Test Report issued under the responsibility of:

TEST REPORT

IEC 60950-1

Information technology equipment – Safety – Part 1: General requirements

Report Number. ..... :	160800340SHA-001
Date of issue..... :	2016-09-09, **Modification 1, 2017-01-05**
Total number of pages	50
Applicant's name ..... :	GlobTek, Inc.
Address..... :	186 Veterans Dr. Northvale, NJ 07647 USA
Test specification:	
Standard ..... :	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1F
Test Report Form(s) Originator .... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2014-02

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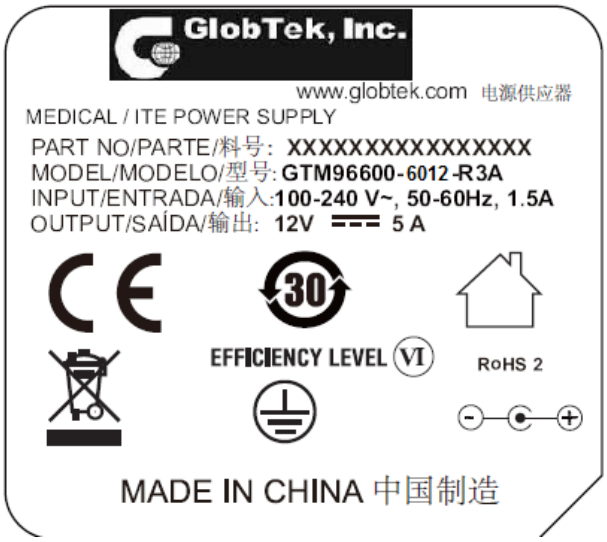
Test item description ..... :	ITE POWER SUPPLY
Trade Mark ..... :	GlobTek, Inc.
Manufacturer ..... :	Same as applicant
Model/Type reference ..... :	GT**-*****, **GT*96600-*56*** ** (See page 9 for details)
Ratings ..... :	GT**-*****: Input: 100-240V~, 50-60Hz, 1.5A; Output: 5-54VDC, Max. 60W **GT*96600-*56***: Input: 100-240V~, 50-60Hz, 2.0A** **Output: 56VDC, Max. 70W**

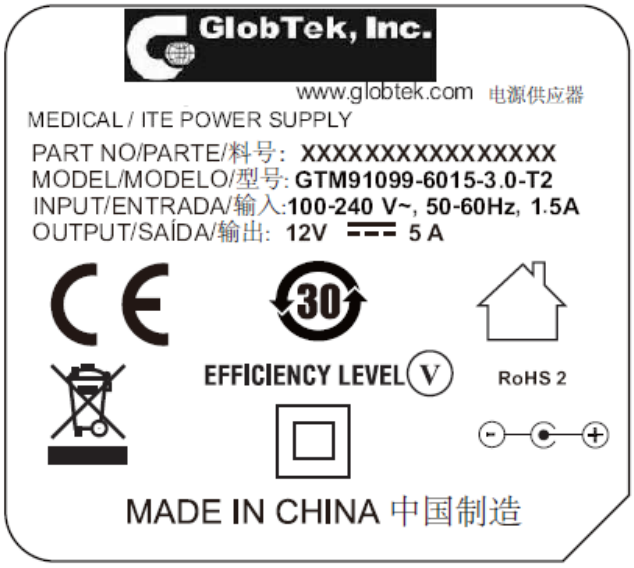
Testing procedure and testing location:		
☒ CB Testing Laboratory:	Intertek Testing Services Shanghai	
Testing location/ address.....:	Building No. 86, 1198 Qinzhou Road (North) 200233 Shanghai CHINA	
☐ Associated CB Testing Laboratory:	N/A	
Testing location/ address.....:		
Tested by (name + signature).....:	Albert Zhou (Engineer)	Albert Zhou
Approved by (name + signature).....:	Will Wang (Mandated Reviewer)	Will Wang
☐ Testing procedure: TMP/CTF Stage 1:	N/A	
Testing location/ address.....:		
Tested by (name + signature).....:		
Approved by (name + signature).....:		
☐ Testing procedure: WMT/CTF Stage 2:	N/A	
Testing location/ address.....:		
Tested by (name + signature).....:		
Witnessed by (name + signature).....:		
Approved by (name + signature).....:		
☐ Testing procedure: SMT/CTF Stage 3 or 4:	N/A	
Testing location/ address.....:		
Tested by (name + signature).....:		
Witnessed by (name + signature).....:		
Approved by (name + signature).....:		
Supervised by (name + signature).....:		

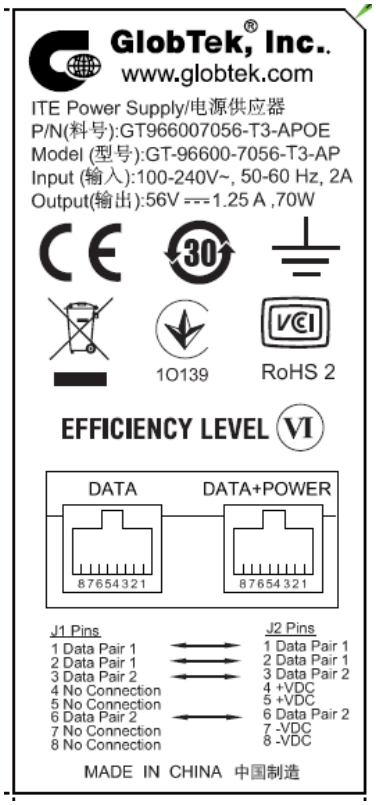
List of Attachments (including a total number of pages in each attachment): **Appendix No.1: Photos of product: from page 39 to page 50, total 12 pages;**	
Summary of testing: From the result of our examination and tests in the submitted samples, conclude they comply with the requirements of the standard IEC 60950-1:2005 (Second Edition) + Am 1:2009 +Am 2:2013	
Tests performed (name of test and test clause): 1.6.2 Input current test 2.2.2 Voltage under Normal Conditions Test 2.2.3 Voltage under Fault Conditions Test 2.4 Limited current circuits Test 2.5 Limited Power Sources Test 2.10.2 Determination of Working Voltage Test 2.10.3 & 2.10.4 Clearances and Creepage Distances Measurement 4.5.2 Temperature test 4.5.5 Ball pressure test 5.1 Touch current test 5.2 Electric strength test 5.3 Abnormal operating and fault conditions test	**Testing location:** Intertek Testing Services Shanghai Building No. 86, 1198 Qinzhou Road (North) 200233 Shanghai CHINA
Summary of compliance with National Differences: **The test report covers group- and national differences for the CENELEC countries.** **The national differences for Singapore and Japan have been checked according to IEC 60950-1 1st ed.** **The national differences for China and Australia/New Zealand have been checked according to IEC 60950-1 2nd ed.** **The national difference for Korea has been checked according to IEC 60950-1 2nd ed. + A1.** **The national differences for USA and Canada have been checked according to IEC 60950-1 2nd ed. + A1 + A2.** ☒ **The product fulfils the requirements of IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013 and EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2:2013.**	

Copy of marking plate(representative):

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.







Note: The above markings are the minimum requirements required by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

Other models are with similar label as corresponding above models except different model name and output ratings.

Test item particulars.....:	
Equipment mobility.....:	[] movable [] hand-held [X] transportable [] stationary [X] for building-in [] direct plug-in
Connection to the mains.....:	[X] pluggable equipment [X] type A [] type B [] permanent connection [X] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains [x] Equipment is a PSU for building-in to be evaluated in the end product.
Operating condition.....:	[X] continuous [] rated operating / resting time:
Access location .....:	[X] operator accessible [] restricted access location
Over voltage category (OVC) .....:	[] OVC I [X] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values .....:	+10%/-10%
Tested for IT power systems .....:	[X] Yes [] No
IT testing, phase-phase voltage (V) .....:	120V or 230V
Class of equipment .....:	[X] Class I [X] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) .....:	16A (20A for Noth America)
Pollution degree (PD) .....:	[] PD 1 [X] PD 2 [] PD 3
IP protection class .....:	IP40 (Except open frame)
Altitude during operation (m) .....:	Max. 5000m
Altitude of test laboratory (m) .....:	<100m
Mass of equipment (kg) .....:	Max. 0.394Kg (For encapsulated type) Max. 0.162Kg (For open frame type) Max. 0.25Kg (For transportable type) **Max.0.226Kg (For GT*96600-*56***)**
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item .....:	2016-12-12
Date (s) of performance of tests.....:	2016-12-12 to 2016-12-30

General remarks:
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. **Throughout this report a ☐ comma / ☒ point is used as the decimal separator.** When determining for test conclusion, measurement uncertainty of tests has been considered. This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program. The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☒ **Yes** ☐ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies).....:	**1.** GlobTek (Suzhou) Co., Ltd Building 4, No. 76 JinLing East Road, Suzhou Industrial Park, Suzhou, JiangSu, 215021, China **2.** GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647 USA

General product information:

Product covered by this report is ITE power supply module. The power supplies which have an output current rating of 6A or less are all rated for Limited Power Source (LPS) application.

Desktop power supplies are provided with suitable external enclosure. The top and bottom parts of the enclosure are ultrasonic welded.

Open frame power supplies are without external enclosure. The external enclosure will be provided within the end product.

The products were tested to be suitable for connection to ⩽ 16 A (IEC) and ⩽ 20 A (USA) branch circuit in series. The unit is approved for TN mains star connections. The unit provides internally two fuses.
The power supplies are rated class I or class II or class II units may have an optional functional earth connection. Open frame and encapsulated class I power supplies shall be properly bonded to the main protective bonding termination in the end product.
All the types are designed for continuous operation.

Model similarity:

GT**-*****
The 1st "*" part can be 'M' or '-' or 'H' for market identification and not related to safety.
The 2nd"*" can be 91099 or 96600 for market identification
The 3rd "*" denotes the rated output wattage designation, which can be "01" to "60", with interval of 1.

When the 2nd "*"=91099

The 4th "*" denotes the standard rated output voltage designation, which can be"09","15","24", "48";
The 5th "*"is optional deviation, subtracted from standard output voltage, which can be "-0.01" to "-23.9" with interval of 0.01, or blank to indicate no voltage different.
The 4th"*" and 5th "*" together denote the output voltage, with a range of 5–48volts.

When the 2nd "*"=96600

The 4th"*" denote the standard rated output voltage designation, which can be "05" to "54" or "5.0" to "54.0" in 0.1V increments.
The 5th"*"=Blank
The 6th"*" =-T2 means desktop class II with C8 AC inlet
=-T2A means desktop class II with C18 AC inlet
=-T3 means desktop class I with C14 AC inlet
=-T3A means desktop class I with C6 AC inlet
=-T2L means desktop class II with C8 AC inlet and housing with a DC jack
=-T2AL means desktop class II with C18 AC inlet and housing with a DC jack
=-T3L means desktop class I with C14 AC inlet and housing with a DC jack
=-T3AL means desktop class I with C6 AC inlet and housing with a DC jack
=-R2 means hybrid desktop housing class II with C8 AC inlet
=-R3A means hybrid desktop housing class I with C6 AC inlet
=-F means Open Frame class I
=-FW means Open Frame class II
=-P2 means Encapsulated class II
=-P3 means Encapsulated class I
The last * denote any six character = 0-9 or A-Z or ()[] or – or blank for marketing purposes.

GT*96600-*56***
The 1st "*" part can be 'M' or '-' or 'H' for market identification and not related to safety.
The 2nd "*" denotes the rated output wattage designation, which can be "01" to "70", with interval of 1.
The 3rd "*" =-T2 means desktop class II with C8 AC inlet
=-T2A means desktop class II with C18 AC inlet
=-T3 means desktop class I with C14 AC inlet
=-T3A means desktop class I with C6 AC inlet
The 4th "*" =-AP or -PP or -SP**

-AP (with baby board) stands for Active POE
-PP(no baby board) stands for Passive POE
-SP (no baby board) stands for Simple POE
The last * denote any six character = 0-9 or A-Z or ()[] or – or blank for marketing purposes.

Alternate Rating:
For models GTM96600-2005-R2 / GTM96600-2005-R3A: output 5VDC, 4.0A at Tma=70 Deg.C;
For models GTM96600-2412-R2 / GTM96600-2412-R3A: output 12VDC, 2.0A at Tma=70 Deg.C;
For models GTM96600-2436-R2 / GTM96600-2436-R3A: output 36VDC, 0.66A at Tma=70 Deg.C;
For models GTM96600-2448-R2 / GTM96600-2448-R3A: output 48VDC, 0.5A at Tma=70 Deg.C;
For models GTM96600-2454-R2 / GTM96600-2454-R3A: output 54VDC, 0.44A at Tma=70 Deg.C;
For models GT-96600-7056-T3-AP/ GT-96600-7056-T2-AP: output 56VDC, 1.25A at Tma=40 Deg.C;

Test performed on 56V&70W output model as representative for new added model series.

