

File E341351  
Project 4789507340

June 11, 2018

REPORT

on

LISTING - Power Supplies for use in Audio/Video, Information and  
Communication Technology Equipment

GLOBTEK (HONG KONG) LTD

KOWLOON HONG KONG

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| UL TEST REPORT AND PROCEDURE           |   |
|--|---|
| <b>Standard:</b>                       | UL 62368-1, 2nd Edition, 2014-12-01 (Audio/video, Information and Communication Technology Equipment - Part 1: Safety Requirements)<br>CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12 (Audio/video, Information and Communication Technology Equipment - Part 1: Safety Requirements)   |
| <b>Certification Type:</b>             | Listing   |
| <b>CCN:</b>                            | QQJQ, QQJQ7 Power Supplies for use in Audio/Video, Information and Communication Technology Equipment )   |
| <b>Complementary Certification CCN</b> | N/A   |
| <b>Product:</b>                        | ICT/ITE POWER SUPPLY  |
| <b>Model:</b>                          | GT-46600-WWVV-X.X-TZ*<br>WW is the standard output wattage, with a maximum value of "65",<br>VV is the standard rated output voltage designation, with a value of "12" "15" and "24";<br>-X.X denote the output voltage differentiator, subtracting X.X volts from standard output voltage VV in 0.1V increments, the actual output voltage range is 12-24V, blank is to indicate the no voltage different.<br>Z can be 3 or 3A, 3 means C14 inlet type, 3A means C6 inlet type<br>The last "*" denote any six character means "0-9","A-Z", "(", ")", "[", "]", "-", " " or blank for marketing purposes. |
| <b>Rating:</b>                         | I/P:<br>100-240 Vac, 50-60 Hz or 50/60Hz, 1.5 A.<br><br>O/P:<br>See Illustration - 13 for details.  |
| <b>Applicant Name and Address:</b>     | GLOBTEK (HONG KONG) LTD<br>UNIT 1402, BENSON TOWER<br>74 HUNG TO RD<br>KWUN TONG<br>KOWLOON HONG KONG   |

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

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Form Page 1

Form Issued: 2015-02-25  
Form Revised:

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**Supporting Documentation**

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

- A. Authorization - The Authorization page may include additional Factory Identification Code markings.
- B. Generic Inspection Instructions -
  - i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report
  - ii Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report
- C. Listing Mark/Recognized Component Mark Data Page - details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

**Product Description**

The equipment under test (EUT) is a desktop type switching mode power adapter for use with audio/video, information and communication technology equipment.

The plastic enclosure of EUT is secured by ultrasonic.

**Model Differences**

All models are similar to each other except output rating, Transformer T1, secondary components, and model designation, see Illustration-13 for details.

**Test Item Particulars (NOT FOR FIELD REPRESENTATIVE'S USE)**

Classification of installation and use by . : ☒ Ordinary person ☐ Instructed person  
☐ Skilled person

Supply Connection..... : ☒ pluggable equipment ☒ type A ☐  
type B  
☐ permanent connection  
☒ detachable power supply cord  
☐ non-detachable power supply cord  
☐ not directly connected to the mains

Equipment mobility..... : ☒ movable ☐ hand-held ☒ transportable  
☐ stationary ☐ for building-in ☐  
direct plug-in  
☐ rack-mounting ☐ wall-mounted

Over voltage category (OVC) ..... : ☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV  
☐ other: \_\_\_\_\_

Fundamental Frequency..... : ☒ 50/60 Hz ☐ 50 Hz ☐ 60 Hz ☒ other  
50-60 Hz ☐ N/A

Class of equipment ..... : ☒ Class I ☐ Class II ☐ Class III  
☐ Not classified  
☐ Class II with functional earthing

Access location ..... : ☐ restricted access location ☒ N/A

Pollution degree (PD) ..... : ☐ PD 1 ☒ PD 2 ☐ PD 3

IP protection class ..... : ☒ IP X0 ☐ IP \_\_\_\_

Tested for IT power systems ..... : ☐ Yes ☒ No

IT testing, phase-phase voltage (V) ..... : ☐ \_\_\_\_ ☒ N/A

Altitude during operation (m) ..... : ☒ Up to 2,000 ☐ Up to 5,000

Altitude of test laboratory (m) ..... : ☒ Less than 2,000 ☐ Approximately \_\_\_\_

