

## UL TEST REPORT AND PROCEDURE

<b>Standard:</b>	UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1-14, 2nd Ed-(Audio/video, information and communication technology equipment Part 1: Safety requirements)
<b>Certification Type:</b>	Component Recognition
<b>CCN:</b>	QQJQ2, QQJQ8 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)
<b>Complementary CCN:</b>	N/A
<b>Product:</b>	POWER SUPPLY
<b>Model:</b>	GU300SXXKZZ Where XX represents the output voltage which may be any number from from 12 to 56. ZZ can be any number between 00-99, or any letter from AA to ZZ, or blank, only for market purpose, not affect safety performance
<b>Rating:</b>	<p>Input: 100-240 Vac, 50-60 Hz, 3.5A</p> <p>Output: Model GU300S12K: For convection: max. output power: 180W and total max. 12W for V2 and V3 V1: 12Vdc/14.0A Max. V2: 5Vdc/2.0A Max. V3: 12Vdc/0.5A Max.</p> <p>For conduction: max. output power: 246W and total max. 12W for V2 and V3 V1: 12Vdc/19.5A Max. V2: 5Vdc/2.0A Max. V3: 12Vdc/0.5A Max.</p> <p>For 300LFM: max. output power: 278.4W and total max. 12W for V2 and V3 V1: 12Vdc/22.2A Max. V2: 5Vdc/2.0A Max. V3: 12Vdc/0.5A Max.</p> <p>Model GU300S15K: For convection: max. output power: 180W and total max. 12W for V2 and V3 V1: 15Vdc/11.2A Max. V2: 5Vdc/2.0A Max. V3: 12Vdc/0.5A Max.</p>

For conduction: max. output power: 246W and total max. 12W for V2 and V3

V1: 15Vdc/15.6A Max.

V2: 5Vdc/2.0A Max.

V3: 12Vdc/0.5A Max.

For 300LFM: max. output power: 279W and total max. 12W for V2 and V3

V1: 15Vdc/17.8A Max.

V2: 5Vdc/2.0A Max.

V3: 12Vdc/0.5A Max.

Model GU300S24K:

For convection: max. output power: 196.8W and total max. 12W for V2 and V3

V1: 24Vdc/7.7A Max.

V2: 5Vdc/2.0A Max.

V3: 12Vdc/0.5A Max.

For conduction: max. output power: 266.4W and total max. 12W for V2 and V3

V1: 24Vdc/10.6A Max.

V2: 5Vdc/2.0A Max.

V3: 12Vdc/0.5A Max.

For 300LFM: max. output power: 297.6W and total max. 12W for V2 and V3

V1: 24Vdc/11.9A Max.

V2: 5Vdc/2.0A Max.

V3: 12Vdc/0.5A Max.

Model GU300S48K:

For convection: max. output power: 199.2W and total max. 12W for V2 and V3

V1: 48Vdc/3.9A Max.

V2: 5Vdc/2.0A Max.

V3: 12Vdc/0.5A Max.

For conduction: max. output power: 266.4W and total max. 12W for V2 and V3

V1: 48Vdc/5.3A Max.

V2: 5Vdc/2.0A Max.

V3: 12Vdc/0.5A Max.

For 300LFM: max. output power: 295.2W and total max. 12W for V2 and V3

V1: 48Vdc/5.9A Max.

V2: 5Vdc/2.0A Max.

V3: 12Vdc/0.5A Max.

Model GU300S56K:

	<p>For convection: max. output power: 196.8W and total max. 12W for V2 and V3 V1: 56Vdc/3.3A Max. V2: 5Vdc/2.0A Max. V3: 12Vdc/0.5A Max.</p> <p>For conduction: max. output power: 264W and total max. 12W for V2 and V3 V1: 56Vdc/4.5A Max. V2: 5Vdc/2.0A Max. V3: 12Vdc/0.5A Max.</p> <p>For 300LFM: max. output power: 297.6W and total max. 12W for V2 and V3 V1: 56Vdc/5.1A Max. V2: 5Vdc/2.0A Max. V3: 12Vdc/0.5A Max.</p>
<b>Applicant Name and Address:</b>	<p>SL POWER ELECTRONICS CORP BLDG A 6050 KING DR VENTURA CA 93003 UNITED STATES</p>

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.

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

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Handler

Reviewed By: Marshal Zhang / Reviewer

### 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

POWER SUPPLY utilizing a transformer for reinforced isolation between input and output, intended for building in. A suitable input/output connector is provided for internal connection in the end use product.