Model list:
GT*96600--T2/T2A/T3/T3A/T2L/T2AL/T3L/T3AL* Desktop models**

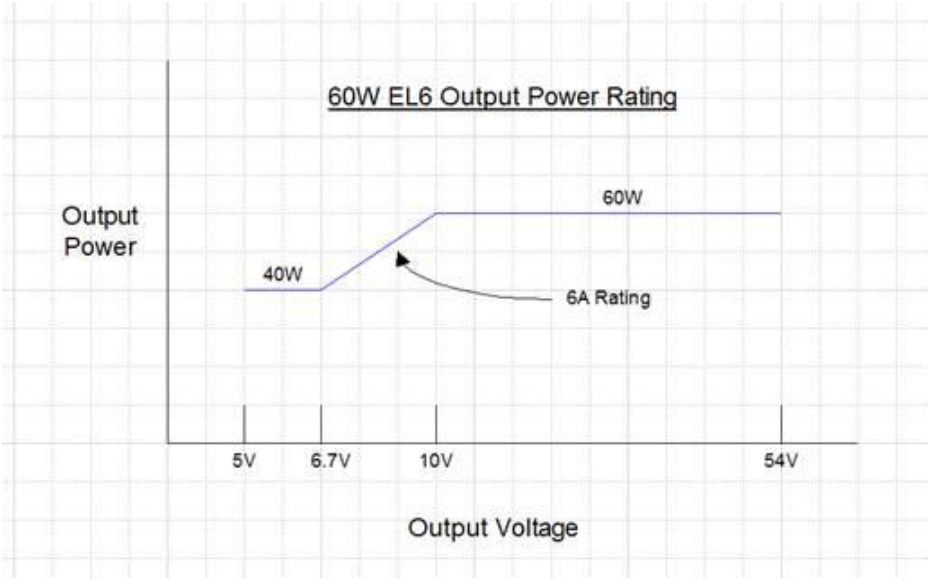
Model	Output Voltage	Max. output current	Max. output power
GT*96600-**-T2/T2A/T3/T3A/T2L/T2AL/T3L/T3AL*	5-6.7V	8A	40W
GT*96600-**-T2/T2A/T3/T3A/T2L/T2AL/T3L/T3AL*	6.8-54V	6A	60W

GT*96600-*56-T2/T2A/T3/T3A-AP/PP/SP* Desktop models

GT*96600-*56-T2/T2A/T3/T3A-AP/PP/SP*	**56V**	**1.25A**	**70W**

GT*96600-*-R2/R3A* External/Hybrid models**

Model	Output Voltage	Max. output current	Max. output power
GT*96600-**-R2/R3A*	5-6.7V	8A	40W
GT*96600-**-R2/R3A*	6.8-54V	6A	60W



GT*91099-*-T2/T2A/T3/T3A/F/FW/P2/P3* External/Hybrid desktop or direct plug-in model or Open Frame or Encapsulated**

Model	Output Voltage	Max. output current	Max. output power
GT*91099-*09*-T2/T2A/T3/T3A/F/FW/P2/P3*	5-9V	6A	50W
GT*91099-*15*- T2/T2A/T3/T3A/F/FW/P2/P3*	9.1-15V	6A	60W
GT*91099-*24*- T2/T2A/T3/T3A/F/FW/P2/P3*	15.1-24V	4A	60W
GT*91099-*48*- T2/T2A/T3/T3A/F/FW/P2/P3*	24.1-48V	2.5A	60W

Note: For 91099 series, T2A model use C8 inlet.

Abbreviations used in the report:

- normal conditions	**N.C.**	- single fault conditions	**S.F.C**
- functional insulation	**FI**	- basic insulation	**BI**
- double insulation	**DI**	- supplementary insulation	**SI**
- between parts of opposite polarity	**BOP**	- reinforced insulation	**RI**

Indicate used abbreviations (if any)

Modification 1:

The original test report ref. No. 160800340SHA-001 dated on 2016-09-09 was modified on 2017-01-05 to include the following changes and/ or additions:

1. Add new model series: GT*96600-*56***
2. Delete the suppliers of PCB "SUZHOU CITY YILIHUA ELECTRONICS CO LTD" and "JIANGSU DIFEIDA ELECTRONICS CO LTD", add a new supplier of PCB "SHANGHAI H-FAST ELECTRONICS CO LTD".
3. Add new model "3271, 3266, 1569" of Earthing wire.

After review, supplementary tests on Input current test, Voltage under Normal Conditions Test, Voltage under Fault Conditions Test, Limited current circuits Test, Limited Power Sources Test, Determination of Working Voltage Test, Clearances and Creepage Distances Measurement, Temperature test, Touch current test, Electric strength test and Abnormal operating and fault conditions test were performed.

Clauses Concerned.....: Clauses 1.6.2, 2.2.2, 2.2.3, 2.4, 2.5, 2.10.2, 2.10.3&2.10.4, 4.5.2, 5.1, 5.2 and 5.3
Table 1.5.1
Photos

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6.2	Input current	(see appended table 1.6.2)	P
2.2	**SELV circuits**		P
2.2.1	General requirements	(see appended table 2.2)	P
2.2.2	Voltages under normal conditions (V) ..... :	(see appended table 2.2)	P
2.2.3	Voltages under fault conditions (V) ..... :	(see appended table 2.2 and 5.3)	P
2.2.4	Connection of SELV circuits to other circuits .....:	SELV circuits are only connected to other SELV circuits.	P
2.4	**Limited current circuits**		P
2.4.1	General requirements	Measuring instrument D.1 in Annex D is used	P
2.4.2	Limit values	(see appended table 2.4)	P
	Frequency (Hz) ..... :	62.1kHz	—
	Measured current (Ma) ..... :	3mA max.	—
	Measured voltage (V) ..... :	6.0V max.	—
	Measured circuit capacitance (nF or µF)..... :	CY1: 2200pF (For GT*96600-*56*** series)	—
2.4.3	Connection of limited current circuits to other circuits		P
2.5	**Limited power sources**		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition		P
	Use of integrated circuit (IC) current limiters		—
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)..... :	Max. 55.9V, Max. 1.57A, Max. 95.66W (see appended table 2.5)	—
	Current rating of overcurrent protective device (A) .:		—
2.9	**Electrical insulation**		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.1	Properties of insulating materials		P
2.9.2	Humidity conditioning	120h	P
	Relative humidity (%), temperature (°C) ..... :	93%, 40℃	—
2.9.3	Grade of insulation	Insulation is considered to be functional, reinforced or double insulation	P
2.9.4	Separation from hazardous voltages	Separated from hazardous voltage by reinforced or double insulation	P
	Method(s) used ..... :	Method 1	—
2.10	**Clearances, creepage distances and distances through insulation**		P
2.10.1	General		P
2.10.1.1	Frequency ..... :	123.6kHz	P
2.10.1.2	Pollution degrees ..... :	2	P
2.10.1.3	Reduced values for functional insulation		P
2.10.1.4	Intervening unconnected conductive parts		P
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		P
2.10.2.1	General		P
2.10.2.2	RMS working voltage		P
2.10.2.3	Peak working voltage		P
2.10.3	Clearances		P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages	2500V	P
	a) AC mains supply ..... :	100-240V	P
	b) Earthed d.c. mains supplies ..... :		N/A
	c) Unearthed d.c. mains supplies ..... :		N/A
	d) Battery operation ..... :		N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.5	Clearances in circuits having starting pulses		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.6	Transients from a.c. mains supply ..... :		P
2.10.3.7	Transients from d.c. mains supply ..... :		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems ..... :		N/A
2.10.3.9	Measurement of transient voltage levels		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply ..... :		N/A
	For a d.c. mains supply ..... :		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances		P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests..... :	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation		P
2.10.5.1	General		P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		P
2.10.5.5.	Cemented joints		P
2.10.5.6	Thin sheet material – General		P
2.10.5.7	Separable thin sheet material		P
	Number of layers (pcs) ..... :	2 layers for insulation tape around transformer	—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure	(see appended table 2.10.5)	P
	Electric strength test		—
2.10.5.11	Insulation in wound components		P
2.10.5.12	Wire in wound components	Approved TIW was used.	P
	Working voltage ..... :	See appended table 2.10.2.	P
	a) Basic insulation not under stress ..... :		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	b) Basic, supplementary, reinforced insulation ..... :		P
	c) Compliance with Annex U ..... :		P
	Two wires in contact inside wound component; angle between 45° and 90° ..... :	Not in contact between primary winding and secondary winding. The insulating tape is provided to protect against mechanical stress	P
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage ..... :		N/A
	- Basic insulation not under stress ..... :		N/A
	- Supplementary, reinforced insulation ..... :		N/A
2.10.6	Construction of printed boards		P
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	P
2.10.6.2	Coated printed boards		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs) ..... :		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.10.12	Enclosed and sealed parts		N/A

4.5	**Thermal requirements**		P
4.5.1	General		P
4.5.2	Temperature tests		P
	Normal load condition per Annex L ..... :	Rated load with continuous operation.	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat ..... :	(see appended table 4.5.5)	P

5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		**P**
5.1	**Touch current and protective conductor current**		P
5.1.1	General	(see appended Table 5.1)	P
5.1.2	Configuration of equipment under test (EUT)		P
5.1.2.1	Single connection to an a.c. mains supply		P
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit		P
5.1.4	Application of measuring instrument	Measuring instrument D.1 in Annex D is used	P
5.1.5	Test procedure		P
5.1.6	Test measurements		P
	Supply voltage (V) .....:	264	—
	Measured touch current (mA) .....:	(see appended table 5.1)	—
	Max. allowed touch current (mA) .....:	(see appended table 5.1)	—
	Measured protective conductor current (mA) .....:		—
	Max. allowed protective conductor current (mA)...:		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General .....:		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N/A

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5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) .....:		—
	Measured touch current (Ma) .....:		—
	Max. allowed touch current (Ma) .....:		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports .....:		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A
5.2	**Electric strength**		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure		P
5.3	**Abnormal operating and fault conditions**		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors		N/A
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation.....:	Method a) and c) used.	P
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE .....:		N/A
5.3.7	Simulation of faults		P
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests		P
5.3.9.2	After the tests		P

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1.5.1	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])	
PCB	WALEX ELECTRONIC (WUXI) CO LTD	T2, T2A, T2B T4	Min. 1,6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E154355	
Alt. use	DONGGUAN HE TONG ELECTRONICS CO LTD	CEM1 2V0 FR4	Min. 1,6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E243157	
Alt. use	CHEERFUL ELECTRONIC (HK) LTD	02 03 03A	Min. 1,6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E199724	
Alt. use	DONGGUAN DAYSUN ELECTRONIC CO LTD	DS2	Min. 1,6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E251754	
Alt. use	SHANGHAI AREX PRECISION ELECTRONIC CO LTD	02V0 04V0	Min. 1,6 mm thickness, min. V-0, 130°C	IEC 60335-1 UL 796	Tested with appliance UL E186016	
Alt. use	BRITE PLUS ELECTRONICS (SUZHOU) CO LTD	DKV0-3A DGV0-3A	Min. 1,6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E177671	
Alt. use	KUOTIANG ENT LTD	C-2 C-2A	Min. 1,6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E227299	
Alt. use	SHENZHEN TONGCHUANGXIN ELECTRONICS CO LTD	TCX	Min. 1,6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E250336	
Alt. use	PACIFIC WIN INDUSTRIAL LTD	PW-02 PW-03	Min. 1,6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E228070	
Alt. use	YUANMAN PRINTED CIRCUIT CO LTD	1V0	Min. 1,6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E74757	
Alt. use	SUZHOU XINKE ELECTRONICS CO LTD	XK-2, XK-3	Min. 1,6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E231590	

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Alt. use	KUNSHAN CITY HUA SHENG CIRCUIT BOARD CO LTD	HS-S	Min. 1,6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E229877
Alt. use	HUIZHOU SHUNJIA ELECTRONICS CO LTD	SJ-B	Min. 1,6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E320884
Alt. use	**SHANGHAI H-FAST ELECTRONICS CO LTD**	**411001, 211001**	**Min. 1,6 mm thickness, min. V-0, 130°C**	**IEC 60950-1** **UL 796**	**Tested with appliance** **UL E337862**
Fuse (FS1,FS2 or F1, F2) (FS2 or F2 is optional) (FS1, FS2 for GT*91099 series, F1, F2 for GT*96600 series, **F1 For GT*96600-*56*** series)**	Conquer Electronics Co., Ltd.	MST series	T3.15A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017118 UL E82636
Alt. use	Ever Island Electric Co., Ltd. And Walter Electric	2010, ICP	T3.15A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40018781 UL E220181
Alt. use	Bel Fuse Ltd.	RST-Serie(s)	T3.15A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40011144 UL E20624
Alt. use	Cooper Bussmann LLC	SS-5	T3.15A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40015513 UL E19180
Alt. use	Shenzhen Lanson Electronics Co. Ltd.	SMT	T3.15A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40012592 UL E221465
Alt. use	Das & Sons International Ltd.	385T series	T3.15A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40008524 UL E205718