Mass of equipment (kg) ..... : 0.281

**Technical Consideration (NOT FOR FIELD REPRESENTATIVE'S USE)**

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40 degree C
- The means of connection to the mains supply is: Detachable power cord, Pluggable A
- The product is intended for use on the following power systems: TN
- Considered current rating of protective device as part of the building installation (A) : 20
- Mains supply tolerance (%) or absolute mains supply values : +10%, -10%
- The equipment disconnect device is considered to be: Appliance inlet
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual

**Engineering Conditions of Acceptability (NOT FOR FIELD REPRESENTATIVE'S USE)**

N/A

**Additional Information**

N/A

**Additional Standard**

The product fulfils the requirements of: N/A

| Markings, instructions and instructional safeguards   |           |  |                      |           |                |              |
|---|-----------|--|----------------------|-----------|----------------|--------------|
| Clause Title  |           | Marking or Instruction Details   |                      |           |                |              |
| Equipment identification marking - Manufacturer identification  |           | Listee's or Recognized company's name, Trade Name, Trademark or File Number.         |                      |           |                |              |
| Equipment identification marking - model identification   |           | Model Number   |                      |           |                |              |
| Equipment rating marking -ratings   |           | Input Ratings (voltage, frequency, current)<br>Output Ratings (voltage, dc, current) |                      |           |                |              |
| Fuses - replaceable by skilled person (component ID:F1)   |           | F1 T3.15A, 250V located on or adjacent to fuse or fuseholder                         |                      |           |                |              |
| <b>Special Instructions to UL Representative</b><br>For transformer test - When the tests are conducted at other location, inspect test record and specification sheet provided by the component manufacturer. Verify the specification sheet indicates 100% routine test specified in Production-Line Testing Requirements be conducted at the component manufacturer. |           |  |                      |           |                |              |
| <b>Production-Line Testing Requirements</b><br><b><u>Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.</u></b>  |           |  |                      |           |                |              |
| Model   | Component | Removable Parts  | Test probe location  | V rms     | V dc           | Test Time, s |
| All models  | T1        | N/A  | Primary to Secondary | 3000      | 4242           | 1            |
| All models  | EUT       | N/A  | Primary to Secondary | 3000      | 4242           | 1            |
| <b><u>Earthing Continuity Test Exemptions - This test is not required for the following models:</u></b>   |           |  |                      |           |                |              |
| --  |           |  |                      |           |                |              |
| <b><u>Electric Strength Test Exemptions - This test is not required for the following models:</u></b>   |           |  |                      |           |                |              |
| --  |           |  |                      |           |                |              |
| <b><u>Electric Strength Test Component Exemptions - The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test:</u></b>   |           |  |                      |           |                |              |
| N/A   |           |  |                      |           |                |              |
| <b><u>Sample and Test Specifics for Follow-Up Tests at UL</u></b>   |           |  |                      |           |                |              |
| Model   | Component | Material   | Test                 | Sample(s) | Test Specifics |              |
| N/A   | --        | --   | --                   | --        | --             |              |

