

CERTIFICATE OF COMPLIANCE

Certificate Number 20151013-E170507
Report Reference E170507-20130929
Issue Date 2015-OCTOBER-13

Issued to: GLOBTEK INC
186 VETERANS DR
NORTHVALE , NJ 07647
United States

This is to certify that representative samples of POWER SUPPLIES, INFORMATION TECHNOLOGY EQUIPMENT INCLUDING ELECTRICAL BUSINESS EQUIPMENT

For models refer to Addendum Page

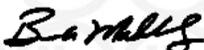
Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 60950-1 and CAN/CSA C22.2 No. 60950-1-07 - Information Technology Equipment - Safety - Part 1: General Requirements

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

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This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Switching Power Adapter - GT-41131-WWVV-X.X series: WW is the rated output wattage designation, with a maximum value of "30"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments.

GT-41133-WWVV-X.X-T2 series:

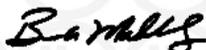
WW is the rated output wattage designation, with a maximum value of "90"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments.

GT-41132-WWVV-X.X-T2 series: WW is the rated output wattage designation, with a maximum value of "60"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments.

GT-41083-WWVV-X.X-T2 series: WW is the rated output wattage designation, with a maximum value of "40"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments

GT-41130-WWVV-X.X-T2 Series: WW is the rated output wattage designation, with a maximum value of "24"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments.

GT-41130-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "24"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments Z presents different inlets, where "3" presents C14, "3A" presents C6.



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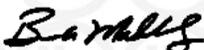
GT-41130-WWVV-X.X-Wy series: WW is the rated output wattage designation, with a maximum value of "24"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments y denotes plug type.

GT-41132-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "60"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments Z presents different inlets, where "3" presents C14, "3A" presents C6.

GT-41134-WWVV-X.X series: WW is the rated output wattage designation, with a maximum value of "06"; VV is the standard rated output voltage designation, with a maximum value of "15"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments

GT-41135-WWVV-X.X series: WW is the rated output wattage designation, with a maximum value of "12"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments

GT-41133-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "90"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments, Z presents different inlets, where "3" presents C14, "3A" presents C6.



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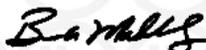
GT-43007-WWVV-X.X series, WW is the rated output wattage designation, with a maximum value of "40.8"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments.

GT-41082-WWVV-X.X-T2 series, WW is the rated output wattage designation, with a maximum value of "18"; VV is the standard rated output voltage designation, with a maximum value of "15"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments.

GT-43004PWWVV-X.X-TZ series: (-WW is the rated output wattage designation, with a maximum value of "24"; -VV is the standard rated output voltage designation, with a maximum value of "150"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments; -Z presents different inlets, where "3" presents C14, "3A" presents C6.

Switch-Mode Power Supply - GT-43005-1005-W2-USB, GT-43005-WWVV-X.X series (WW is the rated output wattage designation, with a maximum value of "12"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments).

Switch-Mode Power Supply - GT-41134-WWVV-X.X series and GT-41134-WWVV-X.X-W2-USB series; WW is the rated output wattage designation, with a maximum value of "06"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments -USB is optional which denotes USB output port.



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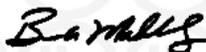
GT-43006-WWVV-X.X-TZ series , WW is the rated output wattage designation, with a maximum value of "40"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments Z presents different inlets, where "3" presents C14, "3A" presents C6, "2" presents C8.

GT-43008-WWVV-X.X-TZ series, WW is the rated output wattage designation, with a maximum value of "50"; VV is the standard rated output voltage designation, with a maximum value of "24"; X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments; Z presents different inlets, where "3" presents C14, "3A" presents C6, "2" presents C8.

Switching Power Adapter - GT-41082-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "18"; VV is the standard rated output voltage designation, with a maximum value of "15"; X.X designates the optional deviation, X.X should be VV minus the rated voltage, and it can be blank; Z presents different inlets, where "3" presents C14, "3A" presents C6

ITE POWER SUPPLY - GT-46050-WW05-W2; WW can be 01,02,03,04,05 denote the output wattage

GT-46200-WWVV-X.XX-TZ, GT-41130-WWVV-X.XX-TZ [EL6]; WW is the standard output wattage, with a maximum value of "20", VV is the standard rated output voltage designation, with a value of "05" and "06"; -X.XX denote the output voltage differentiator, subtracting X.XX volts from standard output voltage VV in 0.01V increments, the actual output voltage rang is 5-24V, blank is to indicate the no voltage different. Z can be 3 or 3A, 3 means C14 inlet type, 3A means C6 inlet type



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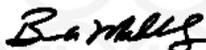
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GT-46180-WWVV-X.XX series, GT-41052-WWVV-X.XX [EL6] series, GT-41062-WWVV-X.XX [EL6] series, GT-41080-WWVV-X.XX [EL6] series and GT-41081-WWVV-X.XX [EL6] series
WW is the standard output wattage, with a maximum value of "18", VV is the standard rated output voltage designation, with a maximum value of "24"; which can be 05,09,12,15,18,24.
-X.XX denote the output voltage differentiator, subtracting X.XX volts from standard output voltage VV in 0.01V increments, the actual output voltage rang is 5-24V, blank is to indicate the no voltage different.

ITE POWER SUPPLY - GT-46060-WWVV-X.XX series, GT-41076-WWVV-X.XX [EL6] series and GT-41134-WWVV-X.XX [EL6] series; WW is the standard output wattage, with a maximum value of "06"
VV is the standard rated output voltage designation, with a value of "05,06,09,12,15,18,24";
-X.XX denote the output voltage differentiator, subtracting X.XX volts from standard output voltage VV in 0.01V increments, the actual output voltage rang is 5-24V, blank is to indicate the no voltage different.

GT-46600-WWVV-X.X-TZ. WW is the standard output wattage, with a maximum value of "65", VV is the standard rated output voltage designation, with a value of "12" "15"and "24";
-X.X denote the output voltage differentiator, subtracting X.X volts from standard output voltage VV in 0.1V increments, the actual output voltage rang is 12-24V, blank is to indicate the no voltage different.
Z can be 3 or 3A, 3 means C14 inlet type, 3A means C6 inlet typ

GT-46600-WWVV-X.X-T2; WW is the standard output wattage, with a maximum value of "65", VV is the standard rated output voltage designation, with a value of "12" "15"and "24";
-X.X denote the output voltage differentiator, subtracting X.X volts from standard output voltage VV in 0.1V increments, the actual output voltage rang is 12-24V, blank is to indicate the no voltage different.



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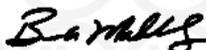
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ITE POWER SUPPLY GT-46400-WWVV-X.X-TZ; WW is the standard output wattage, with a maximum value of "40", VV is the standard rated output voltage designation, with a value of "12" "15" "19" and "24"; -X.X denote the output voltage differentiator, subtracting 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. Z can be 3 or 3A, 3 means C14 inlet type, 3A means C6 inlet type

GT-46400-WWVV-X.X-T2; WW is the standard output wattage, with a maximum value of "40", VV is the standard rated output voltage designation, with a value of "12" "15" "19" and "24"; -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.



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Multiple Listing Correlation Sheet

ML FILE NO. E170507

Issued: 2013-09-29
Revised: 2014-02-20

MULTIPLE LISTING
of
POWER SUPPLIES, INFORMATION TECHNOLOGY EQUIPMENT INCLUDING ELECTRICAL
BUSINESS EQUIPMENT
(QQGQ, QQGQ7)
for

[578908-003] GLOBTEK INC

Basically Listed for:

[100551-385] GLOBTEK (HONG KONG) LTD (NWT)

Basically Listed products covered by Procedure and/or Reports under File No. E341351, Volume X8

| Products Covered | Report Reference | Basic Applicant's (Supplier's) Product Designation | Multiple Listee's Product Designation |
|-------------------------|------------------|--|--|
| Switching Power Adapter | A32-UL | GT-41131-WWVV-X.X series: WW is the rated output wattage designation, with a maximum value of "30"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. | GT-41131-WWVV-X.X series: WW is the rated output wattage designation, with a maximum value of "30"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. |

MARKING: Same as that described in Follow-Up Service Procedure and/or Report except for Multiple Listee's name, file number, Trademark / Tradename, when applicable, and product designation. The Control Number remains 4MU8.

LITERATURE: If literature is packaged with the Multiple Listed product(s) it shall be in compliance with the requirements outlined in the appropriate UL Standard(s).