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Alt. use	Dongguan Better Electronics Technology Co., Ltd.	932	T3.15A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40033369 UL E300003
Alt. use	Hollyland Company Limited	5ET	T3.15A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40015669 UL E156471
Alt. use	Sunny East Enterprise Co. Ltd.	CFD-Serie(s)	T3.15A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40030246 UL E133774
Alt. use	Conquer Electronics Co., Ltd.	MET series	T3.15A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017157 UL E82636
Alt. use	Zhongshan Lanbao Electrical Appliances Co., Ltd.	RTI-10 Serie(s)	T3.15A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017009 UL E213695
Y capacitor (CY1, CY2) (Optional) **(CY1 For GT*96600-*56*** series)**	TDK-EPC Corporation, Capacitors Group Circuit Devices Business Group	CD	Y1, AC250V, max 2200pF, 25/085/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 138526 UL E37861
Alt. use	Success Electronics Co., Ltd.	SE	Y1, AC250V, or AC500V, max 2200pF, 40/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40037211 VDE 40020002 UL E114280
Alt. use	Success Electronics Co., Ltd.	SB	Y1, AC250V, max 2200pF, 40/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40037221 VDE 40020001 UL E114280
Alt. use	Murata Mfg. Co., Ltd.	KX	Y1, AC250V, max 2200pF, 25/125/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40002831 UL E37921

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Alt. use	Walsin Technology Corp.	AH	Y1, AC250V, max 2200pF, 25/125/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40001804 UL E146544
Alt. use	JYA-NAY Co., Ltd.	JN	Y1, AC250V, max 2200pF, 25/125/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40001831 UL E201384
Alt. use	Haohua Electronic Co.	CT 7	Y1, AC250V, max 2200pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40003902 UL E233106
Alt. use	Jyh Chung Electronic Co., Ltd.	JD	Y1, AC250V, max 2200pF, 40/085/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 137027 UL E187963
Alt. use	Jerro Electronics Corp.	JX-series	Y1, AC250V, max 2200pF, 40/125/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40032158 UL E333001
Alt. use	WELSON INDUSTRIAL CO LT D	WD	Y1, AC250V, max 2200pF, 55/125/21/C	IEC/EN 60384-14	VDE 40016157
X capacitor (CX1) (Optional)	Cheng Tung Industrial Co., Ltd.	CTX	Min. 300VAC, Max. 0.47µF,110 °C, X1 or X2	IEC 60950-1 UL 60384-14 UL 1414	Tested with appliance UL E193049
Alt. use	Tenta Electric Industrial Co. Ltd.	MEX	Min. 250VAC, Max. 0.47µF, 40/100/21/B, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 119119 UL E222911
Alt. use	Joey Electronics (Dong Guan) Co., Ltd.	MPX	Min. 250VAC, Max. 0.47µF, 40/105/21/B, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40032481 UL E216807
Alt. use	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Min. 250VAC, Max. 0.47µF, 40/100/21/C, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40015608 UL E183780

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Alt. use	Yuon Yu Electronics Co. Ltd.	MPX	Min. 250VAC, Max. 0.47µF, 40/100/21/C, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40032392 UL E200119
Alt. use	Sinhua Electronics (Huzhou) Co., Ltd.	MPX	Min. 250VAC, Max. 0.47µF, 40/100/21/C, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40014686 UL E237560
Alt. use	Jiangsu Xinghua Huayu Electronics Co., Ltd.	MPX - Series	Min. 250VAC, Max. 0.47µF, 40/100/21/C, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40022417 UL E311166
Alt. use	Dain Electronics Co., Ltd.	MEX, MPX, NPX	Min. 250VAC, Max. 0.47µF, 40/100/21/C, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40018798 UL E147776
Alt. use	Shenzhen Jinghao Capacitor Co., Ltd.	CBB62B	Min. 250VAC, Max. 0.47µF, 40/110/56/B, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40018690 UL E252286
Alt. use	Foshan Shunde Chuang Ge Electronic Industrial Co., Ltd.	MKP-X2	Min. 250VAC, Max. 0.47µF, 40/105/21/B, X2	IEC/EN 60384-14	VDE 40008922
Alt. use	Okaya Electric Industries Co. LTD	RE-Series	Min. 250VAC, Max. 0.47µF, 55/100/56/C, X2	IEC/EN 60384-14	VDE 40028657
Alt. use	VISHAY Capacitors Belgium NV	F 1772	Min. 250VAC, Max. 0.47µF, 40/100/56/C, X2	IEC/EN 60384-14	VDE 40005095
Alt. use	Winday Electronic Industrial Co., Ltd.	MPX series	Min. 250VAC, Max. 0.47µF, 40/100/21/C, X2	IEC/EN 60384-14	VDE 40018071
Photo coupler (U1 or U4) (U1 for GT*91099 series, U4 for GT*96600 series, **U1 For GT*96600-*56*** series)**	Everlight Electronics Co., Ltd.	EL817	Dti=0.5mm Int. , dcr=6.0mm EXT.dcr=7.7mm, thermal cycling test,110°C	IEC/EN 60747-5-2	VDE 132249

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Alt. use	COSMO Electronics Corporation	K1010 / KP1010	Dti=0.6mm Int. , dcr=4.0mm EXT.dcr=5.0mm, thermal cycling test,115°C	IEC/EN 60747-5-2	VDE 101347
Alt. use	Lite-On Technology Corporation	LTV-817	Dti=0.8mm Int. , EXT.dcr=7.8mm, thermal cycling test,100°C	IEC/EN 60747-5-2	VDE 40015248
Alt. use	Fairchild Semiconductor Pte Ltd.	H11A817B / FOD817B	Insulation voltage: 850V; Transient overvoltage: 6000V; CTI175; Int. Cr/ Ext. Cr: ≥7,0/ 7,0 mm; 30/110/21	IEC/EN 60747-5-2	VDE 40026857
Alt. use	Sharp Corporation Electronic Components and Devices Group	PC817	Insulation voltage: 890V; Transient overvoltage: 9000V Int. Cr/ Ext. Cr: 7.62/ 7.62 mm; 30/100/21	IEC/EN 60747-5-2	VDE 40008087
Alt. use	Bright Led Electronics Corp.	BPC-817 A/B/C/D/L BPC-817 M BPC-817 S	Dti=0.4mm EXT.dcr=7.0mm, thermal cycling test,100°C	IEC/EN 60747-5-2	VDE 40007240
Alt. use	Toshiba Corporation Semiconductor & Storage Products Company	TLP817F	Dti > 0.4mm, Ext cr > 8.0mm, Isolation 3000Vac min., 110°C min., Thermal cycling test	IEC/EN 60747-5-2	VDE 40021173
Varistor MOV1 (Optional)	Thinking Electronic Industrial Co., Ltd.	TVR10471K, TVR14471K	Max. Continuous voltage: min 300Vac(rms), 85°C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 005944
Alt. use	Centra Science Corp.	10D471K, 14D471K	Max. Continuous voltage: min 300Vac(rms), 85°C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 4008220

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Alt. use	Success Electronics Co., Ltd.	SVR10D471K SVR14D471K	Max. Continuous voltage: min 300Vac(rms), 85°C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40030401
Alt. use	Walsin Technology Co., Ltd.	14D471K	Max. Continuous voltage: min 300Vac(rms), 85°C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40010090
Alt. use	Lien Shun Electronics Co., Ltd.	14D471K	Max. Continuous voltage: min 300Vac(rms), 85°C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40005858
Alt. use	Ceramate Techn. Co., Ltd.	GNR10D471K GNR14D471K	Max. Continuous voltage: min 300Vac(rms), 85°C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40031745
Alt. use	Brightking (Shenzhen) Co., Ltd.	14D471K 10D471K	Max. Continuous voltage: min 300Vac(rms), 85°C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40027827
Alt. use	Joyin Co., Ltd.	JVR10N471K JVR14N471K	Max. Continuous voltage: min 300Vac(rms), 85°C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 005937
Appliance inlet CN1 Class I units(C6 type)	Zhejiang LECI Electronics Co., Ltd.	DB-6	2.5A, 250Vac	IEC/EN 60320-1	VDE 40032465
Alt. use	Rich Bay Co., Ltd.	R-30790	2.5A, 250Vac	IEC/EN 60320-1	VDE 40030381
Alt. use	Sun Fair Electric Wire & Cable (HK) Co. Ltd.	S-02	2.5A, 250Vac	IEC/EN 60320-1	VDE 40034448
Alt. use	TECX-UNIONS Technology Corporation	TU-333	2.5A, 250Vac	IEC/EN 60320-1	ENEC 00633
Alt. use	Rong Feng Industrial Co., Ltd.	RF-190	2.5A, 250Vac	IEC/EN 60320-1	VDE 40030379
Alt. use	Inalways Corporation	0724	2.5A, 250Vac	IEC/EN 60320-1	ENEC 2010080

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Alt. use	Zhe Jiang Bei Er jia	ST-A04-002	2.5A, 250Vac	IEC/EN 60320-1	VDE 40016045
Alt. use	Shenzhen Delikang Electronics Technology Co. Ltd.	CDJ-2	2.5A, 250Vac	IEC/EN 60320-1	VDE 40015580
Appliance inlet CN1 Class I units (C14 type)	Zhejiang LECI Electronics Co., Ltd.	DB-14	10A, 250Vac	IEC/EN 60320-1	VDE 40032137
Alt. use	Rich Bay Co., Ltd.	R-301SN	10A, 250Vac	IEC/EN 60320-1	VDE 40030228
Alt. use	Sun Fair Electric Wire & Cable (HK)Co. Ltd.	S-03	10A, 250Vac	IEC/EN 60320-1	VDE 40034447
Alt. use	TECX-UNIONS Technology Corporation	TU-301-S, TU-301-SP	10A, 250Vac	IEC/EN 60320-1	ENEC 00647
Alt. use	Rong Feng Industrial Co., Ltd.	SS-120	10A, 250Vac	IEC/EN 60320-1	VDE 40028101
Alt. use	Inalways Corporation	0711	10A, 250Vac	IEC/EN 60320-1	ENEC 2010084
Alt. use	Zhe Jiang Bei Er jia	ST-A01-003J	10A, 250Vac	IEC/EN 60320-1	VDE 40013388
Appliance inlet CN1 Class II units (C8 type)	Zhejiang LECI Electronics Co., Ltd.	DB-8	2.5A, 250Vac	IEC/EN 60320-1	VDE 40032028
Alt. use	Rich Bay Co., Ltd.	R-201SN90	2.5A, 250Vac	IEC/EN 60320-1	VDE 40030384
Alt. use	Sun Fair Electric Wire & Cable (HK)Co. Ltd.	S-01	2.5A, 250Vac	IEC/EN 60320-1	VDE 40034449
Alt. use	TECX-UNIONS Technology Corporation	SO-222	2.5A, 250Vac	IEC/EN 60320-1	VDE 40043268
Alt. use	Rong Feng Industrial Co., Ltd.	RF-180	2.5A, 250Vac	IEC/EN 60320-1	VDE 40030168
Alt. use	Inalways Corporation	0721	2.5A, 250Vac	IEC/EN 60320-1	ENEC 2010087
Alt. use	Zhe Jiang Bei Er jia	ST-A03-005	2.5A, 250Vac	IEC/EN 60320-1	VDE 40014833
Alt. use	Shenzhen Delikang Electronics Technology Co. Ltd.	CDJ-8	2.5A, 250Vac	IEC/EN 60320-1	VDE 40025531

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Input connector CN1 (For open frame)	NELTRON INDUSTRIAL CO LTD	2114S	Min 240V; Min 1.5A; Flame class min. V-2;	IEC/EN 60950-1	Tested with appliance UL E144392
Alt. use	JOINT TECH ELECTRONIC INDUSTRIAL CO LTD	A7920 series A3960 series	Min 250V; Min 7A; Flame class min. V-2;	IEC/EN 60950-1	Tested with appliance UL E179987
Alt. use	ZHEJIANG HONGXING ELECTRICAL CO LTD	HX396XX-YYY series	Min 250V; Min 5A; Flame class min. V-2;	IEC/EN 60950-1	Tested with appliance UL E228500
Earthing wire for Class I model	KUNSHAN NEW ZHICHENG ELECTRONICS TECHNOLOGIES CO LTD	1015,1007, 1185, **3271, 3266, 1569**	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1	Tested with appliance UL E237831
Alt. use	ZHUANG SHAN CHUAN ELECTRICAL PRODUCTS (KUNSHAN) CO LTD	1015,1007, 1185,**1569**	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1	Tested with appliance UL E333601
Alt. use	DONGGUAN CHUANTAI WIRE PRODUCTS CO LTD	1015,1007, 1185,**1569**	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1	Tested with appliance UL E315628
Alt. use	YONG HAO ELECTRICAL INDUSTRY CO LTD	1015,1007, 1185,**1569**	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1	Tested with appliance UL E240426
Alt. use	DONGGUAN GUNEETAL WIRE & CABLE CO LTD	1015,1007, 1185, **3271, 3266, 1569**	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1	Tested with appliance UL E204204
Alt. use	SHENG YU ENTERPRISE CO LTD	1015, 1007, 1185	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1	Tested with appliance UL E219726
Alt. use	KUNSHAN XINGHONGMENG ELECTRONIC CO LTD	1015,1007, 1185, **3271, 3266, 1569**	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1	Tested with appliance UL E315421
Alt. use	SUZHOU YEMAO ELECTRONIC CO LTD	1015, 1007, 1185	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1	Tested with appliance UL E353532