| 4.1.2                      | TABLE: list of critical components              |                   |   |                         |                              | Pass          |
|----------------------------|---|-------------------|---|-------------------------|------------------------------|---------------|
| Object/part or Description | Manufacturer/ trademark                         | type/model        | technical data  | Product Category CCN(s) | Required Marks of Conformity | Supplement ID |
| 01. Enclosure (Alternate)  | SABIC JAPAN L L C                               | 945 (GG)          | Two pieces construction, secured together by ultrasonic welding, rated V-0 or better, 120 degree C min. Minimum 2.0 mm thickness. See Illustration 1 for dimensions | QMFZ2                   | UL                           |               |
| 01. Enclosure (Alternate)  | SABIC INNOVATIVE PLASTICS US L L C              | 915R(GG)          | Two pieces construction, secured together by ultrasonic welding, rated V-0 or better, 120 degree C min. Minimum 2.0 mm thickness. See Illustration 1 for dimensions | QMFZ2                   | UL                           |               |
| 01. Enclosure (Alternate)  | LG CHEM (GUANGZHOU) ENGINEERING PLASTICS CO LTD | LUPOY EF-1006F(m) | Two pieces construction, secured together by ultrasonic welding, rated V-0 or better, 115 degree C min. Minimum 2.0 mm thickness. See Illustration 1 for dimensions | QMFZ2                   | UL                           |               |
| 01. Enclosure (Alternate)  | COVESTRO DEUTSCHLAND AG [PC RESINS]             | FR6005 + (z)      | Two pieces construction, secured together by ultrasonic welding, rated V-0 or better, 105 degree C  | QMFZ2                   | UL                           |               |

|  |   |                                |   |       |    |  |
|--|---|--------------------------------|---|-------|----|--|
|  |   |                                | min. Minimum 2.0 mm thickness. See Illustration 1 for dimensions  |       |    |  |
| 01. Enclosure<br>(Alternate)                                 | SILVER AGE<br>ENGINEERING<br>PLASTICS<br>(DONGGUAN) CO<br>LTD | PC2330                         | Two pieces construction, secured together by ultrasonic welding, rated V-0 or better, 115 degree C min. Minimum 2.0 mm thickness. See Illustration 1 for dimensions | QMFZ2 | UL |  |
| 02. Appliance<br>Inlet (for model Z is 3)                    | TECX-UNIONS<br>TECHNOLOGY CORP                                | TU-301-SP                      | Rated 250 V, 15 A, 105 degree C min. (C14 type)   | AXUT2 | UL |  |
| 02a. Appliance<br>Inlet (alternate)<br>(for model Z is 3)    | SUN FAIR<br>ELECTRIC WIRE &<br>CABLE (HK) CO<br>LTD           | S-03                           | Rated 250 V, 10 A, 75 degree C min. (C14 type)  | AXUT2 | UL |  |
| 02b. Appliance<br>Inlet (alternate)<br>(for model Z is 3)    | ZHEJIANG LECI<br>ELECTRONICS CO<br>LTD                        | DB-14                          | Rated 250 V, 15 A, 75 degree C min. (C14 type)  | AXUT2 | UL |  |
| 02c. Appliance<br>Inlet (alternate)<br>(for model Z is 3)    | ZHE JIANG BEI ER<br>JIA ELECTRONIC<br>CO LTD                  | ST-A01-003J                    | Rated 250 V, 10 A, 75 degree C min. (C14 type)  | AXUT2 | UL |  |
| 02d. Appliance<br>Inlet (alternate)<br>(for model Z is 3)    | ECHO ELECTRIC CO<br>LTD                                       | AC-P01, AC-P03, AC-P06, AC-P07 | Rated 250 V, 15 A, 75 degree C min. (C14 type)  | AXUT2 | UL |  |
| 02-1. Appliance<br>Inlet (for model Z is 3A)                 | TECX-UNIONS<br>TECHNOLOGY CORP                                | TU-333                         | Rated 250 V, 2.5 A, 105 degree C min. (C6 type)   | AXUT2 | UL |  |
| 02-1a. Appliance<br>Inlet (alternate)<br>(for model Z is 3A) | SUN FAIR<br>ELECTRIC WIRE &<br>CABLE (HK) CO<br>LTD           | S-02                           | Rated 250 V, 2.5 A, 75 degree C min. (C6 type)  | AXUT2 | UL |  |
| 02-1b. Appliance   | ZHEJIANG LECI   | DB-6                           | Rated 250 V, 2.5 A, 75  | AXUT2 | UL |  |