Multiple Listing Correlation Sheet

Issued: 2013-09-29
 Revised: 2014-02-20

M/L [578908-003] GLOBTEK INC
 AP [100551-385] GLOBTEK (HONG KONG) LTD (NWT)

| Products Covered | Report Reference | Basic Applicant's (Supplier's) Product Designation | Multiple Listee's Product Designation |
|-------------------------|------------------|---|---|
| Switching Power Adapter | A33-UL | GT-41133-WWVV-X.X-T2 series: WW is the rated output wattage designation, with a maximum value of "90"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. | GT-41133-WWVV-X.X-T2 series: WW is the rated output wattage designation, with a maximum value of "90"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. |
| Switching Power Adapter | A34-UL | GT-41132-WWVV-X.X-T2 series: WW is the rated output wattage designation, with a maximum value of "60"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments | GT-41132-WWVV-X.X-T2 series: WW is the rated output wattage designation, with a maximum value of "60"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments |

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M/L [578908-003] GLOBTEK INC

AP [100551-385] GLOBTEK (HONG KONG) LTD (NWT)

| Products Covered | Report Reference | Basic Applicant's (Supplier's) Product Designation | Multiple Listee's Product Designation |
|-------------------------|------------------|---|---|
| Switching Power Adapter | A35-UL | GT-41083-WWVV-X.X-T2 series: WW is the rated output wattage designation, with a maximum value of "40"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments | GT-41083-WWVV-X.X-T2 series: WW is the rated output wattage designation, with a maximum value of "40"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments |
| Switching Power Adapter | A36-UL | GT-41130-WWVV-X.X-T2 Series: WW is the rated output wattage designation, with a maximum value of "24"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. | GT-41130-WWVV-X.X-T2 Series: WW is the rated output wattage designation, with a maximum value of "24"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. |

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|-------------------------|------------------|--|--|
| Switching Power Adapter | A37-UL | GT-41130-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "24"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments Z presents different inlets, where "3" presents C14, "3A" presents C6. | GT-41130-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "24"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments Z presents different inlets, where "3" presents C14, "3A" presents C6. |
| Switching Power Adapter | A38-UL | GT-41130-WWVV-X.X-Wy series: WW is the rated output wattage designation, with a maximum value of "24"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments y denotes plug type. | GT-41130-WWVV-X.X-Wy series: WW is the rated output wattage designation, with a maximum value of "24"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments y denotes plug type. |

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|-------------------------|------------------|--|--|
| Switching Power Adapter | A39-UL | GT-41132-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "60"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments Z presents different inlets, where "3" presents C14, "3A" presents C6. | GT-41132-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "60"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments Z presents different inlets, where "3" presents C14, "3A" presents C6. |
| Switching Power Adapter | A40-UL | GT-41134-WWVV-X.X series: WW is the rated output wattage designation, with a maximum value of "06"; VV is the standard rated output voltage designation, with a maximum value of "15"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments | GT-41134-WWVV-X.X series: WW is the rated output wattage designation, with a maximum value of "06"; VV is the standard rated output voltage designation, with a maximum value of "15"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments |

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| Switching Power Adapter | A41-UL | GT-41135-WWVV-X.X series: WW is the rated output wattage designation, with a maximum value of "12"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments | GT-41135-WWVV-X.X series: WW is the rated output wattage designation, with a maximum value of "12"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments |
| Switching Power Adapter | A42-UL | GT-41133-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "90"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments, Z presents different inlets, where "3" presents C14, "3A" presents C6. | GT-41133-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "90"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments, Z presents different inlets, where "3" presents C14, "3A" presents C6. |

MARKING: Same as that described in Follow-Up Service Procedure and/or Report except for Multiple Listee's name, file number, Trademark / Tradename, when applicable, and product designation. The Control Number remains 4MU8.

LITERATURE: If literature is packaged with the Multiple Listed product(s) it shall be in compliance with the requirements outlined in the appropriate UL Standard(s).



Multiple Listing Correlation Sheet

Issued: 2013-09-29
 Revised: 2014-02-20

M/L [578908-003] GLOBTEK INC
 AP [100551-385] GLOBTEK (HONG KONG) LTD (NWT)

| Products Covered | Report Reference | Basic Applicant's (Supplier's) Product Designation | Multiple Listee's Product Designation |
|-------------------------|------------------|---|---|
| SWITCHING POWER ADAPTER | A43-UL | GT-43007-WWVV-X.X series, WW is the rated output wattage designation, with a maximum value of "40.8"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. | GT-43007-WWVV-X.X series, WW is the rated output wattage designation, with a maximum value of "40.8"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. |
| Switching Power Adapter | A44-UL | GT-41082-WWVV-X.X-T2 series , WW is the rated output wattage designation, with a maximum value of "18"; VV is the standard rated output voltage designation, with a maximum value of "15"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. | GT-41082-WWVV-X.X-T2 series , WW is the rated output wattage designation, with a maximum value of "18"; VV is the standard rated output voltage designation, with a maximum value of "15"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. |

MARKING: Same as that described in Follow-Up Service Procedure and/or Report except for Multiple Listee's name, file number, Trademark / Tradename, when applicable, and product designation. The Control Number remains 4MU8.

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Multiple Listing Correlation Sheet

Issued: 2013-09-29
 Revised: 2014-02-20

M/L [578908-003] GLOBTEK INC

AP [100551-385] GLOBTEK (HONG KONG) LTD (NWT)

| Products Covered | Report Reference | Basic Applicant's (Supplier's) Product Designation | Multiple Listee's Product Designation |
|--------------------------|------------------|--|--|
| Switching Power Adapter | A45-UL | GT-43004PWWWV-V-X.X-TZ series: (-WW is the rated output wattage designation, with a maximum value of "24"; -VV is the standard rated output voltage designation, with a maximum value of "150"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments; -Z presents different inlets, where "3" presents C14, "3A" presents C6. | GT-43004PWWWV-V-X.X-TZ series: (-WW is the rated output wattage designation, with a maximum value of "24"; -VV is the standard rated output voltage designation, with a maximum value of "150"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments; -Z presents different inlets, where "3" presents C14, "3A" presents C6. |
| Switch-Mode Power Supply | A46-UL | GT-43005-1005-W2-USB, GT-43005-WWVV-X.X series (WW is the rated output wattage designation, with a maximum value of "12"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments). | GT-43005-1005-W2-USB, GT-43005-WWVV-X.X series (WW is the rated output wattage designation, with a maximum value of "12"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments). |

MARKING: Same as that described in Follow-Up Service Procedure and/or Report except for Multiple Listee's name, file number, Trademark / Tradename, when applicable, and product designation. The Control Number remains 4MU8.

LITERATURE: If literature is packaged with the Multiple Listed product(s) it shall be in compliance with the requirements outlined in the appropriate UL Standard(s).



Multiple Listing Correlation Sheet

Issued: 2013-09-29
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M/L [578908-003] GLOBTEK INC

AP [100551-385] GLOBTEK (HONG KONG) LTD (NWT)

| Products Covered | Report Reference | Basic Applicant's (Supplier's) Product Designation | Multiple Listee's Product Designation |
|--------------------------|------------------|---|---|
| Switch-Mode Power Supply | A47-UL | GT-41134-WWVV-X.X series and GT-41134-WWVV-X.X-W2-USB series WW is the rated output wattage designation, with a maximum value of "06"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments -USB is optional which denotes USB output port. | GT-41134-WWVV-X.X series and GT-41134-WWVV-X.X-W2-USB series WW is the rated output wattage designation, with a maximum value of "06"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments -USB is optional which denotes USB output port. |

MARKING: Same as that described in Follow-Up Service Procedure and/or Report except for Multiple Listee's name, file number, Trademark / Tradename, when applicable, and product designation. The Control Number remains 4MU8.

LITERATURE: If literature is packaged with the Multiple Listed product(s) it shall be in compliance with the requirements outlined in the appropriate UL Standard(s).



Multiple Listing Correlation Sheet

Issued: 2013-09-29
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M/L [578908-003] GLOBTEK INC

AP [100551-385] GLOBTEK (HONG KONG) LTD (NWT)

| Products Covered | Report Reference | Basic Applicant's (Supplier's) Product Designation | Multiple Listee's Product Designation |
|--------------------------|------------------|--|--|
| SWITCH MODE POWER SUPPLY | A48-UL | GT-43006-WWVV-X.X-TZ series , WW is the rated output wattage designation, with a maximum value of "40"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments Z presents different inlets, where "3" presents C14, "3A" presents C6, "2" presents C8. | GT-43006-WWVV-X.X-TZ series , WW is the rated output wattage designation, with a maximum value of "40"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments Z presents different inlets, where "3" presents C14, "3A" presents C6, "2" presents C8. |

MARKING: Same as that described in Follow-Up Service Procedure and/or Report except for Multiple Listee's name, file number, Trademark / Tradename, when applicable, and product designation. The Control Number remains 4MU8.

LITERATURE: If literature is packaged with the Multiple Listed product(s) it shall be in compliance with the requirements outlined in the appropriate UL Standard(s).



Multiple Listing Correlation Sheet

Issued: 2013-09-29
 Revised: 2014-02-20

M/L [578908-003] GLOBTEK INC
 AP [100551-385] GLOBTEK (HONG KONG) LTD (NWT)

| Products Covered | Report Reference | Basic Applicant's (Supplier's) Product Designation | Multiple Listee's Product Designation |
|----------------------------|------------------|---|---|
| SWITCH-MODE POWER SUPPLIES | A49-UL | GT-43008-WWVV-X.X-TZ series, WW is the rated output wattage designation, with a maximum value of "50"; VV is the standard rated output voltage designation, with a maximum value of "24"; X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments; Z presents different inlets, where "3" presents C14, "3A" presents C6, "2" presents C8. | GT-43008-WWVV-X.X-TZ series, WW is the rated output wattage designation, with a maximum value of "50"; VV is the standard rated output voltage designation, with a maximum value of "24"; X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments; Z presents different inlets, where "3" presents C14, "3A" presents C6, "2" presents C8. |
| Switching Power Adapter | A62-UL | GT-41082-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "18"; VV is the standard rated output voltage designation, with a maximum value of "15"; X.X designates the optional deviation, X.X should be VV minus the rated voltage, and it can be blank; Z presents different inlets, where "3" presents C14, "3A" presents C6 | GT-41082-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "18"; VV is the standard rated output voltage designation, with a maximum value of "15"; X.X designates the optional deviation, X.X should be VV minus the rated voltage, and it can be blank; Z presents different inlets, where "3" presents C14, "3A" presents C6 |

MARKING: Same as that described in Follow-Up Service Procedure and/or Report except for Multiple Listee's name, file number, Trademark / Tradename, when applicable, and product designation. The Control Number remains 4MU8.