### Model Differences

Model GU300S12K, GU300S24K, GU300S48K are similar to each other except transformer different secondary coil turns, some secondary components and the output voltage and current, see enclosure 7-03 for details

Model GU300S15K is similar to GU300S12K except T100 different primary coil turns, transformer different secondary coil turns, some secondary components and the output voltage and current, see enclosure 7-03 for details

Model GU300S56K is similar to GU300S12K except T100 different primary coil turns, transformer different secondary coil turns, some secondary components and the output voltage and current, see enclosure 7-03 for details

### Test Item Particulars

Classification of use by	Ordinary person
Supply Connection	AC Mains
Supply % Tolerance	+10%/-10%
Supply Connection – Type	mating connector
Considered current rating of protective device as part of building or equipment installation	20 A; building;
Equipment mobility	for building-in
Over voltage category (OVC)	OVC II
Class of equipment	Class I
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient (°C)	Max. 50
IP protection class	IPX0

Power Systems	TN
Altitude during operation (m)	5000 m
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	0.378 max

**Technical Considerations**

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : Max. 50 degree C
- The product is intended for use on the following power systems : TN
- Considered current rating of protective device as part of the building installation (A) : 20
- Mains supply tolerance (%) or absolute mains supply values : +10%/-10%
- The equipment disconnect device is considered to be : evaluated in end use product

**Engineering Conditions of Acceptability**

For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. When installed in an end-product, consideration must be given to the following:

- The following product-line tests are conducted for this product : Electric Strength
- The end-product Electric Strength Test is to be based upon a maximum working voltage of : Primary-Earthed Dead Metal: 364 Vrms, 644 Vpk, Primary-Secondary: 364 Vrms, 644 Vpk,
- The following output circuits are at ES1 energy levels : All output ports of GU300S12K, GU300S15K, GU300S24K, GU300S48K, V2 and V3 output ports of GU300S56K
- The following output circuits are at ES2 energy levels : V1 output port of GU300S56K
- The following output circuits are at PS3 energy levels : All output ports of all models
- The maximum investigated branch circuit rating is : 20 A
- The investigated Pollution Degree is : 2
- Proper bonding to the end-product main protective earthing termination is : Required
- An investigation of the protective bonding terminals has : not been conducted
- The following input terminals/connectors must be connected to the end-product supply neutral : N
- The following end-product enclosures are required : Mechanical, Electrical, Fire
- The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C) : T100(Class F) , T200(Class F)
- The equipment is suitable for direct connection to : AC mains supply
- The power supply was evaluated to be used at altitudes up to : "5,000 m"
- Clause 5.6.4 and shall be evaluated in end products.
  
- - Different output loading based on convection, conduction and 300LFM, see model difference for details.
  
- An instructional safeguard shall state in end use product that the fuse is in the neutral, and that the mains shall be disconnected to de-energize the phase conductors

**Additional Information**

N/A

**Additional Standards**

The product fulfills the requirements of: EN 62368-1:2014 + A11:2017

<b>Markings and Instructions</b>	
Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listees or Recognized companys name, Trade Name, Trademark or File Number
Equipment identification marking – model identification	Model Number
Equipment rating marking – ratings	"Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"
Fuses – replaceable by ordinary or instructed person	(component ID:F100, F101), "T5A 250VAC" located on or adjacent to fuse or fuseholder or in service manual.
<b>Special Instructions to UL Representative</b> Inspect the transformer(s) listed in table "Electric Strength Test Special Constructions" 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 the table be conducted at the component manufacturer.	

<b>BD1.0 TABLE: Production-Line Testing Requirements</b>						
<b>BD1.1 Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.</b>						
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
GU300SXXK ZZ Where XX represents the output voltage which may be any number from from 12 to 56. ZZ can be any number between 00-99, or any letter from AA to ZZ, or blank, only for market purpose, not affect safety performance	T100, T200	--	Primary to Secondary	3000	4242	1s
<b>BD1.2</b>	<b>Earthing Continuity Test Exemptions – This test is not required for the following models:</b>					
<b>BD1.3</b>	<b>Electric Strength Test Exemptions – This test is not required for the following models:</b>					
<b>BD1.4</b>	<b>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.</b>					
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<b>BE1.0 Sample and Test Specifics for Follow-Up Tests at UL</b>					
Model	Component	Material	Test	Sample (s)	Test Specifics