|   |   |             |  |       |    |  |
|---|---|-------------|--|-------|----|--|
| Inlet (alternate)<br>(for model Z is 3A)                  | ELECTRONICS CO LTD                            |             | degree C min. (C6 type)  |       |    |  |
| 02-1c. Appliance Inlet (alternate)<br>(for model Z is 3A) | ZHE JIANG BEI ER JIA ELECTRONIC CO LTD        | ST-A04-002  | Rated 250 V, 2.5 A, 75 degree C min. (C6 type)   | AXUT2 | UL |  |
| 03. Fuse (F1)   | Various                                       | Various     | Listed, T3.15A, 250Vac   | JDYX  | UL |  |
| 03a. Fuse (F1)<br>(Alternate)                             | DAS & SONS INTERNATIONAL LTD                  | 385T series | Rated T3.15A, 250Vac.  | JDYX2 | UL |  |
| 03b. Fuse (F1)<br>(Alternate)                             | CONQUER ELECTRONICS CO LTD                    | PTU         | Rated T3.15A, 250Vac.  | JDYX2 | UL |  |
| 03c. Fuse (F1)<br>(Alternate)                             | DONGGUAN BETTER ELECTRONIC TECHNOLOGY CO LTD  | 932         | Rated T3.15A, 250Vac.  | JDYX2 | UL |  |
| 03d. Fuse (F1)<br>(Alternate)                             | DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD | 334         | Rated T3.15A, 250Vac.  | JDYX2 | UL |  |
| 04. X-Capacitor (CX1) (optional)                          | Cheng Tung Industrial Co Ltd                  | CTX         | Rated max 0.33 uF, min 250 V, X1 or X2 type, 100 degree C.<br>(Compliance with IEC 60384-14) | FOWX2 | UL |  |
| 04a. X-Capacitor (CX1) (optional)<br>(Alternate)          | Tenta Electric Industrial Co Ltd              | MEX         | Rated max 0.33uF, min 250 V, X1 or X2 type, 100 degree C.<br>(Compliance with IEC 60384-14)  | FOWX2 | UL |  |
| 04b. X-Capacitor (CX1) (optional)<br>(Alternate)          | Ultra Tech Xiphi Enterprise Co Ltd            | HQX         | Rated max 0.33 uF, min 250 V, X1 or X2 type, 100 degree C.<br>(Compliance with IEC 60384-14) | FOWX2 | UL |  |
| 04c. X-Capacitor (CX1) (optional)                         | CARLI ELECTRONICS CO                          | MPX         | Rated max 0.33uF, min 250 V, X1 or X2 type,  | FOWX2 | UL |  |

|  |                                       |  |   |       |    |  |
|--|---------------------------------------|--|---|-------|----|--|
| (Alternate)  | LTD                                   |  | 100 degree C.<br>(Compliance with IEC 60384-14)   |       |    |  |
| 04d. X-Capacitor (CX1) (optional) (Alternate)        | JOEY ELECTRONICS (DONG GUAN) CO LTD   | MPX  | Rated max 0.33uF, min 250 V, X1 or X2 type, 105 degree C.<br>(Compliance with IEC 60384-14) | FOWX2 | UL |  |
| 04e. X-Capacitor (CX1) (optional) (Alternate)        | XIANGTAI ELECTRONIC (SHENZHEN) CO LTD | MKP/MPX  | Rated max 0.33uF, min 250 V, X1 or X2 type, 110 degree C.<br>(Compliance with IEC 60384-14) | FOWX2 | UL |  |
| 05. Bleeder Resistors (RX1, RX2)                     | TZAI YUAN ENTERPRISE CO LTD           | HSMD series SMD series   | Max. 1.5M ohms, min. 1/4W   | AZOP2 | UL |  |
| 05a. Bleeder Resistors (RX1, RX2) (Alternate)        | PROSPERITY DIELECTRICS CO LTD         | FVS03, TF06V, FVS05, TF08V, FVS06, TF12V, FVS20, TF20V, FVS25, TF25V | Max. 1.5M ohms, min. 1/4W   | AZOT2 | UL |  |
| 05b. Bleeder Resistors (RX1, RX2) (Alternate)        | Ralec Electronic Corp                 | RTV05, RTV06, RTV12, RTV20, RTV25                                    | Max. 1.5M ohms, min. 1/4W   | --    | -- |  |
| 06. Bridge Diode (BD1)                               | --                                    | --   | Rated 4A, minimum 600 V.  | --    | -- |  |
| 07. Storage Capacitor (C1)                           | --                                    | --   | Rated 400 V, max. 120uF, min. 105 degree C, provided with integral pressure relief          | --    | -- |  |
| 08. Transistor (Q1) (for for the output voltage<24V) | Various                               | Various  | Rated 10-15 A, minimum 600 V.   | --    | -- |  |
| 08a. Transistor                                      | Various                               | Various  | Rated 10-15 A, minimum  | --    | -- |  |