LITERATURE: If literature is packaged with the Multiple Listed product(s) it shall be in compliance with the requirements outlined in the appropriate UL Standard(s).

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| <u>Product Type</u> | <u>Model/Type Reference</u> | <u>Report Reference #</u> | <u>Status</u> |
|--------------------------|---|---------------------------|---------------|
| Switching Power Supply | GT-41131-WWVV-X.X series: WW is the rated output wattage designation, with a maximum value of "30"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. | E341351-A32-UL | |
| SWITCHING POWER ADAPTER | GT-41133-WWVV-X.X-AB "WW" is the rated output wattage designation, with a maximum value of 90. "VV" is the standard rated output voltage designation, with a maximum value of 48. "-X.X" is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. "VV-X.X" together denotes a voltage range of "12-48" Vdc. A=T; B= 2 or 3 or 3A,"2" means class II, 3 or 3A means Class I, where"3" presents C14 type inlet, "3A" presents C6 type inlet."2 " means C8 type inlet. | E341351-A33-UL | |
| Switch Mode Power Supply | GT-41132-WWVV-X.X-T2 series: WW is the rated output wattage designation, with a maximum value of "60"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments | E341351-A34-UL | |
| Switch Mode Power Supply | GT-41083-WWVV-X.X-T2 series: WW is the rated output wattage designation, with a maximum value of "40"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments | E341351-A35-UL | |
| Switching Power Adapter | GT-41130-WWVV-X.X-T2 Series: WW is the rated output wattage designation, with a maximum value of "24"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. | E341351-A36-UL | |
| Switching Power Adapter | GT-41130-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "24"; | E341351-A37-UL | |

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| | VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments Z presents different inlets, where "3" presents C14, "3A" presents C6. | | |
| Switching Power Adapter | GT-41130-WWVV-X.X-Wy series: WW is the rated output wattage designation, with a maximum value of "24"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments y denotes plug type. | E341351-A38-UL | |
| Switching Power Adapter | GT-41132-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "60"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments Z presents different inlets, where "3" presents C14, "3A" presents C6. | E341351-A39-UL | |
| Switching Power Supply | GT-41134-WWVV-X.X series: WW is the rated output wattage designation, with a maximum value of "06"; VV is the standard rated output voltage designation, with a maximum value of "15"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments | E341351-A40-UL | |
| Switching Power Adapter | GT-41135-WWVV-X.X series: WW is the rated output wattage designation, with a maximum value of "12"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments | E341351-A41-UL | |
| SWITCHING POWER ADAPTER | GT-41133-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "90"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments, Z presents different inlets, where "3" presents C14, "3A" presents C6. | E341351-A42-UL | |
| Switching Power Adapter | GT-43007-WWVV-X.X series, WW is the rated output wattage designation, with a maximum value of "40.8"; VV is the standard rated output voltage designation, with a maximum value of "48"; | E341351-A43-UL | |

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| | -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. | | |
| Switching Power Adapter | GT-41082-WWVV-X.X-T2 series , WW is the rated output wattage designation, with a maximum value of "18"; VV is the standard rated output voltage designation, with a maximum value of "15"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. | E341351-A44-UL | |
| Switching Power Adapter | GT-43004PWWVVV-X.X-TZ series: WWW is the rated output wattage designation, with a maximum value of "150"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments; Z presents different inlets, where "3" presents C14, "3A" presents C6. | E341351-A45-UL | |
| Switch-Mode Power Supply | GT-43005-1005-W2-USB, GT-43005-WWVV-X.X series (WW is the rated output wattage designation, with a maximum value of "12"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments). | E341351-A46-UL | |
| Switch-Mode Power Supply | GT-41134-WWVV-X.X series and GT-41134-WWVV-X.X-W2-USB series WW is the rated output wattage designation, with a maximum value of "06"; VV is the standard rated output voltage designation, with a maximum value of "24"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments -USB is optional which denotes USB output port. | E341351-A47-UL | |
| SWITCH MODE POWER SUPPLY | GT-43006-WWVVV-X.X-TZ series , WW is the rated output wattage designation, with a maximum value of "40"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X is optional or blank and denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments Z presents different inlets, where "3" presents C14, "3A" presents C6, "2" presents C8. | E341351-A48-UL | |
| SWITCH-MODE POWER SUPPLIES | GT-43008-WWVVV-X.X-TZ series, WW is the rated output wattage designation, with a maximum value of "50"; VV is the standard rated output voltage designation, with a maximum value of "24"; X.X is optional or blank and denotes the output | E341351-A49-UL | |

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| | voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments; Z presents different inlets, where "3" presents C14, "3A" presents C6, "2" presents C8. | | |
| Switching Power Adapter | GT-41082-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "18"; VV is the standard rated output voltage designation, with a maximum value of "15"; X.X designates the optional deviation, X.X should be VV minus the rated voltage, and it can be blank; Z presents different inlets, where "3" presents C14, "3A" presents C6. | E341351-A62-UL | |
| ITE POWER SUPPLY | GT-46050-WW05-W2 WW can be 01,02,03,04,05 denote the output wattage | E341351-A68-UL | |
| ITE Power Supply | GT-46200-WWVV-X.XX-TZ, GT-41130-WWVV-X.XX-TZ [EL6] WW is the standard output wattage, with a maximum value of "20", VV is the standard rated output voltage designation, with a value of "05" and "06"; -X.XX denote the output voltage differentiator, subtracting X.XX volts from standard output voltage VV in 0.01V increments, the actual output voltage rang is 5-24V, blank is to indicate the no voltage different. Z can be 3 or 3A, 3 means C14 inlet type, 3A means C6 inlet type | E341351-A69-UL | |
| ITE POWER SUPPLY | GT-46180-WWVV-X.XX series, GT-41052-WWVV-X.XX [EL6] series, GT-41062-WWVV-X.XX [EL6] series, GT-41080-WWVV-X.XX [EL6] series and GT-41081-WWVV-X.XX [EL6] series WW is the standard output wattage, with a maximum value of "18", VV is the standard rated output voltage designation, with a maximum value of "24";which can be 05,09,12,15,18,24. -X.XX denote the output voltage differentiator, subtracting X.XX volts from standard output voltage VV in 0.01V increments, the actual output voltage rang is 5-24V, blank is to indicate the no voltage different. | E341351-A70-UL | |
| ITE POWER SUPPLY | GT-46060-WWVV-X.XX series, GT-41076-WWVV-X.XX [EL6] series and GT-41134-WWVV-X.XX [EL6] series WW is the standard output wattage, with a maximum value of "06" VV is the standard rated output voltage designation, with a value of "05,06,09,12,15,18,24"; -X.XX denote the output voltage differentiator, subtracting X.XX volts from standard output voltage VV in 0.01V increments, the actual output voltage rang is 5-24V, blank is to indicate the no voltage different. | E341351-A71-UL | |

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| ITE POWER SUPPLY | GT-46600-WWVV-X.X-TZ WW is the standard output wattage, with a maximum value of "65", VV is the standard rated output voltage designation, with a value of "12" "15"and "24"; -X.X denote the output voltage differentiator, subtracting X.X volts from standard output voltage VV in 0.1V increments, the actual output voltage rang is 12-24V, blank is to indicate the no voltage different. Z can be 3 or 3A, 3 means C14 inlet type, 3A means C6 inlet type | E341351-A72-UL | |
| ITE POWER SUPPLY | GT-46600-WWVV-X.X-T2 WW is the standard output wattage, with a maximum value of "65", VV is the standard rated output voltage designation, with a value of "12" "15"and "24"; -X.X denote the output voltage differentiator, subtracting X.X volts from standard output voltage VV in 0.1V increments, the actual output voltage rang is 12-24V, blank is to indicate the no voltage different. | E341351-A73-UL | |
| ITE POWER SUPPLY | GT-46400-WWVV-X.X-TZ WW is the standard output wattage, with a maximum value of "40", VV is the standard rated output voltage designation, with a value of "12" "15" "19"and "24"; -X.X denote the output voltage differentiator, subtracting X.X volts from standard output voltage VV in 0.1V increments, the actual output voltage rang is 12-24V, blank is to indicate the no voltage different. Z can be 3 or 3A, 3 means C14 inlet type, 3A means C6 inlet type | E341351-A74-UL | |
| ITE POWER SUPPLY | GT-46400-WWVV-X.X-T2 WW is the standard output wattage, with a maximum value of "40", VV is the standard rated output voltage designation, with a value of "12" "15" "19"and "24"; -X.X denote the output voltage differentiator, subtracting X.X volts from standard output voltage VV in 0.1V increments, the actual output voltage rang is 12-24V, blank is to indicate the no voltage different. | E341351-A75-UL | |

Generic Inspection Instructions

GENERIC INSPECTION INSTRUCTIONS

| Product Category | Listing / Classification CCN | Component Recognition CCN ** |
|---|------------------------------|------------------------------|
| Theater Dimmer Controls | EPCT, EPCT7 | -- |
| Graphic Arts Equipment | KCQT, KCQT7 | - |
| Information Technology Equipment Including Electrical Business Equipment | NWGQ, NWGQ7 | NWGQ2, NWGQ8 |
| Photographic Equipment | QINT, QINT7 | QINT2, QINT8 |
| Power Distribution Centers for Communications Equipment | QPQY, QPQY7 | QPQY2, QPQY8 |
| Power Supplies for Information Technology Equipment Including Electrical Business Equipment | QQGQ, QQGQ7 | QQGQ2, QQGQ8 |
| Scales and Accessories | TUTT, TUTT7 | TUTT2, TUTT8 |

** These instructions shall also be used for the indicated Component Recognition CCNs unless specifically exempted from the factory production-line tests as noted in each individual Test Report.