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Connection wiring for encapsulated models	KUNSHAN NEW ZHICHENG ELECTRONICS TECHNOLOGIES CO LTD	1015, 1007, 2468, 2464, 1185	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 60950-1	Tested with appliance UL E237831
Alt. use	Interchangeable	1015, 1007, 2468, 2464, 1185, SPT-1, SPT-2	Min. 20AWG, min. 300Vac, min. 80°C	IEC/EN 60950-1 UL 758	Tested with appliance UL approved
Output cord	Interchangeable	Interchangeable	Min. 24AWG, min. 300Vac, min. 80°C	IEC/EN 60950-1 UL 758	Tested with appliance UL approved
Heat-shrinkable tubing (Optional)	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR, RSFR-H, RSFR-HPF	600V, 125 °C	IEC/EN 60950-1	Tested with appliance UL E203950
Alt. use	QIFURUI ELECTRONICS CO	QFR-h	600V, 125°C	IEC/EN 60950-1 UL 224	Tested within appliance UL E225897
Alt. use	DONGGUAN SALIPT CO LTD	SALIPT S-901-300 SALIPT S-901-600	Min. 300V, 125°C	IEC/EN 60950-1 UL 224	Tested within appliance UL E209436
Alt. use	GUANGZHOU KAIHENG ENTERPRISE GROUP	K-2 (+) K-2 (CB)	Min. 300V, 125°C	IEC/EN 60950-1 UL 224	Tested within appliance UL E214175
Alt. use	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-HFT	Min. 300V, 125°C	IEC/EN 60950-1 UL 224	Tested within appliance UL E180908
Transformer (T1)	GlobTek / BOAM / HAOPUWEI	See attachment for details	Class B, with critical component listed below	IEC 60950-1	Tested with appliance
- Magnet wire	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWN/U (UL E201757)	MW28-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWS/U (UL E201757)	MW75-C, 130°C	IEC 60950-1	Tested with appliance

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Alt. use	JUNG SHING WIRE CO LTD	UEW-4 (UL E174837)	MW75C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	JUNG SHING WIRE CO LTD	UEY-2 (UL E174837)	MW28-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	JIANGSU HONGLIU MAGNET WIRE TECHNOLOGY CO LTD	2UEW/130 (UL E335065)	MW75-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	CHANGZHOU DAYANG WIRE & CABLE CO LTD	2UEW/130 (UL E158909)	MW75-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	WUXI JUFENG COMPOUND LINE CO LTD	2UEWB (UL E206882)	MW75#, 130°C	IEC 60950-1	Tested with appliance
Alt. use	JIANGSU DARTONG M & E CO LTD	UEW (UL E237377)	MW 75-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	SHANDONG SAINT ELECTRIC CO LTD	UEW/130 (UL E194410)	MW75#, 130°C	IEC 60950-1	Tested with appliance
Alt. use	ZHEJIANG LANGLI ELECTRIC EQUIPMENTS CO LTD	UEW (UL E222214)	MW 79#, 130°C	IEC 60950-1	Tested with appliance
-Triple-insulated wire (Secondary)	Great Leoflon Industrial Co., Ltd.	TRW (B) Serie(s)	Class B, reinforced insulation	IEC 60950-1 UL 2353 UL 60601-1	VDE 136581 UL E211989
- Alt. use	COSMOLINK CO. Ltd.	TIW-M Serie(s)	Class B, reinforced insulation	IEC 60950-1 UL 2353 UL 60601-1	VDE 138053 UL E213764
- Alt. use	Furukawa Electric Co., Ltd. Electronics & Automotive Systems Company Global Business Development Division	TEX-E	Class B, reinforced insulation	IEC 60950-1 UL 2353 UL 60601-1	VDE 006735 UL E206440
- Alt. use	TOTOKU ELECTRIC CO LTD	TIW-2	Reinforced insulation, rated 130° C (Class B)	UL 2353 UL60950-1 UL 60601-1	VDE 40005152 UL E249037

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

- Alt. use	E&B TECHNOLOGY CO LTD	E&B-XXXB E&B-XXXB-1	Reinforced insulation, Class B	IEC 60950-1 UL 2353 UL 60601-1	VDE 40023473 UL E315265
- Alt. use	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TIW	Reinforced insulation, Class B	IEC 60950-1 UL 2353 UL 60601-1	Tested with appliance UL E249037
- Alt. use	SHENZHEN JIUDING NEW MATERIAL CO LTD	DTIW-B	Reinforced insulation, Class B	IEC 60950-1 UL 2353 UL 60601-1	VDE 40037495 UL E357999
-Bobbin	CHANG CHUN PLASTICS CO LTD	T375J T375HF	V-0, 150°C, thickness 0,45 mm min.	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E59481
- Alt. use	CHANG CHUN PLASTICS CO LTD	4130	V-0, 140°C, thickness 0,74 mm min.	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E59481
- Alt. use	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, thickness 0,45 mm min.	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E41429
- Alt. use	HITACHI CHEMICAL CO LTD	CP-J-8800	V-0, 150°C, thickness 0,45 mm min.	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E42956
-Insulating tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 1350T-1 44	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E17385
- Alt. use	BONDTEC PACIFIC CO LTD	370S	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E175868
- Alt. use	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ CT WF	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E165111
- Alt. use	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E246950

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

- Alt. use	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E246820
-PTFE tubing	GREAT HOLDING INDUSTRIAL CO LTD	TFT / TFS	Min. 300V, 200°C	IEC 60950-1	Tested with appliance UL E156256
-Alt. use	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	WF	600V, 200°C	IEC 60950-1	Tested with appliance UL E203950
-Alt. use	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TT-T / CB-TT-S	Min. 300V, 200°C	IEC 60950-1	Tested with appliance UL E180908
Enclosure (all parts)	SABIC INNOVATIVE PLASTICS B V	SE1X, SE1	PPE+PS, Min. V-1, Min. thickness: 2.0mm, 105°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	SE100	PPE+PS, Min. V-1, Min. thickness: 2.0mm, 95°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	C2950	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 85°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	CX7211 EXCY0098	PC/ABS, Min. V-1, Min. thickness: 2.0mm, 90°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	945	PC, Min. V-1, Min. thickness: 2.0mm, 120°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	HF500R	PC, V-0, Min. thickness: 2.0mm, 125°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	TEIJIN CHEMICALS LTD	LN-1250P LN-1250G	PC, Min. V-0, Min. thickness: 2.0mm, 115°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E50075

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Alt. use	CHI MEI CORPORATION	PA-765A	ABS, Min. V-0, Min. thickness: 2.0mm, 85°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E56070
Alt. use	CHI MEI CORPORATION	PC-540	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 70°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E56070
Supplementary information: **[1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039**. **For all transformers under all manufacturers.**					

Attachment for transformer as below:

Product Model	Voltage range	Transformer model
GT*96600 series	5V-8.9V	TF058
	9V-15V	TF059
	15.1V-20V	TF063
	20.1V-28V	TF060
	28.1V-40V	TF064
	40.1V-54V	TF061
GT*91099 series	5V-9V	XF00794
	9.1V-15V	XF00694
	15.1V-24V	XF00695
	24.1V-48V	XF00731
GT*96600-*56* series**	**56V**	**TF072**

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: Opto Electronic Devices	P
Manufacturer ..... :	See list of safety critical components.	
Type..... :	See list of safety critical components.	
Separately tested ..... :	Approved optocouplers used. See list of safety critical components.	
Bridging insulation ..... :	Reinforced insulation	
External creepage distance..... :	Approved optocouplers used. See list of safety critical components.	
Internal creepage distance ..... :	-*	
Distance through insulation ..... :	Approved optocouplers used. See list of safety critical components.	
Tested under the following conditions..... :	R	
Input..... :	-	
Output..... :	-	
supplementary information		
* Compliance with thermal cycling test was checked on these parts.		

1.6.2	TABLE: Electrical data (in normal conditions)					P
Model: GT-96600-7056-T3-AP						
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90	1.285	--	78.30	F1	1.285	Max Normal Load 50Hz
90	1.235	--	78.36	F1	1.235	Max Normal Load 60Hz
100	1.138	2.0	77.37	F1	1.138	Max Normal Load 50Hz
100	1.104	2.0	77.90	F1	1.104	Max Normal Load 60Hz
240	0.543	2.0	75.68	F1	0.543	Max Normal Load 50Hz
240	0.517	2.0	75.97	F1	0.517	Max Normal Load 60Hz
264	0.496	--	76.00	F1	0.496	Max Normal Load 50Hz
264	0.489	--	76.16	F1	0.489	Max Normal Load 60Hz
Supplementary information:						

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.1.1.5 c) 1)	TABLE: max. V, A, VA test	P

Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
GT-96600-7056-T3-AP				
56	1.25	55.9	1.57	95.66
supplementary information:				
The above measurements are the maximum values (max. V and max. A not obtained at the same time).				

2.2	TABLE: evaluation of voltage limiting components in SELV circuits	P

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	
GT-96600-7056-T3-AP			
Transformer T1 (Pin A and Pin B)	126Vpk	--	Diode D7
Transformer T1 (Pin 7 and Pin 12)	148Vpk	--	--
Transformer T1 (Pin B and D7 Cathode)	--	59.6Vdc	SELV

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
supplementary information:	

2.4.2	TABLE: limited current circuit measurement	P

Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments
CY1 secondary to E	6.0	3.0	62.1	43.47	CY1=2200pF, tested with 2000 ohm non-inductive resistor.
supplementary information:					
Tested with 2000 ohm non-inductive resistor.					

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.5	TABLE: Limited power sources	P

Circuit output tested:

Note: Measured Uoc (V) with all load circuits disconnected:

Components	Uoc (V)	I_{sc} (A)		VA	
		Meas.	Limit	Meas.	Limit
GT-96600-7056-T3-AP					
Output Oc	55.9	--	--	--	--
Output Ol	--	1.57	2.68	95.66	100
Single fault: Primary current limitation disabled. (R16 short)	--	0	2.68	0	100
supplementary information: Sc=Short circuit, Oc=Open circuit, Ol=over loaded					

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
GT*96600-*56***						
L to N before fuse(FI)	340	240	2.22*	4.8	2.4	4.8
Two poles of fuse(FI)	340	240	2.22*	3.1	2.4	3.1
Primary to functional earth (Class I)(RI)	340	240	5.92*	6.2	5.92**	6.2
Live parts to Enclosure parts(RI)	340	240	5.92*	6.4	5.92**	6.4
CY1 Primary circuits to secondary circuits(RI)	340	240	5.92*	6.9	5.92*	6.9
U1 Primary circuits to secondary circuits(RI)	340	261	5.92*	7.2	5.92*	7.2
T1 Primary circuits to secondary circuits(RI)	516	294	6.52*	7.2	6.52*	7.2
Transformer Primary winding to secondary winding(RI)	516	294	6.52*	6.8	6.52**	6.8
Transformer Secondary winding to core(RI)	516	294	6.52*	7.2	6.52**	7.2
Core to secondary parts(RI)	516	294	6.52*	10.0	6.52**	10.0
Supplementary information: *Required value was multiplied by the factor 1,48 due to the maximum specified altitude of 5000m **Required creepage not less than required clearance						

2.10.5	TABLE: Distance through insulation measurements				P
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Plastic enclosure	516	294	3000	0.4	1.5
Bobbin	516	294	3000	0.4	0.45
Thin sheet material at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required layers	Layers
Insulation tape around transformer	516	294	3000	3	3
Supplementary information:					

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	**TABLE: Thermal requirements**			P
	Supply voltage (V) .....:	90	264	—
	Ambient T_{min} (°C) .....:	40	40	—
	Model .....:	GT-96600-7056-T3-AP		—
Maximum measured temperature T of part/at……:		T (°C)		Allowed T_{max} (°C)
AC inlet		62.9	53.9	--
PE wire		86.4	73.4	Ref
PCB under BD1		115.9	86.5	130
Line chock of LF2 winding		109.2	78.3	130
X-capacior CX1		87.5	70.9	85
Line cock of LF1 winding		78.0	64.0	130
MOV1		70.8	59.6	85
E-capacitor C3		97.2	82.2	105
PCB under Q1		116.5	104.5	130
Y-capacitor CY1		108.1	98.5	125
T1 winding		108.7	107.3	110
T1 core		106.9	100.1	Ref.
Opto-coulpur U1		84.0	76.2	100
PCB under D7		109.6	103.2	130
E-capacitor C12		95.3	89.1	105
Line chock of LF3 winding		82.0	76.9	130
E-capacitor C14		87.3	82.3	105
E-capacitor C16		74.5	70.4	105
Y-capacitor CY3		57.8	55.1	125
Enclosure inside near T1		88.7	82.1	120
Enclosure outside near T1		85.3	80.5	95

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
GT-96600-7056-T3-AP				
L/N to enclosure(with metal foil)	0.005	0.25	--	
L/N to output	0.08	0.25	--	
supplementary information:				

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests		P
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Primary circuit to body (RI)	AC	3000	No
Primary circuit to functional earth	AC	3000	No
Primary circuit to secondary circuit (RI)	AC	3000	No
L and N (FS1 or F1)	AC	1500	No
Primary winding to secondary winding of T1 (RI)	AC	3000	No
Secondary winding to core (RI)	AC	3000	No
Insulation tape around transformer per layer	AC	3000	No
Primary and secondary of Y1 capacitor	DC	4242	No
Supplementary information:			

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C) ..... :	25, if no else specified	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
GT-96600-7056-T3-AP						
BD1	Sc	90/264	<1s	F1	--	Fuse opened immediately, no hazard.
C3	Sc	90/264	<1s	F1	--	Fuse opened immediately, no hazard.