|   |                                       |              |  |       |    |  |
|---|---------------------------------------|--------------|--|-------|----|--|
| (Q1) (for the output voltage is 24V)                    |                                       |              | 650 V.   |       |    |  |
| 09. Bridge Capacitors (CY1,CY2) (optional)              | Success Electronics Co Ltd            | SE, SB       | Rated max. 2200pF, min. 250 Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14) | FOWX2 | UL |  |
| 09a. Bridge Capacitors (CY1,CY2) (optional) (Alternate) | TDK CORPORATION                       | CD           | Rated max. 2200pF, min. 250 Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14) | FOWX2 | UL |  |
| 09b. Bridge Capacitors (CY1,CY2) (optional) (Alternate) | Walsin Technology Corp                | AH           | Rated max. 2200pF, min. 250 Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14) | FOWX2 | UL |  |
| 09c. Bridge Capacitors (CY1,CY2) (optional) (Alternate) | Haohua Electronic Co                  | CT 7         | Rated max. 2200pF, min. 250 Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14) | FOWX2 | UL |  |
| 09d. Bridge Capacitors (CY1,CY2) (optional) (Alternate) | XIANGTAI ELECTRONIC (SHENZHEN) CO LTD | YOB, YOF, YO | Rated max. 2200pF, min. 250 Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14) | FOWX2 | UL |  |
| 09e. Bridge Capacitors (CY1,CY2) (optional) (Alternate) | JUHONG ELE CO                         | JB           | Rated max. 2200pF, min. 250 Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14) | FOWX2 | UL |  |
| 09f. Bridge Capacitors (CY1,CY2) (optional) (Alternate) | Success Electronics Co Ltd            | SF           | Rated max. 2200pF, min. 250 Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14) | FOWX2 | UL |  |

|   |                                   |   |  |       |    |  |
|---|-----------------------------------|---|--|-------|----|--|
| 09g. Bridge Capacitors (CY1,CY2) (optional) (Alternate) | MURATA MFG CO LTD                 | KX  | Rated max. 2200pF, min. 250 Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14) | FOWX2 | UL |  |
| 10. Optical Isolator (PC1)                              | Lite-On Technology Corp           | LTV-817   | Isolation: 5000 Vac, minimum 100 degree C.   | FPQU2 | UL |  |
| 10a. Optical Isolators (PC1) (Alternate)                | Everlight Electronics Co Ltd      | EL817   | Isolation: 5000 Vac, minimum 110 degree C.   | FPQU2 | UL |  |
| 10b. Optical Isolators (PC1) (Alternate)                | COSMO ELECTRONICS CORP            | K1010   | Isolation voltage minimum 5000 Vac, minimum 115 degree C.                              | FPQU2 | UL |  |
| 10c. Optical Isolators (PC1) (Alternate)                | BRIGHT LED ELECTRONICS CORP       | BPC-817XXXXXX, BPC-817MXXXXXX, BPC-817SXXXXXX, where XXXXXX can be any alphanumeric character or blank. | Isolation voltage minimum 5000 Vac, minimum 100 degree C.                              | FPQU2 | UL |  |
| 10d. Optical Isolators (PC1) (Alternate)                | RENESAS ELECTRONICS CORPORATION   | PS2561-1  | Isolation voltage minimum 5000 Vac, minimum 100 degree C.                              | FPQU2 | UL |  |
| 10e. Optical Isolators (PC1) (Alternate)                | SHENZHEN ORIENT COMPONENTS CO LTD | ORPC-817Mx@, ORPC-817Sx@, ORPC-817x@  | Isolation voltage minimum 5000 Vac, minimum 100 degree C.                              | FPQU2 | UL |  |
| 11. Line filter (LF1) (Optional)                        | Various                           | NF00025   | Open type construction. Rated 105 degree C. Illustration 6 for dimensions              | --    | -- |  |
| 11-1. Core  | Various                           | Various   | Ferrite, toroidal, measured overall approx. 8mm OD by 4 mm                             | --    | -- |  |