These instructions contain the UL LLC Follow-Up inspection requirements for manufacturing and production-line tests. These requirements are considered to be certification requirements related to Follow-Up inspection of equipment, as such, they are not included in the Bi-National Standard as deviations from IEC 60950 or IEC 60950-1.

These instructions consist of the following Parts:

| Part | Description |
|------|--|
| AA | Instructions and Duties for UL Representative |
| AB | Instructions for Follow-Up Tests at UL |
| AC | Responsibilities and Requirements for Manufacturer |
| AD | General Terminology |
| AE | General Product Construction Requirements |
| AF | UL Certification Marks |

Generic Inspection Instructions

PART AA

INSTRUCTIONS AND DUTIES FOR UL REPRESENTATIVE

| | |
|-------|---|
| AA1.0 | UL REPRESENTATIVE'S DUTIES |
| AA1.1 | <p>The UL Representative's duties include, but are not limited to:</p> <ul style="list-style-type: none"> A. Examining the construction of production intended to bear the UL Mark or Marking to determine compliance with the description of the product and any other requirements expressed in this Procedure. B. Where so specified in each Test Report, forwarding samples to UL for Follow-Up tests C. Where so specified by Part AC, inspecting the test records and facilities of the manufacturer to ensure that: <ul style="list-style-type: none"> 1. The proper number of samples are undergoing the required tests, and 2. The required tests are being performed correctly, and 3. The proper information is being recorded and is up-to-date, and 4. The instruments being used for the tests have been calibrated at the prescribed interval and are in good working order. |
| AA2.0 | PROCEDURE IN CASE OF NONCONFORMANCE |
| AA2.1 | <p>Report to the manufacturer and UL LLC by means of a Variation Notice (VN) if:</p> <ul style="list-style-type: none"> A. Variations in construction are found, or B. The manufacturer's method and/or frequency of testing is not as described, or C. The test records maintained by the manufacturer are not as described, or D. The manufacturer's inspection program is not being performed as described, or E. Nonconforming test results are witnessed during tests conducted specifically for the UL Representative. |
| AA2.2 | <p>Explain to the manufacturer that a VN is a means of communication with the manufacturer and applicant and forms a record of those items where nonconformance to the Procedure has been found. Reference is to be made to "Information for Manufacturer's Variation Notices" on the back of the VN.</p> |
| AA2.3 | <p>When a product does not conform with the Procedure, require that the manufacturer:</p> <ul style="list-style-type: none"> A. Remove any markings referencing UL from the product, or B. Suitably modify all products that do not comply with the Procedure, or C. Hold shipment pending further instructions from UL LLC <p>Exception: Production may be temporarily accepted if it can be determined that the nonconformance does not present a conflict with the applicable UL requirements, and laboratory testing (other than Follow-Up testing) is not required to determine product compliance.</p> |

Generic Inspection Instructions

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| AA2.4 | In the event of a disagreement between the manufacturer and the UL Representative as to whether a product is acceptable, the manufacturer shall hold production at the factory pending resolution of the variations. The manufacturer and applicant have the right to appeal the decision; and the UL Representative shall provide the name of the UL Engineer to whom the appeal is to be made. If the UL Engineer is not known the manufacturer is to be directed to contact the Client Advisor at the Reviewing Office. Should UL LLC grant temporary authorization for the continued use of the UL Mark, such temporary authorization shall only be for the time needed to review and/or process the Procedure revisions, or as otherwise specified to cover a particular lot or production run. |
| AA3.0 | INSTRUCTIONS FOR INSPECTION OF THE PRODUCT |
| AA3.1 | At each inspection, samples of current production and/or stock shall be examined for compliance with the applicable descriptions and requirements contained in this Procedure. |
| AA4.0 | INSTRUCTIONS FOR SAMPLE SELECTION |
| AA4.1 | Certain products contained in this Procedure employ plastic enclosures that may require Follow-Up testing when the material is not a Recognized Component Plastic (QMFZ2). Where indicated in each Test Report, samples shall be selected once per year. |
| AA4.2 | Where Follow-Up tests are required, the number and type of samples to be selected and the tests to be conducted are indicated in each Test Report. Where different models shown use identical enclosures (material and dimensions), a single enclosure can be sent to represent all models. When several alternate materials are specified for particular models, only a sample of the enclosure material currently in use should be sent. |
| AA4.3 | The selected samples shall be appropriately tagged to indicate materials, manufacturer and model/cat. no., and shall be forwarded to the appropriate Reviewing Office. Each enclosure sample should also be marked with the Procedure and Report Reference Number that the sample represents. |

Generic Inspection Instructions

PART AB

INSTRUCTIONS FOR FOLLOW-UP TESTS AT UL

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| AB1.0 | GENERAL |
| AB1.1 | A Test Report may require Follow-Up Tests for specific products. The stated sample requirements and test specifics are based the information in AB2.0. |
| AB1.1 | The samples forwarded by the UL Representative shall be subjected to the specified tests in accordance with the method and basis of acceptability noted in AB3.0. |
| AB1.2 | All clause references are from the Standard for Safety of Information Technology Equipment, UL 60950, Third Edition and UL 60950-1, First Edition. |

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| AB2.0 | SAMPLE REQUIREMENTS | | |
| | Test | Samples | Test Specifics |
| AB2.1 | Impact | 1 complete unit or 1 enclosure with supporting framework | Ball drop height = 1.3 m |
| AB2.2 | Drop | 1 complete unit | Unit drop height = 0.75 m or 1 m |
| AB2.3 | Stress Relief | 1 complete unit; or 1 enclosure with supporting framework | Oven temperature (°C) |
| AB2.4 | 3/4-Inch (19 mm) Flammability | 3 enclosures or 3 sample parts with representative wall thickness and ventilation openings. | Oven temperature (°C) |
| AB2.5 | 5-Inch (127 mm) Flammability | 3 enclosures or 3 sample parts with representative wall thickness and ventilation openings. | Oven temperature (°C) |
| AB2.6 | Needle-Flame | 3 enclosures or 3 sample parts with representative wall thickness and ventilation openings. | Oven temperature (°C) |

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| AB3.0 | PERFORMANCE TESTS | | |
| | Test | Method (sub-clause) | Basis for Acceptability |
| AB3.1 | Impact | 4.2.5 | 4.2.1 |
| AB3.2 | Drop | 4.2.6 | 4.2.1 |
| AB3.3 | Stress Relief | 4.2.7 | 4.2.1 |
| AB3.4 | 3/4-Inch (19 mm) Flammability | Annex A, A.2 | Annex A, A.2 |
| AB3.5 | 5-Inch (127 mm) Flammability | Annex A, A.1 | Annex A, A.1 |
| AB3.6 | Needle-Flame | Annex A, A.2.7 | Annex A, A.2.7 |

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PART AC

RESPONSIBILITIES AND REQUIREMENTS FOR MANUFACTURER

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| AC1.0 | MANUFACTURER'S RESPONSIBILITIES (INCLUDING BUT NOT LIMITED TO) |
| AC1.1 | Control of UL Mark - Restrict the use of markings that reference UL (either directly or by use of the name, an abbreviation of it, or the UL symbol or Classification Mark, or indirectly by means of agreed-upon markings that are understood to indicate acceptance by UL) to those products that are found by the manufacturer's own inspection to comply with the Procedure description. Such restrictions apply to packaging, brochures or other means of advertising that reference UL. Use of such markings is further limited by the agreements that have been executed by the subscriber and UL. |
| AC1.2 | Substitution of Non-Specified Plastic Materials - The product description may require the use of a Recognized Plastic with a minimum flammability rating. For these cases, before a plastic material may be used, current UL certification documentation must be checked to ensure that the plastic material has an acceptable flammability rating as specified at the thickness of use. Acceptable UL certification documentation includes: (a) the current edition of the Recognized Component Directory or Supplement; (b) the UL Online Certification Directory (http://www.ul.com/database). NOTE: The above does not apply to materials for which the specific manufacturer and type designation of the plastic is specified in the individual Test Reports (i.e. Enclosures). |
| AC1.3 | Substitution of Non-Specified PWB's - Before a printed wiring board may be used, current UL certification documentation must be checked to ensure that the maximum solder temperature and dwell time is as indicated and that the printed wiring board has minimum flammability and operating temperature ratings as specified in the individual Test Reports or other specified requirements. Acceptable UL certification documentation includes: (a) the current edition of the Recognized Component Directory or Supplement; (b) the UL Online Certification Directory (http://www.ul.com/database). |
| AC1.4 | Production-Line Tests - Conduct the tests detailed in Part AC2. |
| AC1.5 | Test Equipment Calibration – Determine that the test equipment is functioning properly and have it calibrated at least annually, or whenever it has been subject to abuse (such as being dropped or struck with an object) or its accuracy is questionable. Calibration may be by the manufacturer or an outside laboratory. In either case, it shall be by comparison with a Standard that is traceable to the applicable U.S. or the appropriate country's National Standard. Certification of calibration shall be maintained by the manufacturer until the next succeeding certification, and shall be readily available for review by the UL Representative. A letter from an outside laboratory or from an off-site manufacturer's calibration lab stating that their lab Standards are directly traceable to their country's National Standard and outlining their traceability path is considered adequate proof of traceability. A tag or marking on the equipment alone is not to be considered as equivalent to certification, but may be used to reference the certification report. |
| AC1.6 | Packaging - Ensure that there are no markings on the carton, package or contents that are, or could be construed to be, in conflict with or an extension of the uses covered in the instruction manual or Procedure. |