IEC 60950-1							
Clause	Requirement + Test				Result - Remark		Verdict
U2 pin 1-2	Sc	90/264	10mins	F1	0.038	Unit shutdown immediately, recoverable, no hazard.	
U1 pin 1-6	Sc	90/264	10mins	F1	0.038	Unit shutdown immediately, unrecoverable,U2 and Q1 damage no hazard.	
R17	Sc	90/264	10mins	F1	0.038	Unit shutdown immediately, recoverable, no hazard.	
T1 pin 1-3	Sc	90/264	<1s	F1	--	Fuse opened immediately, Q1 damage no hazard.	
T1 pin 4-5	Sc	90/264	<1s	F1	--	Fuse opened immediately, Q1 damage no hazard.	
T1 pin A-B	Sc	90/264	<1s	F1	--	Fuse opened immediately, no hazard.	
T1 pin 7-12	Sc	90/264	10mins	F1	0.038	Unit shutdown immediately, recoverable, no hazard.	
C8	Sc	90/264	10mins	F1	0.011	Unit shutdown immediately, recoverable, no hazard.	
D7	Sc	90/264	10mins	F1	0.011	Unit shutdown immediately, recoverable, no hazard.	
Output	Sc	90/264	10mins	F1	0.015	Unit shutdown immediately, recoverable, no hazard.	
Output	Ol	264	8h38min	F1	Max. 0.573A	Load to 1.57A, EUT protected immediately, no hazards. Temperature recorded: T1 winding = 122.3℃ Enclosure: 83.3℃	
Supplementary information: “Sc” means short-circuited test, “Ol” means overload test, “Oc” means open-circuited test; “Uoc” means output voltage without load.							

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

C.2	TABLE: transformers	P

Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
For GT*96600-*56***							
T1	Reinforced (Sec. – core)	516	294	3000	6.52	6.52	Triple insulated winding comply with Annex U
T1	Reinforced (Pri. – Sec.)	516	294	3000	6.52	6.52	Triple insulated winding comply with Annex U

Loc.	Tested insulation	Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T1	Reinforced (Sec. – core)	3000	6.8	6.8	2
T1	Reinforced (Pri. – Sec.)	3000	7.2	7.2	2
supplementary information:					

Appendix No.1: Photos of product

For GT*96600-*56*** (External view)

For GT*96600-*56*** (External view)

Appendix No.1: Photos of product

For GT*96600-*56*** (Enclosure with lug)

For GT*96600-*56*** (Internal view)

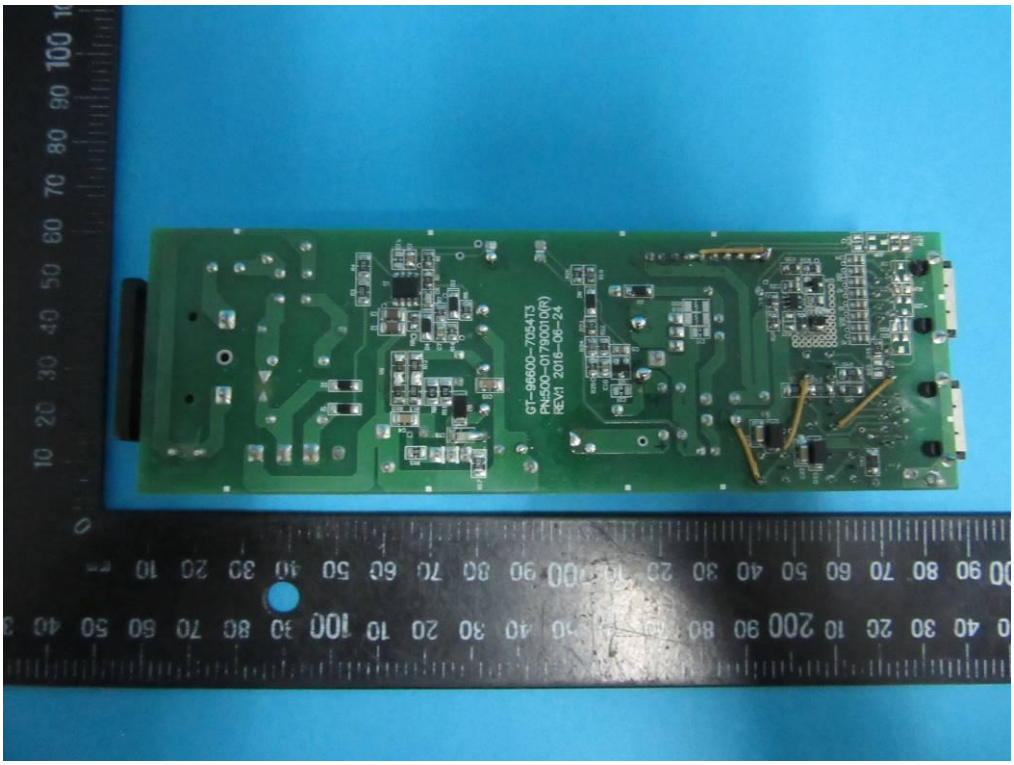
Appendix No.1: Photos of product

For GT*96600-*56*** (Internal view)

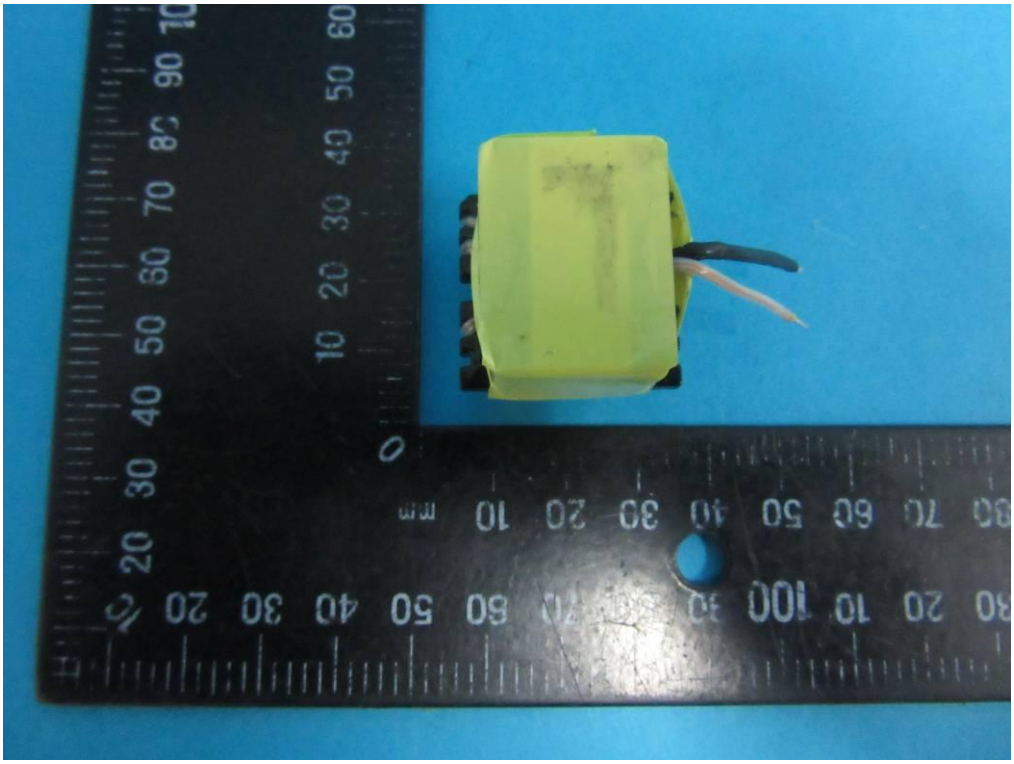
For GT*96600-*56*** (PCB)

Appendix No.1: Photos of product

For GT*96600-*56*** (PCB)

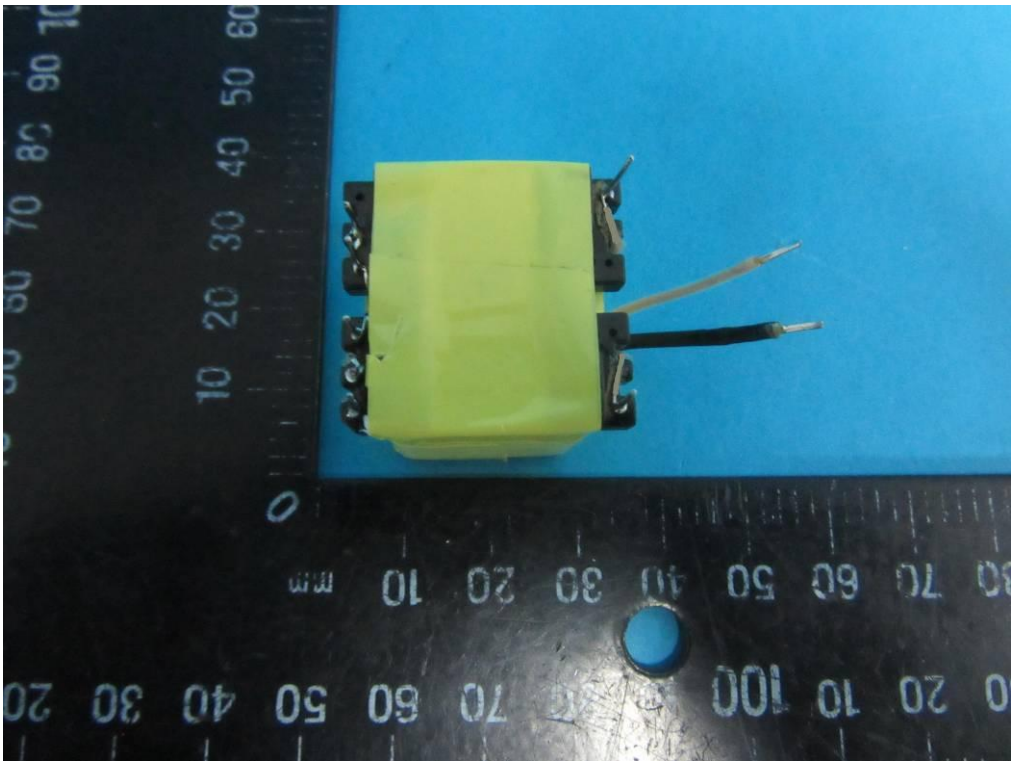


For GT*96600-*56*** (Transformer)