|   |                     |                          |   |       |          |  |
|---|---------------------|--------------------------|---|-------|----------|--|
|   |                     |                          | ID by 4 mm wide.  |       |          |  |
| 11-2. Coil                                  | Various             | Various                  | Rated minimum 105 degree C.   | OBMW2 | UL       |  |
| 12. Line filter (LF2) (Optional)            | Various             | NF00123                  | Open type construction. Rated 105 degree C. Illustration 7 for dimensions                 | --    | --       |  |
| 12-1. Core                                  | Various             | Various                  | Ferrite, toroidal, measured overall approx. 16mm OD by 12 mm ID by 8 mm wide.             | --    | --       |  |
| 12-2. Coil                                  | Various             | Various                  | Rated minimum 105 degree C.   | OBMW2 | UL       |  |
| 12-3. Insulation Tape                       | Various             | Various                  | Rated minimum 105 degree C.   | OANZ2 | UL       |  |
| 13. Varistor (MOV1) (optional)              | CENTRA SCIENCE CORP | CNR 14V511K              | Rated minimum 300 Vac, minimum 385 Vdc. The coating is min. V-0. Comply with IEC 61051-2. | VZCA2 | UL, C-UL |  |
| 13a. Varistor (MOV1) (optional) (Alternate) | CENTRA SCIENCE CORP | CNR 10V471K, CNR 14D471K | Rated minimum 300 Vac, minimum 385 Vdc. The coating is min. V-0. Comply with IEC 61051-2. | VZCA2 | UL, C-UL |  |
| 13b. Varistor (MOV1) (optional) (Alternate) | CENTRA SCIENCE CORP | CNR 14D511K              | Rated minimum 300 Vac, minimum 385 Vdc. The coating is min. V-0. Comply with IEC 61051-2. | VZCA2 | UL, C-UL |  |
| 13c. Varistor (MOV1) (optional) (Alternate) | JOYIN CO LTD        | 10N511K, 10N471K         | Rated minimum 300 Vac, minimum 385 Vdc. The coating is min. V-0. Comply with IEC 61051-2. | VZCA2 | UL, C-UL |  |
| 13d. Varistor (MOV1) (optional)             | JOYIN CO LTD        | 14N471K, 14N511K,        | Rated minimum 300 Vac, minimum 385 Vdc. The   | VZCA2 | UL, C-UL |  |