Generic Inspection Instructions

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| AC1.7 | <p>Power Supply Cords –</p> <p>A. Non-Detachable Power Supply Cord - A non-detachable power supply cord must be provided if described in a Test Report.</p> <p>B. Detachable Power Supply Cord - A detachable power supply cord described in a Test Report may or may not be shipped with the unit(s). When a cord is provided, it should either:</p> <ol style="list-style-type: none"> 1. Comply with the specific description in the Procedure, or, 2. Be provided for products for use outside of the USA and/or Canada. In this case, the manufacturer is to supply the UL Representative with information that allows the Representative to verify that the products are intended to be sold outside of the USA and/or Canada <u>and</u> that the cord is certified or similarly appropriate for use in the destination country. |
| AC1.8 | <p>User and Installation (Safety) Instructions provided with Bulk Shipped Equipment</p> |
| AC1.8.1 | <p>Bulk shipments may be provided with installation instruction sets totaling less than the total number of products in the shipment provided, or none at all provided that the following conditions are met.</p> <p>A. Bulk Shipment to Distribution Center - Bulk shipments from a manufacturing facility covered by the Procedure describing the product to an off-site distribution center need not have the user/installation instructions provided with the shipment if appropriate safety instructions will be added to individual products at the distribution center before final redistribution to the consumer. It is the dual responsibility of the manufacturer and distribution center to have a system in place to insure that all instructions required by the Procedure are provided with the product before final distribution to the consumer, but this system will not be subject to review by UL Follow-Up Service.</p> <p>Example: A product shipped in a bulk lot to an overseas distribution center where appropriate installation instructions in the local language are added before final redistribution.</p> <p>B. Bulk Shipment to Single Destination Which Controls Installation of Equipment and Manages Distribution of Instructions - Bulk shipments from a manufacturing facility covered by the Procedure to a single destination, where the redistribution and installation of the product, including distribution of instructions, is under the control of the customer, may include just one set of use/installation instructions provided that the user/installation instructions (original or copies) are made available to the users of the equipment, as needed.</p> <p>Alternatively, user/installation instructions need not be provided with such a shipment if appropriate safety instructions will be sent separately to single destination that controls installation of the equipment. For such cases, it is the responsibility of the manufacturer to have a system in place to insure that all instructions required by the Procedure are provided to the consumer, but this system will not be subject to UL Follow-Up Service.</p> <p>Example: A product shipped in bulk lots to a corporate customer where the equipment will be redistributed and installed locally by the corporate customer, and copies of user/installation instructions are not needed for all users of the equipment.</p> <p>C. Bulk Shipment to Single Destination Which Does Not Control Installation - Bulk shipments from a manufacturing facility covered by the Procedure describing the product to a single destination, where redistribution and installation of the product is not controlled, should be provided with individual sets of use/installation instructions for each product, unless subjected to special consideration.</p> <p>Example: A product shipped in bulk lots to a wholesale or retail outlet where the installation of the equipment will not be under the control of the wholesaler or retailer.</p> |

Generic Inspection Instructions

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| AC1.8.2 | Compliance with these guidelines will be determined through a review of the content of the equipment's installation instructions during the product investigation, and information supplied to the UL Inspection Center Representative during inspection visits. Other options that provide an equivalent level of safety or control may be considered based on the application. |
| AC1.9 | <p>Product Variations - In the event that a nonconformance to the Procedure is found, a Variation Notice (VN) will be issued. A VN is a means of communication with the applicant and manufacturer, and forms a record of those items where nonconformance to the Procedure has been found. The VN will indicate the specific model inspected and all other models with similar construction features, even when these models are not individually inspected.</p> <p>Unless directed otherwise by the UL Representative, when a product does not comply with the Procedure, the manufacturer shall either:</p> <p>A. Remove any markings referencing UL from the product, packaging, instructions, etc.; or B. Suitably modify all products that do not comply with the Procedure; or C. Hold shipment pending further instructions from UL LLC; or D. Act in accordance with special arrangements made with the Reviewing Office.</p> |
| AC1.9.1 | In the event of a disagreement between the manufacturer and the UL Representative as to whether or not a product is conforming, the manufacturer shall hold production at the factory pending resolution of the variations. The applicant or manufacturer has the right to appeal a decision with which he disagrees and should contact the appropriate UL Office to resolve any disagreements. Should UL LLC grant temporary authorization for the continued use of the UL Mark, such temporary authorization shall only be for the time needed to review and/or process the Procedure revisions, or as otherwise specified to cover a particular lot or production run. |

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| AC2.0 | REQUIREMENTS FOR PRODUCTION-LINE TESTS |
| AC2.1 | The following Production-Line Tests shall be conducted on the products covered by this Procedure. During production, the test equipment shall be checked for proper operation at least once during each shift. When the tests are not performed concurrently, it is preferred that the Electric Strength (Dielectric Voltage-Withstand) Test be performed after the Earthing (Grounding) Continuity Test. |
| AC2.2 | Production-Line Earthing (Grounding) Continuity Test |
| AC2.2.1 | General |
| AC2.2.1.1 | <p>For Listed products: Except as may be noted under "Exceptions" in each Test Report, the manufacturer shall subject 100 percent of production of all of the following products to a routine Production-Line Earthing Continuity Test as described in section AC2.2.3.</p> <p>A. Products that are provided with a non-detachable earthing type power supply cord, or B. Products that are provided with an earthed type inlet which accepts a detachable power supply cord, or C. Products that are provided with an earthing type terminal block or field wiring (pigtail leads) for permanent connection to the branch circuit.</p> |
| AC2.2.1.2 | For Component Recognized products: When specifically noted in each Test Report, the manufacturer shall subject 100 percent of the specified models to a routine Production-Line Earthing Continuity Test as described in section AC2.2.3. |
| AC2.2.2 | Test Equipment |
| AC2.2.2.1 | Any suitable continuity-indicating device (such as an ohmmeter, a battery and buzzer combination, or the like) may be used to determine compliance with the Earthing Continuity Test requirements. Commercial earth continuity testers that pass a current through the earthing path may also be used to determine compliance with the same requirements. |

Generic Inspection Instructions

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| AC2.2.3 | Method |
| AC2.2.3.1 | Continuity shall be determined between the earthing conductor of the attachment plug cap, and/or the designated main protective earthing point, and accessible dead-metal parts of the product, using the test equipment indicated above. |
| AC2.2.3.2 | A single test is sufficient if the accessible metal selected is conductively connected by design to all other accessible metal. |
| AC2.2.4 | Basis for Acceptability |
| AC2.2.4.1 | There shall be earthing continuity between the parts specified. |
| AC2.2.5 | In Cases of Non-conformance |
| AC2.2.5.1 | Any unit that does not conform shall be segregated from conforming units until repaired or otherwise brought into compliance. Records of non-conforming test results shall be retained for six (6) months and shall be readily available for review by the UL Representative. The records shall include the model or catalog designation of the product, the date of production of the unit, the date the test was performed, test results and action taken on rejection. |
| AC2.3 | Production-Line Electric Strength (Dielectric Voltage-Withstand) Test |
| AC2.3.1 | General |
| AC2.3.1.1 | For Listed products: Except as may be noted under "Exceptions" in each Test Report, the manufacturer shall subject 100 percent of production of all products to a routine Production-Line Electric Strength Test as described in section AC2.3.3. |
| AC2.3.1.2 | For Component Recognized products: When specifically noted in each Test Report, the manufacturer shall subject 100 percent of the specified models to a routine Production-Line Electric Strength Test as described in section AC2.3.3. |
| AC2.3.2 | Test Equipment |
| AC2.3.2.1 | The test equipment shall include a means of indicating the test potential, an audible or visual indicator of electrical breakdown, and either a manually operated reset device to restore the equipment after electrical breakdown or an automatic feature that rejects any unacceptable unit. If an ac test potential is applied, the test equipment shall also include a transformer having an essentially sinusoidal output. |
| AC2.3.2.2 | If the output of the test-equipment transformer is less than 500 volt-amperes, the equipment shall include a voltmeter in the output circuit to indicate the test potential directly. |
| AC2.3.2.3 | If the output of the test-equipment transformer is 500 volt-amperes or more, the test potential may be indicated (1) by a voltmeter in the primary circuit or in a tertiary-winding circuit, (2) by a selector switch marked to indicate the test potential, or (3), in the case of equipment having a single test-potential output, by a marking in a readily visible location to indicate the test potential. When marking is used without an indicating voltmeter, the equipment shall include a positive means, such as an indicator lamp, to indicate that the manually operated reset switch has been reset following a dielectric breakdown. |
| AC2.3.2.4 | Test equipment other than that described above may be used when it can be shown that UL has previously confirmed in writing that the equipment complies with the above requirements and is deemed suitable for use for this test. |