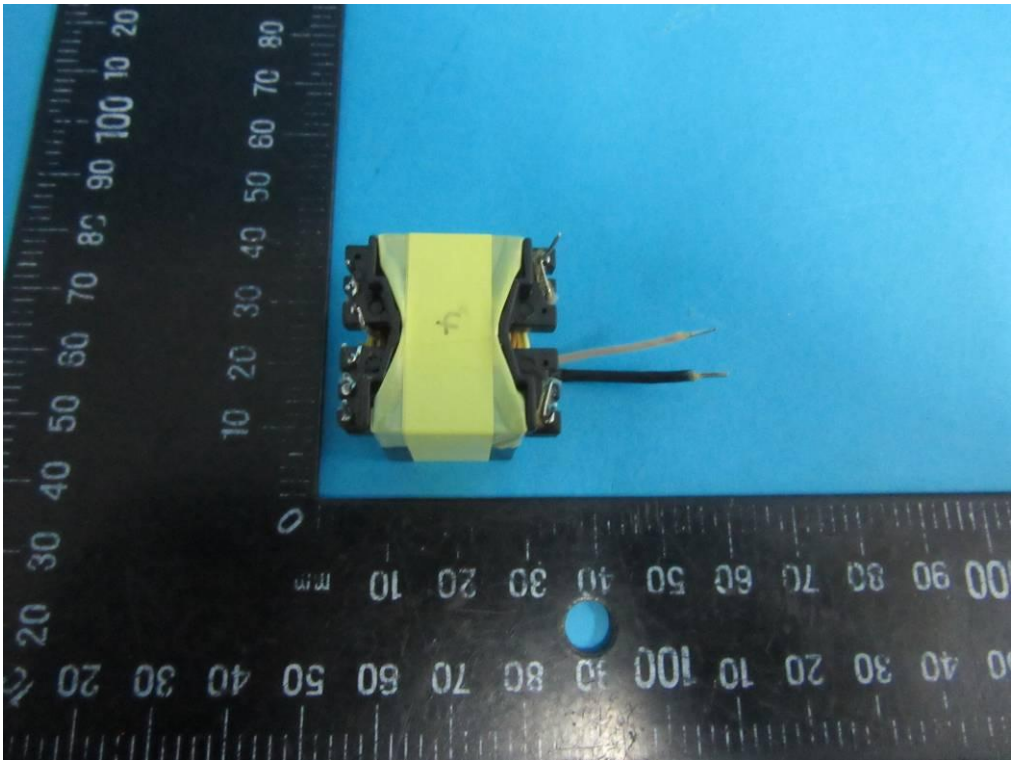


Appendix No.1: Photos of product

For GT*96600-*56*** (Transformer)

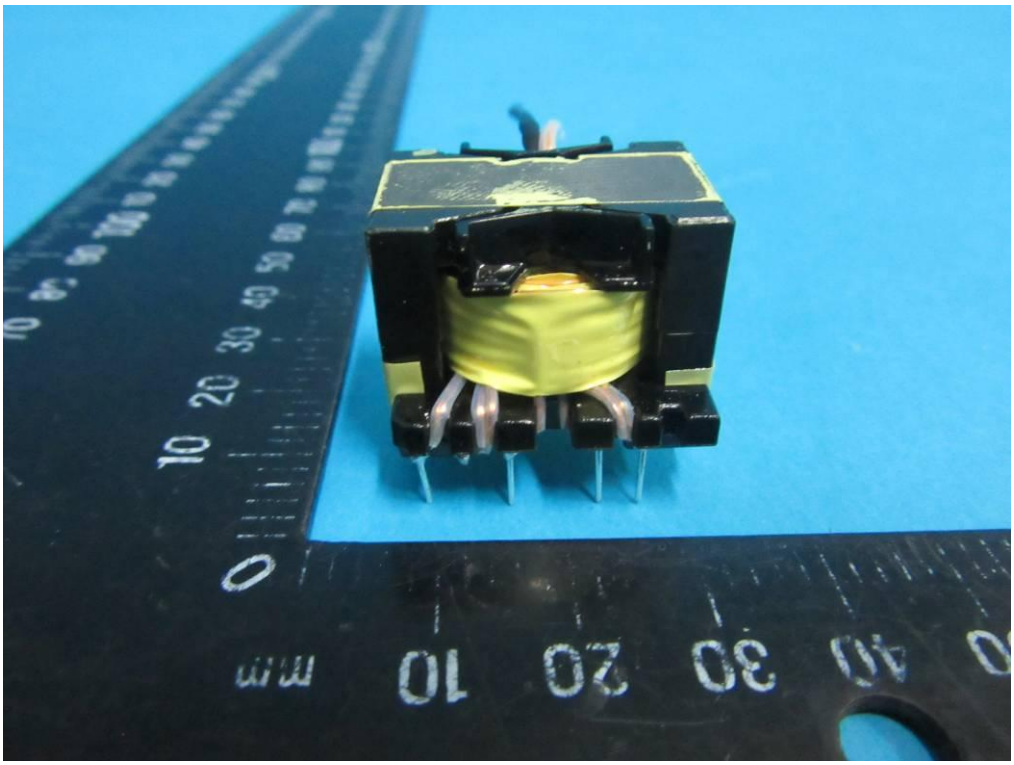


For GT*96600-*56*** (Transformer)

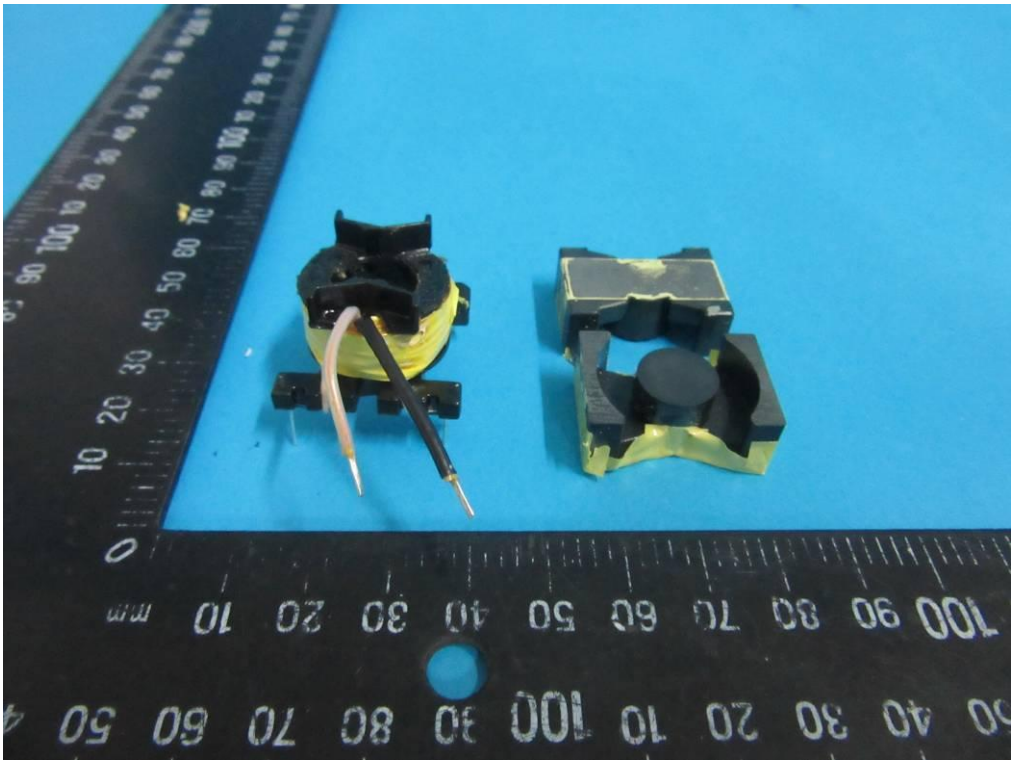


Appendix No.1: Photos of product

For GT*96600-*56*** (Transformer)

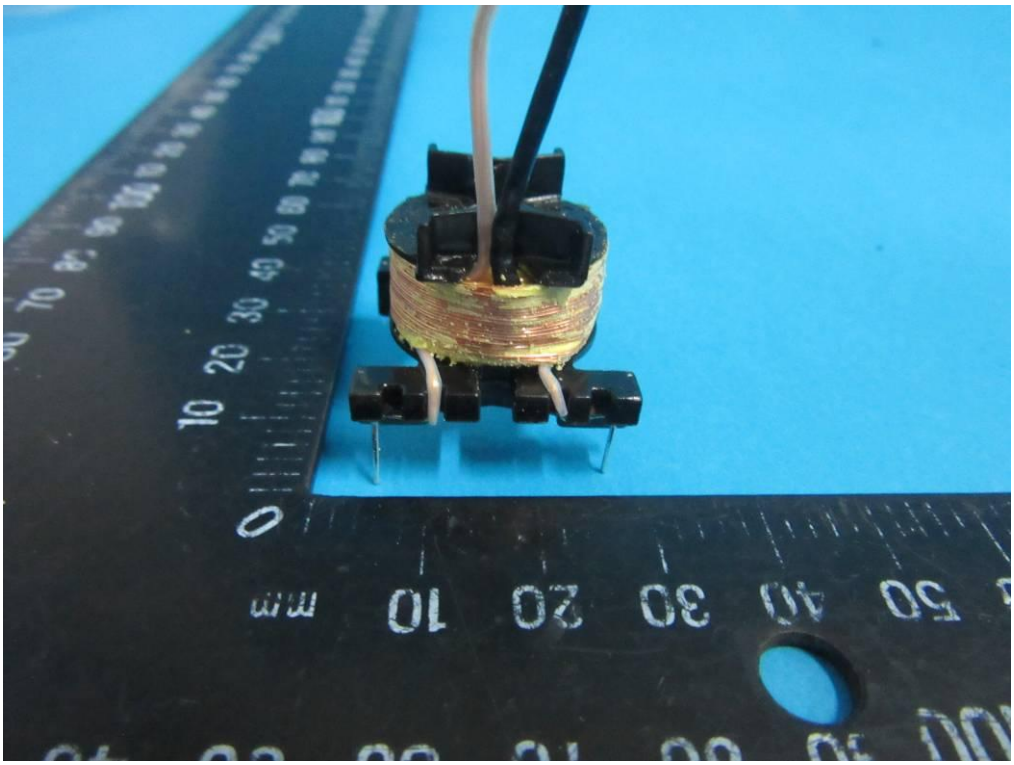


For GT*96600-*56*** (Transformer)

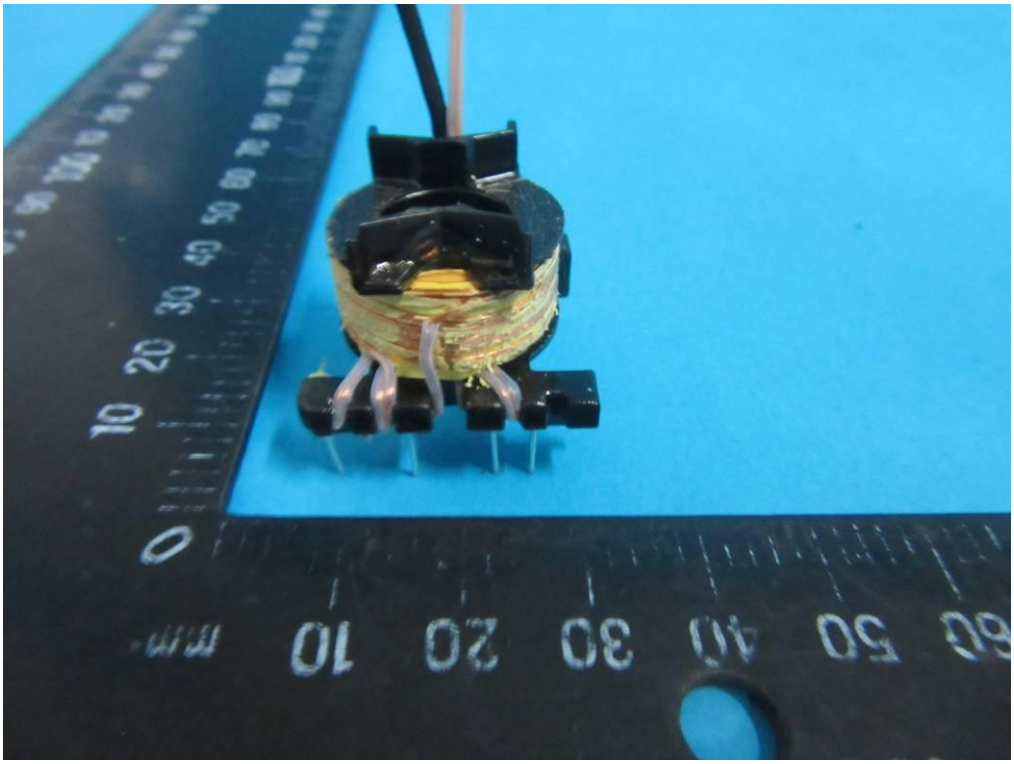


Appendix No.1: Photos of product

For GT*96600-*56*** (Transformer)