|  |  |   |  |       |          |  |
|--|--|---|--|-------|----------|--|
| (Alternate)  |  | 14S511K                                     | coating is min. V-0.<br>Comply with IEC 61051-2.   |       |          |  |
| 13e. Varistor<br>(MOV1) (optional)<br>(Alternate)                    | THINKING<br>ELECTRONIC<br>INDUSTRIAL CO<br>LTD | TVR 14471,<br>TVR 10471-V                   | Rated minimum 300 Vac,<br>minimum 385 Vdc. The<br>coating is min. V-0.<br>Comply with IEC 61051-2.               | VZCA2 | UL, C-UL |  |
| 13f. Varistor<br>(MOV1) (optional)<br>(Alternate)                    | THINKING<br>ELECTRONIC<br>INDUSTRIAL CO<br>LTD | TVR 14511                                   | Rated minimum 300 Vac,<br>minimum 385 Vdc. The<br>coating is min. V-0.<br>Comply with IEC 61051-2.               | VZCA2 | UL, C-UL |  |
| 13i. Varistor<br>(MOV1) (optional)<br>(Alternate)                    | SUCCESS<br>ELECTRONICS CO<br>LTD               | SVR10D471Kxxx<br>xH,<br>SVR14D471Kxxx<br>xH | Rated minimum 300 Vac,<br>minimum 385 Vdc. The<br>coating is min. V-0.<br>Comply with IEC 61051-2.               | VZCA2 | UL, C-UL |  |
| 13j. Varistor<br>(MOV1) (optional)<br>(Alternate)                    | SUCCESS<br>ELECTRONICS CO<br>LTD               | SVR14D511Kxxx<br>xH,<br>SVR10D511Kxxx<br>xH | Rated minimum 300 Vac,<br>minimum 385 Vdc. The<br>coating is min. V-0.<br>Comply with IEC 61051-2.               | VZCA2 | UL, C-UL |  |
| 14. Transformer<br>(T1) (For output<br>voltage rated 12-<br>16Vdc)   | ENG Electric Co<br>Ltd                         | XF00927                                     | Class B, See Enclosure<br>/ Illustration XX for<br>construction details.   | --    | --       |  |
| 14a. Transformer<br>(T1) (for output<br>voltage rated<br>16.1-24Vdc) | ENG Electric Co<br>Ltd                         | XF00947                                     | Class B, See Enclosure<br>/ Illustration XX for<br>construction details.   | --    | --       |  |
| 14-01. Insulation<br>system for<br>Transformer (T1)                  | ENG Electric<br>Co., Ltd.                      | ENG130-1                                    | Insulation system Class<br>B (130 degree C,<br>adapted form GREAT<br>LEOFLOX INDUSTRIAL CO<br>LTD, Type GH-130). | OBJY2 | UL       |  |
| 14-02. Core  | --   | --  | EE type, Ferrite,  | --    | --       |  |

|   |   |         |  |               |    |  |
|---|---|---------|--|---------------|----|--|
|   |   |         | dimension 8mm OD,  |               |    |  |
| 14-03. Coil                               | --  | --      | 130 degree C   | OBMW2         | UL |  |
| 14-04. Bobbin                             | Chang Chun<br>Plastics Co.,<br>Ltd.                     | T375J   | V-0, 150degree C,<br>Phenolic, thickness<br>0.8mm minimum  | QMFZ2         | UL |  |
| 14-04a. Bobbin<br>(Alternate)             | SUMITOMO<br>BAKELITE CO LTD                             | PM-9820 | V-0, 150degree C,<br>Phenolic, thickness<br>0.71mm minimum   | QMFZ2         | UL |  |
| 14-05.<br>Tubing/Sleeving                 | Great Holding<br>Industrial Co.<br>Ltd.                 | TFL     | Rated 200 degree C, VW-<br>1, 600V max.  | YDPU2         | UL |  |
| 14-06. Triple<br>Insulated Wire           | Great Leoflon<br>Industrial Co.<br>Ltd.                 | TRW(B)  | 130 degree C   | OBJT2         | UL |  |
| 14-07. Varnish                            | Elantas<br>Electrical<br>Insulation<br>Elantas Pdg Inc  | V1630FS | Rated minimum 130<br>degree C.   | OBOR2         | UL |  |
| 14-08. Insulation<br>Tape                 | 3M Company  | 1350F-1 | 130 degree C.  | OANZ2         | UL |  |
| 14-08a.<br>Insulation Tape<br>(Alternate) | JINGJIANG YAHUA<br>PRESSURE<br>SENSITIVE GLUE<br>CO LTD | CT      | 130 degree C.  | OANZ2         | UL |  |
| 15. Internal Glue<br>Materials            | --  | --      | Rated V-2 minimum.   | QMFZ2         | UL |  |
| 16. Internal<br>Plastic Part<br>Materials | --  | --      | Rated minimum V-2.   | QMFZ2         | UL |  |
| 17. Output Cord                           | Various   | Various | Minimum 60 V, 80 degree<br>C, maximum 3.05 m,<br>marked VW-1 or FT-1.<br>Suitable for external<br>use. Refer to<br>Illustration 2 for<br>strain relief dimension<br>details. | AVLV2 or ZJCZ | UL |  |