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| AC2.3.3 | Method |
| AC2.3.3.1 | <p>Each product shall withstand without electrical breakdown, as a routine production-line test, the application of an ac potential at a frequency within the range of 40-70 Hz or a dc potential between (a) the primary wiring, including connected components, and (b) accessible dead metal parts that are likely to become energized.</p> <p>For purposes of these instructions, primary wiring encompasses input wiring for connection to power systems associated with both ac mains and dc mains that exceeds 60 V dc.</p> <p>Note: See the Specific Inspection Criteria in each Test Report for details or special instructions for test locations, such as testing of enamel coating on signal transformers associated with TNV circuits per 2.3.2 and 6.2.1 of UL 60950-1.</p> |
| AC2.3.3.2 | When there are capacitors across the insulation under test, it is recommended that dc test voltages be used. |
| AC2.3.3.3 | The production-line test potential for paragraph AC2.3.3.1 shall be in accordance with Table AC1 for protectively earthed (Class I) products and Table AC2 for double insulated (Class II) products, as applicable. The full test potential is to be applied for 1 second. The manufacturer's test conditions may be higher than those shown in Tables AC1 and AC2 when necessary to comply with other international product safety certifications. |
| AC2.3.3.4 | The product may be in a heated or unheated condition for the test. |
| AC2.3.3.5 | <p>The test shall be conducted when the product is complete (fully assembled), and it is not intended that the product be unwired, modified, or disassembled for the test, unless otherwise permitted below:</p> <p>A. A part, such as a snap cover or a friction-fit knob, that would interfere with conducting the test need not be in place.</p> <p>B. The test may be conducted before final assembly if the test parameters represent that for the completed product.</p> <p>C. The test need not be performed using the power supply cord provided with the product. However, if the manufacturer's test method employs a test power supply cord, then the continuity of the test power supply cord conductive connections shall be checked once daily.</p> |
| AC2.3.3.6 | For the test, either a sufficient number of control devices are to be closed, or separate applications of the test potential are to be made, so that all parts of the primary circuit are tested. |
| AC2.3.3.7 | <p>During the test, the primary switch is to be in the on position, both sides of the primary circuit of the product are to be connected together and to one terminal of the test equipment, and the second test-equipment terminal is to be connected to accessible dead metal, except as permitted below:</p> <p>A. A product (resistive, high-impedance winding, or the like) having circuitry not subject to excessive secondary voltage buildup in case of electrical breakdown during the test may be tested (1) with a single-pole primary switch, if used, in the off position, or (2) with only one side of the primary circuit connected to the test equipment when the primary switch is in the on position or when a primary switch is not used.</p> <p>B. The primary switch is not required to be in the on position if the testing means applies full test potential between the primary wiring and dead metal parts with the switch not in the on position.</p> |
| AC2.3.3.8 | When authorized by the "Exceptions" included in each Test Report, solid-state components that might be damaged by a secondary effect (induced voltage surge, excessive heating, and the like) of the test may be short-circuited by means of a temporary electrical jumper or the test may be conducted without the component electrically connected, providing the wiring and terminal spacings are maintained. Transient voltage suppression devices other than capacitors connected from primary wiring to dead metal may also be disconnected during the test. |

Generic Inspection Instructions

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| AC2.3.4 | Basis for Acceptability |
| AC2.3.4.1 | All products shall withstand the applied potential without an indication of electrical breakdown. |
| AC2.3.5 | In Cases of Non-conformance |
| AC2.3.5.1 | Any unit that does not conform when tested at the values as specified in Table AC1 or AC2 shall be segregated from conforming units until repaired or otherwise brought into compliance. Records of non-conforming test results shall be retained for six (6) months and shall be readily available for review by the UL Representative. The records shall include the model or catalog designation of the product, the date of production of the unit, the date the test was performed, test results and action taken on rejection. |

TABLE AC1
ELECTRIC STRENGTH TEST CONDITIONS
FOR CLASS I (PROTECTIVELY EARTHED) EQUIPMENT

| Appliance Voltage Rating | Test Potential (V rms) | Test Potential (V dc) | Time (seconds) |
|---|---------------------------|--------------------------|-------------------|
| Rated less than or equal to 130 V rms (184 V dc) | 1000 | 1400 | 1 |
| Rated more than 130 V rms (184 V dc) and less than or equal to 600 V rms (849 V dc) | 1500 | 2100 | 1 |

For products with special constructions and test conditions see "Exceptions" in each Test Report.

TABLE AC2
ELECTRIC STRENGTH TEST CONDITIONS
FOR CLASS II (DOUBLE INSULATED) EQUIPMENT

| Appliance Voltage Rating | Test Potential (V rms) | Test Potential (V dc) | Time (seconds) |
|---|---------------------------|--------------------------|-------------------|
| Rated less than or equal to 130 V rms (184 V dc) | 2000 | 2800 | 1 |
| Rated more than 130 V rms (184 V dc) and less than or equal to 600 V rms (849 V dc) | 3000 | 4200 | 1 |

For products with special constructions and test conditions see "Exceptions" in each Test Report.

Generic Inspection Instructions

PART AD

GENERAL TERMINOLOGY

| AD1.0 | ABBREVIATIONS / DEFINITIONS | |
|--------|------------------------------------|--|
| AD1.1 | Bounding Surface | The outer surface of the electrical enclosure, considered as though metal foil was pressed into contact with accessible surfaces of insulating material |
| AD1.2 | Clearance | Shortest distance between two conductive parts or between a conductive part and the BOUNDING SURFACE of the equipment, measured through air |
| AD1.3 | Creepage Distance | Shortest distance between two conductive parts, or between a conductive part and the BOUNDING SURFACE of the equipment, measured along the surface of the insulation |
| AD1.4 | Extra Low Voltage (ELV) | A secondary circuit with voltages between any two conductors of the circuit, and between any one such conductor and earth, not exceeding 42.4 V peak, or 60 V dc, under normal operating conditions, which is separated from a HAZARDOUS VOLTAGE CIRCUIT by basic insulation, and which neither meets all of the requirements for an SELV circuit nor meets all of the requirements for a LIMITED CURRENT CIRCUIT. |
| AD1.5 | Hazardous Energy Level (HAZ/EL) | An available power level of 240 VA or more having a duration of 60 s or more, or a stored energy level of 20 J or more, at a potential of 2 V or more. |
| AD1.6 | Hazardous Voltage (HAZ/V) | A voltage exceeding 42.4 V peak, or 60 V dc, existing in a circuit that does not meet the requirements for either a LIMITED CURRENT CIRCUIT or a TNV CIRCUIT. |
| AD1.7 | Limited Current Circuit (LCC) | A circuit which is so designed and protected, that, under both normal operating conditions and single fault conditions, the current which can be drawn is not hazardous |
| AD1.8 | Limited Power Source (LPS) | A circuit which includes a transformer or battery, and which is either inherently limited to power levels considered not a risk of fire, or is not inherently limited and requires an over-current protective device to limit the source to power levels considered not a risk of fire |
| AD1.9 | Primary (PRI) | A circuit that is directly connected to the ac mains supply. It includes, for example, the means for connection to the ac mains supply, the primary windings of transformers, motors and other loading devices. |
| AD1.10 | Safety Extra Low Voltage (SELV) | A SECONDARY CIRCUIT which is so designated and protected that under normal operating conditions and single fault conditions, its' voltages do not exceed a safe value, generally 42.2 V peak or 60 V dc. |
| AD1.11 | Secondary (SEC) | A circuit that has no direct connection to a PRIMARY CIRCUIT and derives its power from a transformer, converter or equivalent isolation device, or from a battery. |
| AD1.12 | TNV Circuit | A telecommunications network voltage circuit, which is in the equipment and to which the accessible area of contact is limited, and that is so designed and protected that, under normal operating conditions and single fault conditions, the voltages do not exceed specified limit values based upon the type of TNV circuit. |

Generic Inspection Instructions

PART AE

GENERAL PRODUCT CONSTRUCTION REQUIREMENTS

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| AE1.0 | CONSTRUCTION DETAILS |
| AE1.1 | Unless otherwise described or supplemented in individual Test Reports, the requirements specified in Table AE1 apply to all equipment included in this Procedure |
| AE1.2 | All clause references are from the Standard for Safety of Information Technology Equipment, UL 60950-1, First and Second Edition. |

TABLE AE1
CONSTRUCTION DETAILS

| Clause | Clause Title | Clause Specifics |
|--------|--------------|------------------|
| | | None specified |

Generic Inspection Instructions

PART AF

UL CERTIFICATION MARK

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|------------------------------|--|
| <i>Product Category:</i> | Power Supplies, Information Technology Equipment Including Electrical Business Equipment |
| <i>Product Category CCN:</i> | QQGQ |

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| AF1.1 | The Test Report covering each product must be consulted to determine which Listing Marks are authorized for use in conjunction with that product. |
| AF1.1.1 | The following Listing Mark is authorized for use on products which are Listed only to the requirements for the United States:  |
| AF1.1.2 | Either of the following Listing Marks is authorized for use on products that are Listed to the requirements of both the United States and Canada:   |
| AF1.2 | The Listing Mark consists of five elements that are placed in close proximity to each other and shall appear on Listed products only. |
| AF1.2.1 | Element 1 - UL Symbol. There is no required minimum height for the UL Symbol, as long as it is legible. The minimum height of the registered trademark symbol ® shall be 3/64 of an inch. When the overall diameter of the UL Symbol is less than 3/8 of an inch, the trademark symbol may be omitted if it is not legible to the naked eye. Information on downloading electronic versions or receiving camera-ready artwork of the UL Symbols may be obtained at www.ul.com |
| AF1.2.2 | Element 2 - The word "LISTED" |
| AF1.2.3 | Element 3 - A product identity |
| AF1.2.3.1 | The product identity is: "INFORMATION TECHNOLOGY EQUIPMENT POWER SUPPLY", "I.T.E. POWER SUPPLY", or "QQGQ POWER SUPPLY". |
| AF1.2.3.2 | The product identity may be omitted if the Listing Mark is directly and permanently applied to the product by stamping, molding, ink-stamping, silk screening or similar process. The product identity may appear elsewhere on the product if the other three elements are part of the nameplate that includes the rating or the catalog or model designation. |
| AF1.2.3.3 | Where products are so indicated in individual Test Reports, the product identity for a Listed Accessory shall include the word "ACCESSORY". |
| AF1.2.3.4 | Where Rebuilt products are authorized in individual Test Reports, the product identity for such products shall be preceded by "REBUILT", "REMANUFACTURED", or "RECONDITIONED", as appropriate. |
| AF1.2.4 | Element 4 – A control number represented above by XXXX is to be replaced with the Listee's file number. |
| AF1.3 | Element 5 – Products that are Complementary Listed to other categories shall include the statement "ALSO LISTED AS (PRODUCT IDENTITY)", where the product identity is that of the complementary category as indicated in individual Test Reports. |
| AF1.4 | A separable Listing Mark (not part of a nameplate and in the form of decals, stickers or labels) must include the four elements. |
| AF1.5 | The manufacturer may reproduce the Listing Mark or obtain it from a UL authorized supplier. |