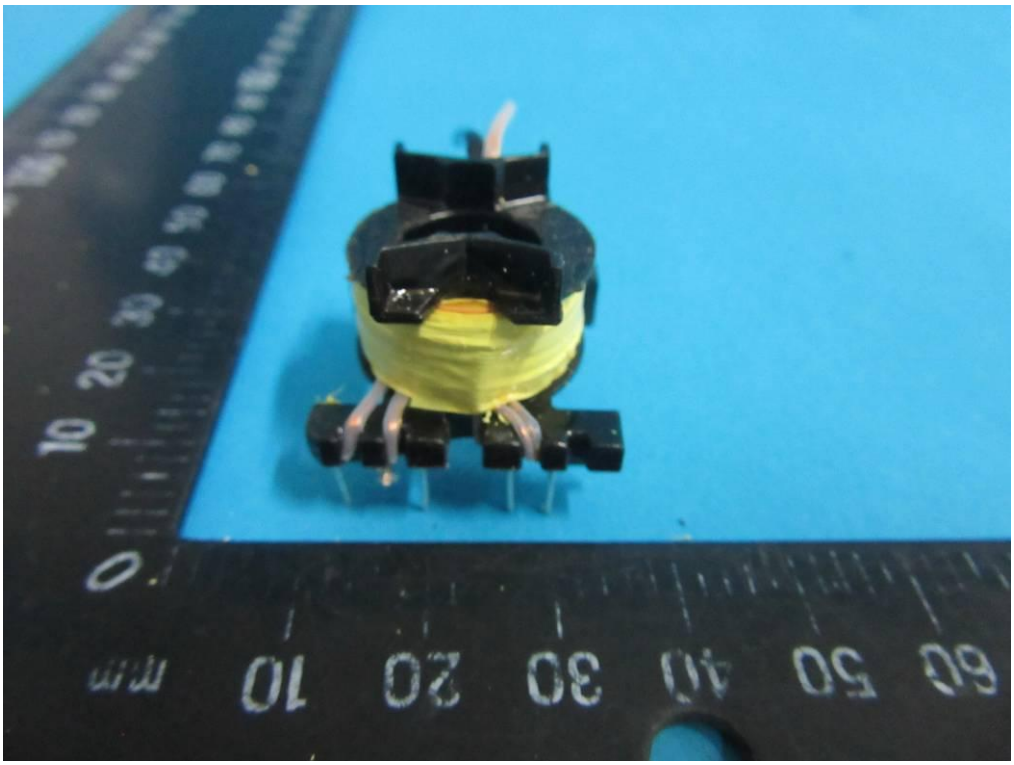


For GT*96600-*56*** (Transformer)

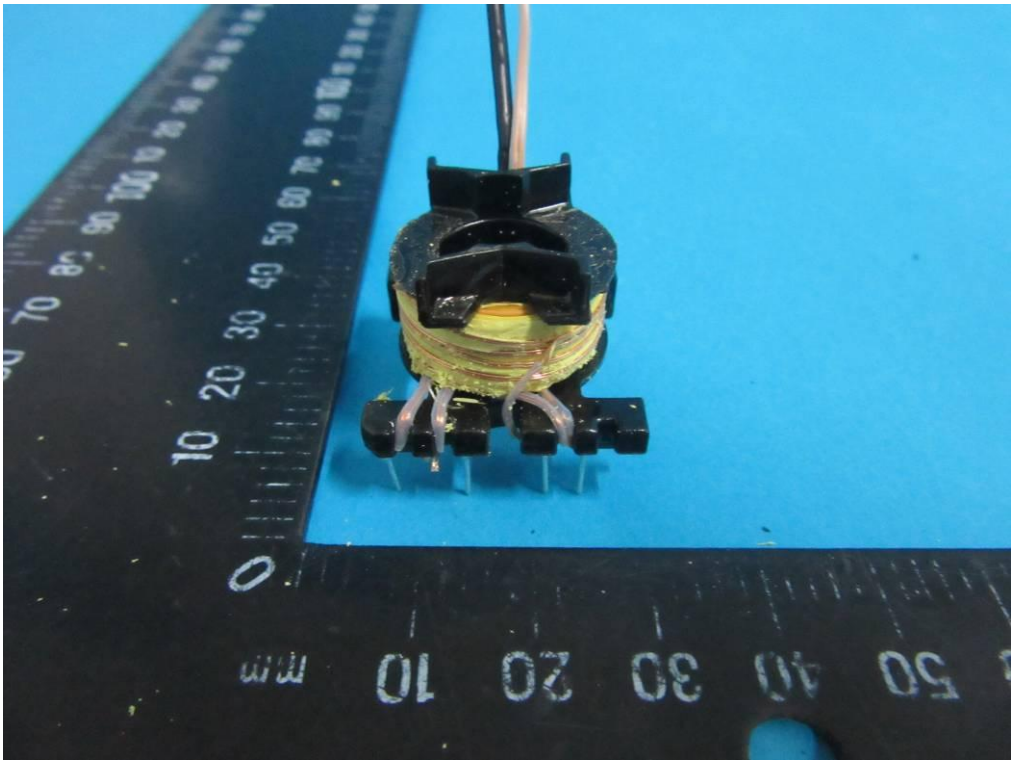


Appendix No.1: Photos of product

For GT*96600-*56*** (Transformer)

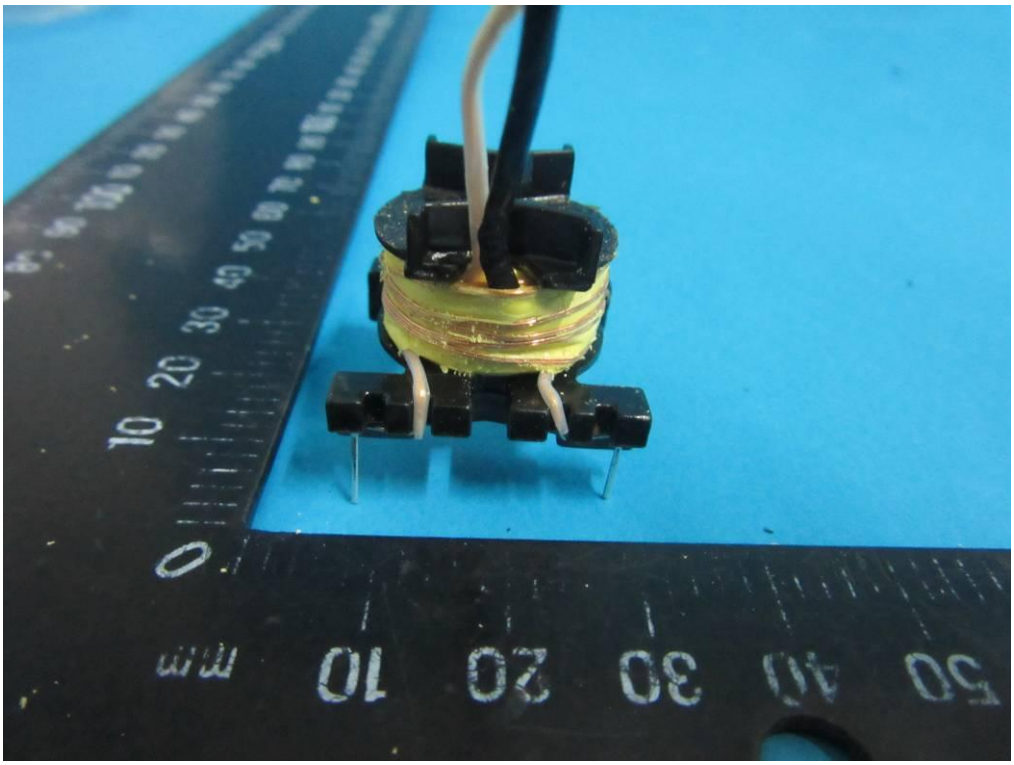


For GT*96600-*56*** (Transformer)

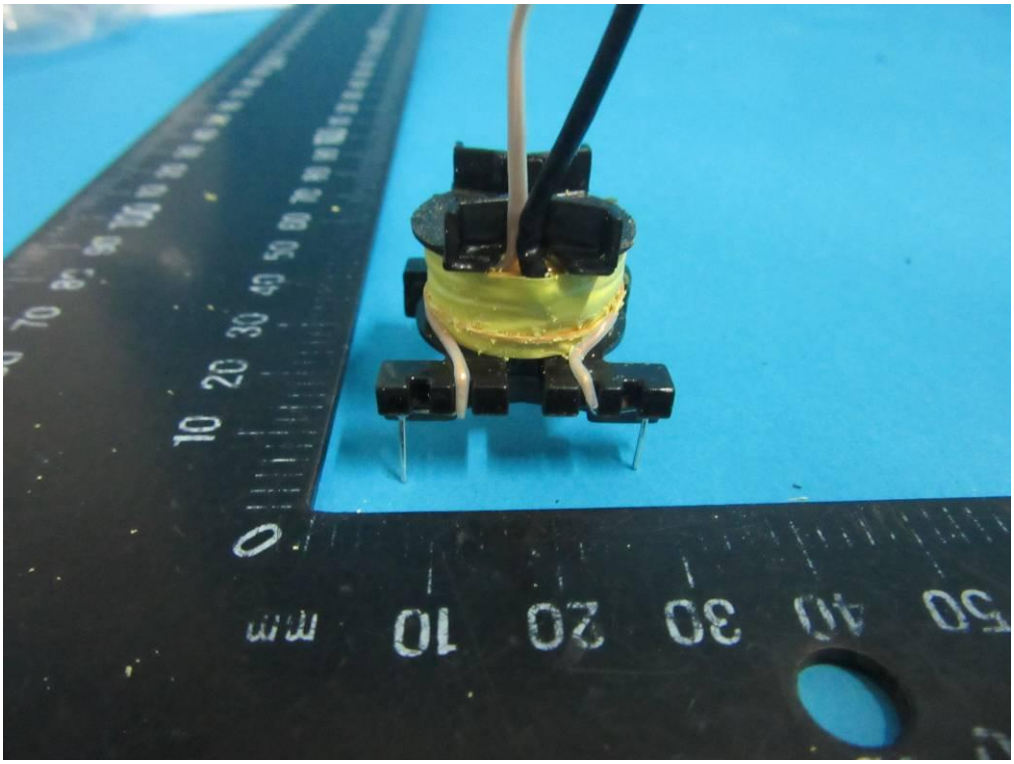


Appendix No.1: Photos of product

For GT*96600-*56*** (Transformer)

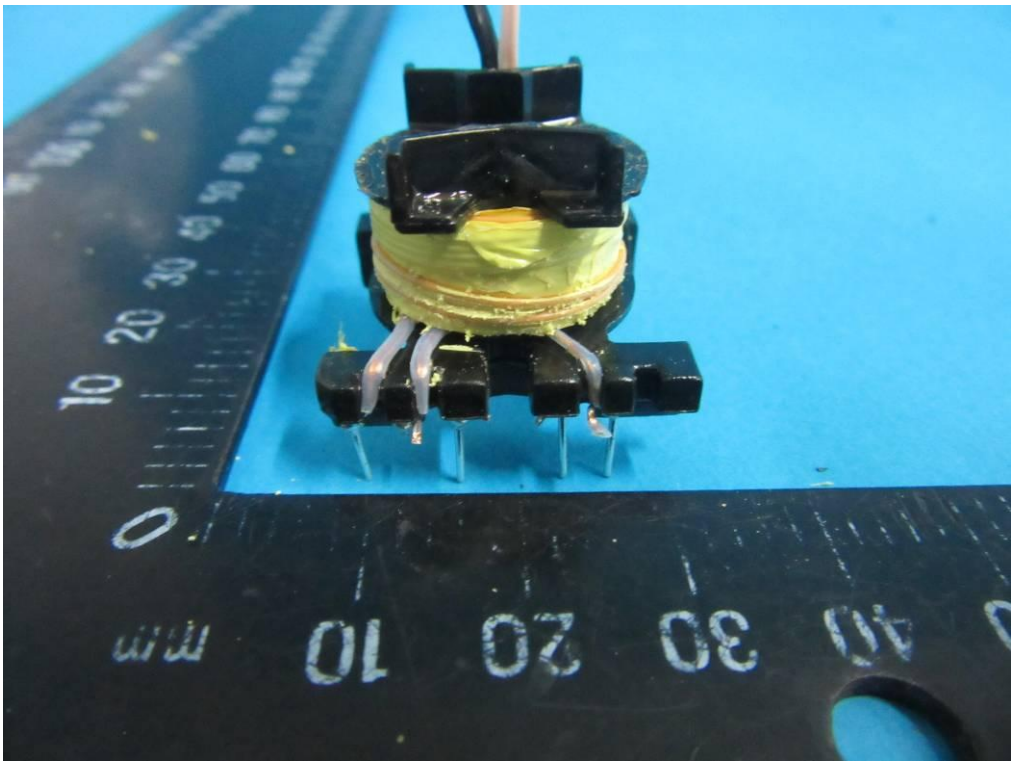


For GT*96600-*56*** (Transformer)

