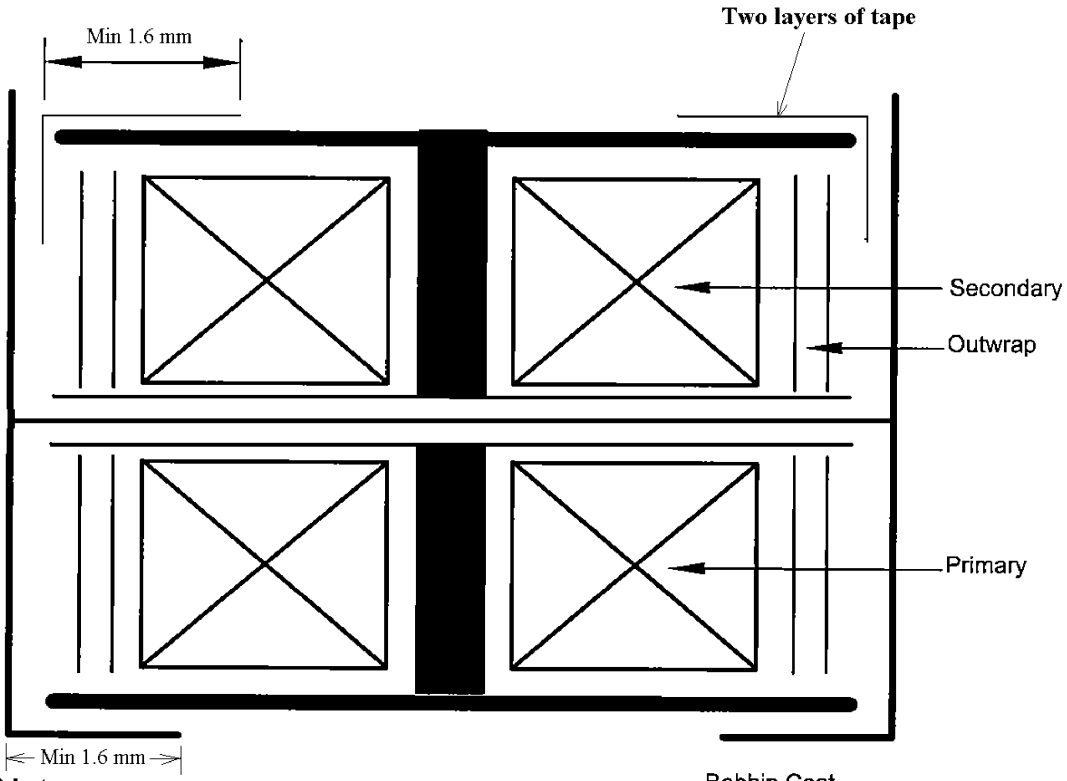

Note:

Over surface between Primary and Secondary is Min1.6mm

Over surface between Primary and Core is Min1.6mm

Over surface between Secondary and Core is Min1.6mm