Generic Inspection Instructions

PART AF

UL CERTIFICATION MARK

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|------------------------------|--|
| <i>Product Category:</i> | Power Supplies, Information Technology Equipment Including Electrical Business Equipment |
| <i>Product Category CCN:</i> | QQGQ7 |

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| AF1.1 | The Test Report covering each product must be consulted to determine which Listing Marks are authorized for use in conjunction with that product. |
| AF1.1.1 | The following Listing Mark is authorized for use on products that are Listed only to the requirements for Canada:  |
| AF1.1.2 | Either of the following Listing Marks is authorized for use on products that are Listed to the requirements of both the United States and Canada:     |
| AF1.2 | The Listing Mark consists of five elements that are placed in close proximity to each other and shall appear on Listed products only. |
| AF1.2.1 | Element 1 - UL Symbol. There is no required minimum height for the UL Symbol, as long as it is legible. The minimum height of the registered trademark symbol ® shall be 3/64 of an inch. When the overall diameter of the UL Symbol is less than 3/8 of an inch, the trademark symbol may be omitted if it is not legible to the naked eye. Information on downloading electronic versions or receiving camera-ready artwork of the UL Symbols may be obtained at www.ul.com |
| AF1.2.2 | Element 2 - The word "LISTED" |
| AF1.2.3 | Element 3 - A product identity |
| AF1.2.3.1 | The product identity is: "INFORMATION TECHNOLOGY EQUIPMENT POWER SUPPLY", "I.T.E. POWER SUPPLY", or "QQGQ POWER SUPPLY". |
| AF1.2.3.2 | The product identity may be omitted if the Listing Mark is directly and permanently applied to the product by stamping, molding, ink-stamping, silk screening or similar process. The product identity may appear elsewhere on the product if the other three elements are part of the nameplate that includes the rating or the catalog or model designation. |
| AF1.2.3.3 | Where products are so indicated in individual Test Reports, the product identity for a Listed Accessory shall include the word "ACCESSORY". |
| AF1.2.3.4 | Where Rebuilt products are authorized in individual Test Reports, the product identity for such products shall be preceded by "REBUILT", "REMANUFACTURED", or "RECONDITIONED", as appropriate. |
| AF1.2.4 | Element 4 – A control number represented above by XXXX is to be replaced with the Listee’s file number. |
| AF1.3 | Element 5 – Products that are Complementary Listed to other categories shall include the statement "ALSO LISTED AS (PRODUCT IDENTITY)", where the product identity is that of the complementary category as indicated in individual Test Reports. |
| AF1.4 | A separable Listing Mark (not part of a nameplate and in the form of decals, stickers or labels) must include the four elements. |
| AF1.5 | The manufacturer may reproduce the Listing Mark or obtain it from a UL authorized supplier. |

UL TEST REPORT AND PROCEDURE

| | |
|------------------------------------|--|
| Standard: | UL 60950-1, 2nd Edition, 2014-10-14 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements) |
| Certification Type: | Listing |
| CCN: | QQGQ, QQGQ7 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment) |
| Product: | ITE POWER SUPPLY |
| Model: | GT-46600-WWVV-X.X-TZ WW is the standard output wattage, with a maximum value of "65", VV is the standard rated output voltage designation, with a value of "12" "15" and "24"; -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. Z can be 3 or 3A, 3 means C14 inlet type, 3A means C6 inlet type |
| Rating: | I/P: 100-240Vac, 50-60Hz, 1.5A (For all models) O/P: 1) 12Vdc 5.0 A (For Models GT-46600-6012-TZ) 2) 15Vdc 4.0 A (For Models GT-46600-6015-TZ) 3) 19Vdc: 3.42 A (For Models GT-46600-6524-5.0-TZ) 4) 24Vdc: 2.7 A (For Models GT-46600-6524-TZ) (See Miscellaneous 7-03 for Models/Ratings Differences List) |
| Applicant Name and Address: | GLOBTEK (HONG KONG) LTD UNIT 1402, BENSON TOWER 74 HUNG TO RD KWUN TONG 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.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Issue Date: 2015-08-11

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Report Reference #

E341351-A72-UL

Prepared by: Vivian Chen

Reviewed by: Wei Chen

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.
 - iii. Part AF 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 for Class I, intended for use with Information Technology Equipment (ITE), there electronic components mounted on PWB, and housed in a thermoplastic enclosure by ultrasonic welding.

Model Differences

(See Miscellaneous 7-03 fo4 Models/Ratings Differences List)

Technical Considerations

- Equipment mobility : transportable, Movable
- Connection to the mains : pluggable A
- Operating condition : continuous
- Access location : operator accessible
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10%, -10%
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class I (earthed)
- Considered current rating of protective device as part of the building installation (A) : 29 A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : 2000 or less
- Altitude of test laboratory (m) : less than 2000 meters
- Mass of equipment (kg) : 0.281
- The product was submitted and evaluated for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of: 40 degree C
- The means of connection to the mains supply is: Pluggable A
- The product is intended for use on the following power systems: TN

- The equipment disconnect device is considered to be: Appliance inlet
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: CY1 and CY2 secondary part
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): Output connector
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual

Additional Information

Additional Standards

The product fulfills the requirements of: N/A

Markings and instructions

| Clause Title | Marking or Instruction Details |
|---------------------------------------|--|
| Power rating - Ratings | Ratings (voltage, frequency/dc, current) |
| Power rating - Company identification | Listee's or Recognized company's name, Trade Name, Trademark or File Number |
| Power rating - Model | Model Number |
| Fuses - Rating | Rated current and voltage and type located on or adjacent to fuse or fuseholder. |
| LPS Marking (Optional) | Marked "LPS" or "Limited Power Source". |

Special Instructions to UL Representative

Inspect the transformer(s) listed in Production-Line Testing Requirements per AA1.1- (C).
 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.

| Production-Line Testing Requirements | | | | | | |
|---|----------------|-----------------|----------------------|-----------|----------------|--------------|
| <u>Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.</u> | | | | | | |
| Model | Component | Removable Parts | Test probe location | V rms | V dc | Test Time, s |
| All Models | Transformer T1 | N/A | Primary to Secondary | 300 0 | -- | 1 |
| All Models | Unit | N/A | Primary to Secondary | -- | 4242 | 1 |
| <u>Earthing Continuity Test Exemptions - This test is not required for the following models:</u> | | | | | | |
| All Models | | | | | | |
| <u>Electric Strength Test Exemptions - This test is not required for the following models:</u> | | | | | | |
| N/A | | | | | | |
| <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> | | | | | | |
| N/A | | | | | | |
| <u>Sample and Test Specifics for Follow-Up Tests at UL</u> | | | | | | |
| Model | Component | Material | Test | Sample(s) | Test Specifics | |
| N/A | | | | | | |

| 1.5.1 | 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 | SABIC INNOVATIVE PLASTICS | SE1X(GG)(f1) | Two pieces construction, secured together by ultrasonic welding, rated V-1 or better, 105degree C min. Minimum 2.0 mm thickness. See Enclosure/Diagram ID 4-01 for dimensions | QMFZ2 | UL | |
| 02. Appliance Inlet (for T3 model) | TECX-UNIONS TECHNOLOGY CORP | TU-301-SP | Rated 250 V, 15 A, 105 degree C min. (C14 type) | AXUT2 | UL | |
| 02a. Appliance Inlet (alternate) (for T3 model) | SUN FAIR ELECTRIC WIRE & CABLE (HK) CO LTD | S-03 | Rated 250 V, 10 A, 75 degree C min. (C14 type) | AXUT2 | UL | |
| 02b. Appliance Inlet (alternate) (for T3 model) | ZHEJIANG LECI ELECTRONICS CO LTD | DB-14 | Rated 250 V, 15 A, 75 degree C min. (C14 type) | AXUT2 | UL | |
| 02c. Appliance Inlet (alternate) (for T3 model) | ZHE JIANG BEI ER JIA ELECTRONIC CO LTD | ST-A01-003J | Rated 250 V, 10 A, 75 degree C min. (C14 type) | AXUT2 | UL | |
| 02-1. Appliance Inlet (for T3A model) | TECX-UNIONS TECHNOLOGY CORP | TU-333 | Rated 250 V, 2.5 A, 105 degree C min. (C6 type) | AXUT2 | UL | |
| 02-1a. Appliance Inlet (for T3A model) | SUN FAIR ELECTRIC WIRE & CABLE (HK) CO LTD | S-02 | Rated 250 V, 2.5 A, 75 degree C min. (C6 type) | AXUT2 | UL | |
| 02-1b. Appliance Inlet (for T3A model) | ZHEJIANG LECI ELECTRONICS CO LTD | DB-6 | Rated 250 V, 2.5 A, 75 degree C min. (C6 type) | AXUT2 | UL | |
| 02-1c. Appliance Inlet (alternate) (for T3A mode) | 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) | DAS & SONS | 385T series | Rated T3.15A, 250Vac. | JDYX2 | UL | |