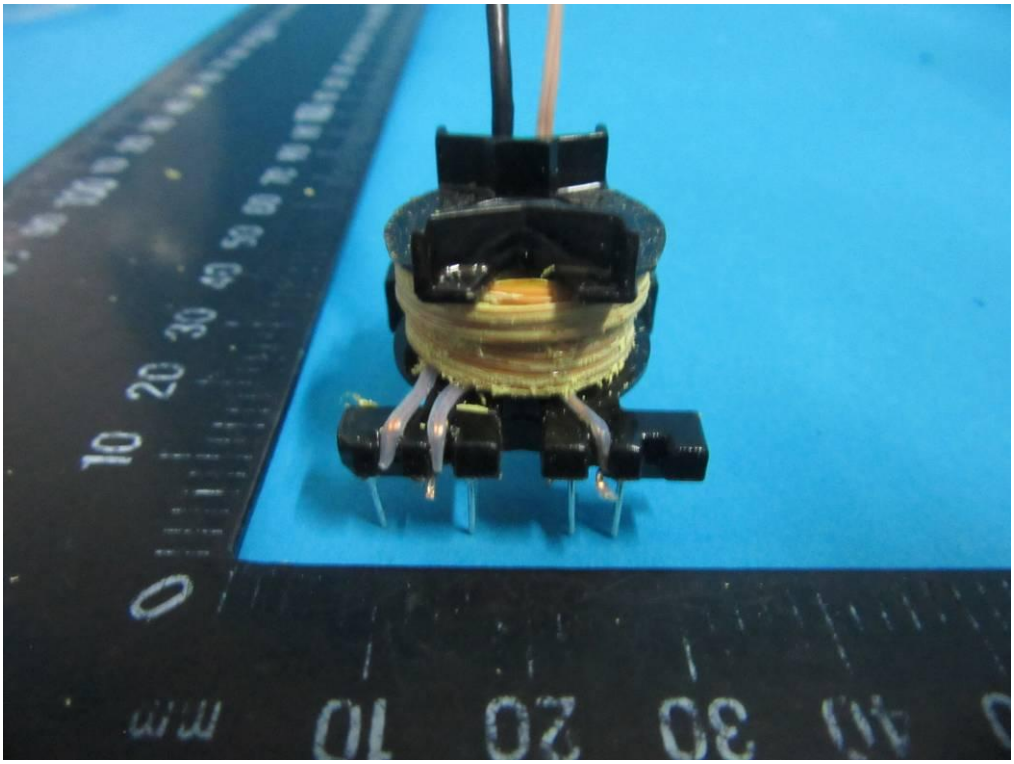


Appendix No.1: Photos of product

For GT*96600-*56*** (Transformer)

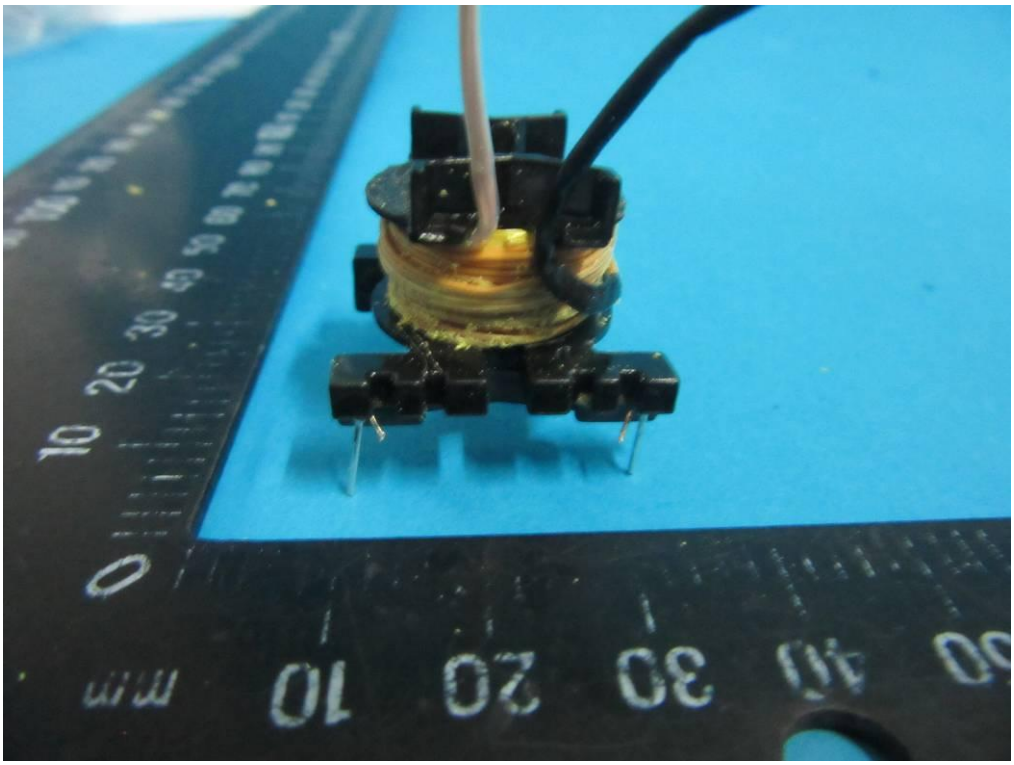


For GT*96600-*56*** (Transformer)

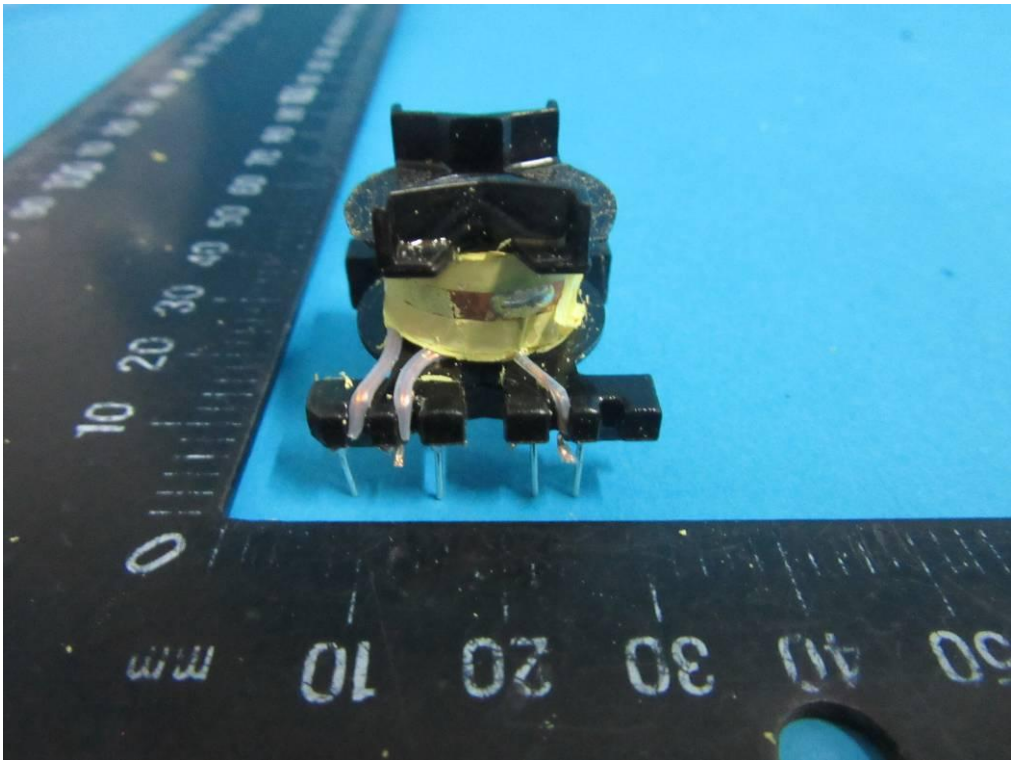


Appendix No.1: Photos of product

For GT*96600-*56*** (Transformer)

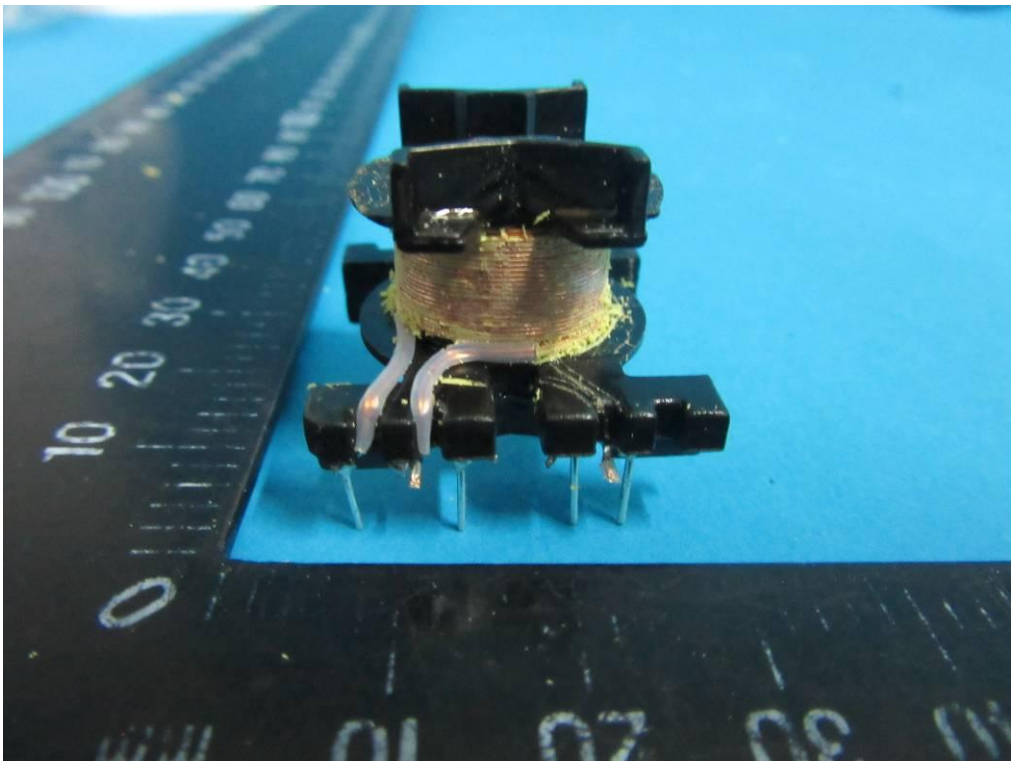
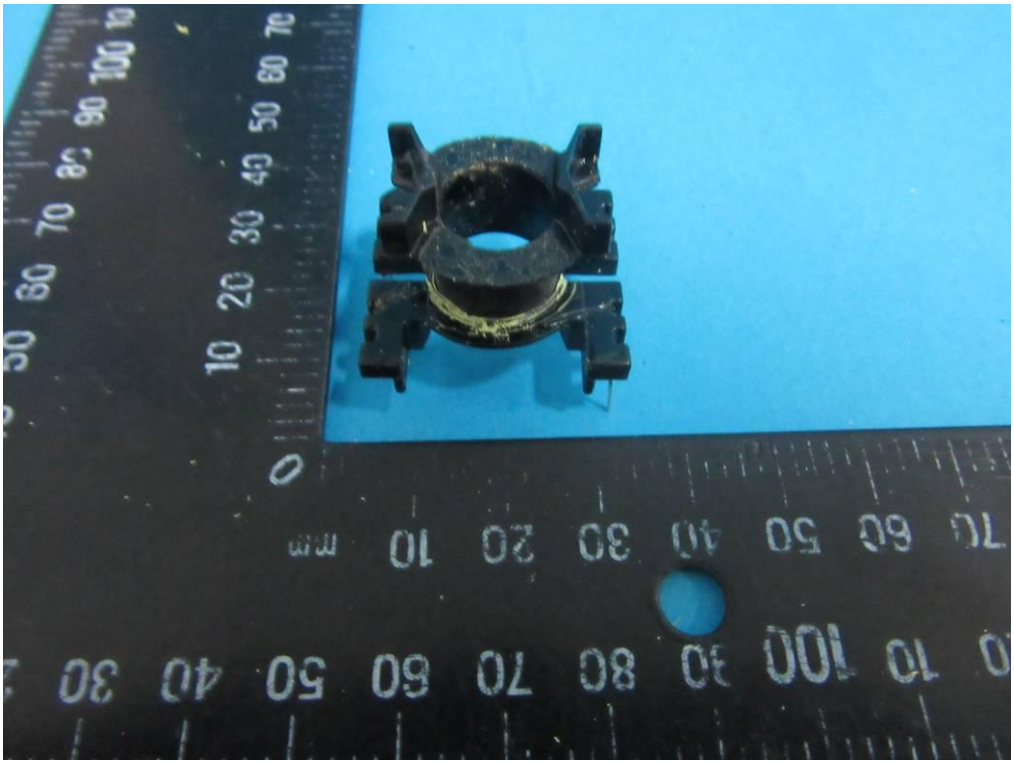


For GT*96600-*56*** (Transformer)



Appendix No.1: Photos of product

For GT*96600-*56*** (Transformer)



For GT*96600-*56*** (Transformer)