|  |  |   |  |              |    |  |
|--|--|---|--|--------------|----|--|
| 18. PWB  | Various  | Various                                   | V-0 or better, minimum 105degree C.                                      | ZPMV2        | -- |  |
| 19. Label (optional)   | Various  | Various                                   | Minimum 70 degree C. if maximum surface temperature not specified.       | PGDQ2, PGJI2 | UL |  |
| 20. Heat Sink (HS1)<br>(Consideration as Primary )                 | Various  | Various                                   | Aluminum, minimum 2.0 mm thick. See Illustration for dimensions details. | --           | -- |  |
| 21. Heat Sink (HS2)<br>(Consideration as primary)                  | Various  | Various                                   | Aluminum, minimum 2.0 mm thick. See Illustration for dimensions details. | --           | -- |  |
| 22. LPS resistor (R10)   | --   | --  | 0.36 ohm, 2W.  | --           | -- |  |
| 23. Mylar sheet (between PCB trace and EMI shield)                 | ITW ELECTRONICS COMPONENTS/ PRODUCTS (SHANGHAI) CO LTD | Formex GK-17, Formex GK-10, Formex GK-5BK | V-0, min. 115°C min. 0.4mm thickness. See Illustration for details.      | QMFZ2        | UL |  |
| 23a. Mylar sheet (between PCB trace and EMI shield)<br>(Alternate) | ITW ELECTRONICS COMPONENTS/ PRODUCTS (SHANGHAI) CO LTD | Formex-18                                 | V-0, min. 100°C min. 0.4mm thickness. See Illustration for details.      | QMFZ2        | UL |  |
| 23b. Mylar sheet (between PCB trace and EMI shield)<br>(Alternate) | SICHUAN LONGHUA FILM CO LTD                            | PP-WT17, PP-BK18                          | V-0, min. 100°C, min. 0.4mm thickness. See Illustration for details.     | QMFZ2        | UL |  |
| 23c. Mylar sheet (between PCB trace and EMI shield)<br>(Alternate) | SABIC JAPAN L L C                                      | FR700, FR60, FR1                          | V-0, min. 125°C min. 0.4mm thickness. See Illustration for details.      | QMFZ2        | UL |  |
| 24. Bonding Conductor  | Various  | Various                                   | Green or green/yellow wire, minimum No. 18                               | AVLV, AVLV2  | UL |  |



|   |   |                 |   |       |    |  |
|---|---|-----------------|---|-------|----|--|
|   |   |                 | AWG.  |       |    |  |
| 25. LED Barrier<br>(Optional)           | SABIC JAPAN L L<br>C                              | 945 (GG)        | Rated V-0 or better,<br>120 degree C min.<br>Minimum 2.0 mm<br>thickness. | QMFZ2 | UL |  |
| 26 Insulation tape<br>(provided on HS2) | 3M Company<br>Electrical<br>Markets Div.<br>(EMD) | 1350T-1         | Min. 130°C<br>Min. 2 layers   | OANZ2 | UL |  |
| 27 Strain Relief                        | Interchangeable                                   | Interchangeable | V-1 or better. See<br>Illustration 2 for<br>dimensions details.           | QMFZ2 | UL |  |

**ENCLOSURES**

| <u>Type</u>   | <u>Supplement ID</u> | <u>Description</u>  |
|---------------|----------------------|---|
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|               | Figure - 2           | External View - 2 (for Model Z = 3)                             |
|               | Figure - 3           | External View - 3 (for Model Z = 3A)                            |
|               | Figure - 4           | Internal View - 1 (for Model Z = 3)                             |
|               | Figure - 5           | Internal View - 2 (for Model Z = 3A)                            |
|               | Figure - 6           | Power Board Top Side - 1 (for Model Z = 3)                      |
|               | Figure - 7           | Power Board Top Side - 2 (for Model Z = 3), Heat Sink Removed)  |
|               | Figure - 8           | Power Board Top Side - 3 (for Model Z = 3A)                     |
|               | Figure - 9           | Power Board Top Side - 4 (for Model Z = 3A), Heat Sink Removed) |
|               | Figure - 10          | Power Board Bottom Side - 1                                     |
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|               | Illustration - 3     | Strain Relief Of Output Cord                                    |
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|               | Illustration - 10    | Line filter (LF1) specifications                                |
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