| | | | | | | |
|--|--|---------|---|-------|----|--|
| (Alternate) | INTERNATIONAL LTD | | | | | |
| 03b. Fuse (F1) (Alternate) | CONQUER ELECTRONICS CO LTD | PTU | Rated T3.15A, 250Vac. | JDYX2 | UL | |
| 03c. Fuse (F1) (Alternate) | DONGGUAN BETTER ELECTRONIC TECHNOLOGY CO LTD | 932 | 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. (Compliance with IEC 60384-14) | FOWX2 | UL | |
| 04a. X-Capacitor (CX1) (optional) (Alternate) | Tenta Electric Industrial Co Ltd | MEX | Rated max 0.33uF, min 250 V, X1 or X2 type, 100 degree C. (Compliance with IEC 60384-14) | FOWX2 | UL | |
| 04b. X-Capacitor (CX1) (optional) (Alternate) | Ultra Tech Xiphi Enterprise Co Ltd | HQX | Rated max 0.33 uF, min 250 V, X1 or X2 type, 100 degree C. (Compliance with IEC 60384-14) | FOWX2 | UL | |
| 04c. X-Capacitor (CX1) (optional) (Alternate) | CARLI ELECTRONICS CO LTD | MPX | Rated max 0.33uF, min 250 V, X1 or X2 type, 100 degree C. (Compliance with IEC 60384-14) | FOWX2 | UL | |
| 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. (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. (Compliance with IEC 60384-14) | FOWX2 | UL | |
| 05. Bleeder Resistors (RX1, RX2) | -- | -- | 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 GT-46600-6012-TZ, GT-46600-6015-TZ, GT-46600-6524-5.0-TZ) | Various | Various | Rated 10-15 A, minimum 600 V. | -- | -- | |
| 08a. Transistor (Q1) (for GT-46600-6524-TZ) | Various | Various | Rated 10-15 A, minimum 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-EPC 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, YOE | 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 | |
| 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-817XXXXX, BPC-817MXXXXX, BPC-817SXXXXX, 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 | |
| 11. Line filter (LF1) (Optional) | Various | NF00025 | Open type construction. Rated 105 degree C. Enclosure/Diagram ID 4-06 for dimensions | -- | -- | |
| 11a Core | Various | Various | Ferrite, toroidal, measured overall approx. 8mm OD by 4 mm ID by 4 mm wide. | -- | -- | |
| 11b Coil | Various | Various | Rated minimum 105 degree C. | OBMW2 | UL | |
| 12. Line filter (LF2) (Optional) | Various | NF00123 | Open type construction. Rated 105 degree C. Enclosure/Diagram ID 4-07 for dimensions | -- | -- | |
| 12a Core | Various | Various | Ferrite, toroidal, measured overall approx. 16mm OD by 12 mm ID by 8 mm wide. | -- | -- | |
| 12b Coil | Various | Various | Rated minimum 105 degree C. | OBMW2 | UL | |
| 13. Varistor (MOV1) (optional) | CENTRA SCIENCE CORP | CNR 14V511K | Rated minimum 300 Vac, minimum 385 Vdc. | VZCA2 | UL, C-UL | |
| 13a. Varistor (MOV1) (optional) (Alternate) | CENTRA SCIENCE CORP | CNR 10V471K, CNR 14D471K | Rated minimum 300 Vac, minimum 385 Vdc. | VZCA2 | UL, C-UL | |

| | | | | | | |
|---|--|---|---|-------|----------|--|
| 13b. Varistor (MOV1) (optional) (Alternate) | CENTRA SCIENCE CORP | CNR 14D511K | Rated minimum 300 Vac, minimum 385 Vdc. | VZCA2 | UL, C-UL | |
| 13c. Varistor (MOV1) (optional) (Alternate) | JOYIN CO LTD | 10N511K, 10N471K | Rated minimum 300 Vac, minimum 385 Vdc. | VZCA2 | UL, C-UL | |
| 13d. Varistor (MOV1) (optional) (Alternate) | JOYIN CO LTD | 14N471K, 14N511K, 14S511K | Rated minimum 300 Vac, minimum 385 Vdc. | VZCA2 | UL, C-UL | |
| 13e. Varistor (MOV1) (optional) (Alternate) | THINKING ELECTRONIC INDUSTRIAL CO LTD | TVR 10471K, TVR 10511K, TVR 10471-V | Rated minimum 300 Vac, minimum 385 Vdc. | VZCA2 | UL, C-UL | |
| 13f. Varistor (MOV1) (optional) (Alternate) | THINKING ELECTRONIC INDUSTRIAL CO LTD | TVR 14471K, TVR 14511K | Rated minimum 300 Vac, minimum 385 Vdc. | VZCA2 | UL, C-UL | |
| 13g. Varistor (MOV1) (optional) (Alternate) | CERAMATE TECHNICAL CO LTD | GNR 14D471K, GNR 14D511K | Rated minimum 300 Vac, minimum 385 Vdc. | VZCA2 | UL, C-UL | |
| 13h. Varistor (MOV1) (optional) (Alternate) | CERAMATE TECHNICAL CO LTD | GNR10D471K | Rated minimum 300 Vac, minimum 385 Vdc. | | | |
| 13i. Varistor (MOV1) (optional) (Alternate) | SUCCESS ELECTRONICS CO LTD | SVR10D471K, SVR10D511K | Rated minimum 300 Vac, minimum 385 Vdc. | VZCA2 | UL, C-UL | |
| 13j. Varistor (MOV1) (optional) (Alternate) | SUCCESS ELECTRONICS CO LTD | SVR14D471K, SVR14D511K | Rated minimum 300 Vac, minimum 385 Vdc. | VZCA2 | UL, C-UL | |
| 14. Transformer (T1) (for GT-46600-6012-TZ, GT- 46600-6015-TZ) | | XF00927 | Class B, See Enclosure / Diagram ID 4-08 for construction details. | -- | -- | |
| 14a. Transformer (T1) (for GT-46600-6524-5.0- TZ, GT-46600-6524-TZ) | | XF00947 | Class B, See Enclosure / Diagram ID 4-09 for construction details. | -- | -- | |
| 14-01. Insulation system for Transformer (T1) | | 130-1 | Insulation system Class B (130 degree C, adapted form GREAT LEOFLON INDUSTRIAL CO 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 Plastics Co., Ltd. | T375J | V-0, 150degree C, Phenolic, thickness 0.8mm minimum | QMFZ2 | UL |
| 14-04a. Bobbin (Alternate) | SUMITOMO BAKELITE CO LTD | PM-9820 | V-0, 150degree C, Phenolic, thickness 0.71mm minimum | QMFZ2 | UL |
| 14-05. Tubing/Sleeving | Great Holding Industrial Co. Ltd. | TFL | Rated 200 degree C, VW-1, 600V max. | YDPU2 | UL |
| 14-06. Triple Insulated Wire | Great Leoflon Industrial Co. Ltd. | TRW(B) | 130 degree C | OBJT2 | UL |
| 14-07. Varnish (Alternate) | Elantas Electrical Insulation Elantas Pdg Inc | V1630FS | Rated minimum 130 degree C. | OBOR2 | UL |
| 14-08. Insulation Tape | 3M Company | 1350F-1 | 130 degree C. | OANZ2 | UL |
| 14-08a. Insulation Tape (Alternate) | JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD | CT | 130 degree C. | OANZ2 | UL |
| 15. Internal Glue Materials | -- | -- | Rated V-2 minimum. | QMFZ2 | UL |
| 16. Internal Plastic Part Materials | -- | -- | Rated minimum V-2. | QMFZ2 | UL |
| 17. Strain Relief Of Output Cord | Various | Various | Minimum 300 V, 80 degree C, maximum 3.05 m, marked VW-1 or FT-1. Suitable for external use. Refer to Enclosure/Diagram ID 4-02 for strain relief dimension details. | QMFZ2 | UL |
| 18. PWB | Various | Various | V-0 or better, minimum 105degree C. | ZPMV2 | -- |
| 19. Label | Various | Various | Minimum 70 degree C. if maximum surface temperature not specified. | PGDQ2, PGJI2 | UL |
| 20. Heat Sink (HS1) (Consideration as Primary) | Various | Various | Aluminum, minimum 2.0 mm thick. See Enclosure/Diagram ID 4-04 for dimensions | -- | -- |

| | | | | | | |
|---|---------|---------|---|-------------|----|--|
| 21. Heat Sink (HS2) (Consideration as primary) | Various | Various | Aluminum, minimum 2.0 mm thick. See Enclosure/Diagram ID 4-05 for dimensions. | -- | -- | |
| 22. LPS resistor (R10) | -- | -- | 0.36 ohm, 2W. | -- | -- | |
| 23. Mylar sheet (between PCB trace and EMI shield) | Various | Various | Min. V-2, min. 105°C min. 0.47mm thickness | QMFZ2 | UL | |
| Bonding Conductor | Various | Various | Green or green/yellow wire, minimum No. 18 AWG. | AVLV, AVLV2 | UL | |