

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-46100-WW05-W2-USB***** WW is the standard output wattage, with a maximum value of "10", Each * = 0-9 or A-Z or () - or blank for marketing purposes.
Rating:	Input: 100-240V ~, 50-60Hz, 0.5A Output: 5.0Vdc, Max 2.0A
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.

Prepared by: Nat Liu/ Amos Chen

Reviewed by: Kyle Lin

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 unit is a direct plug-in AC adapter intend for ITE equipment. All electrical components are mounted on PWB and housed within plastic enclosure which secured by ultrasonic welding. The direct plug-in unit employs input plug (NEMA 1-15P) and output with USB port.

Model Differences

N/A

Technical Considerations


- Equipment mobility : direct plug-in
- 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% (manufacturer declared)
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class II (double insulated)
- Considered current rating of protective device as part of the building installation (A) : 20A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : up to 2000 meters
- Altitude of test laboratory (m) : less than 2000 meters
- Mass of equipment (kg) : Approx. 0.0459kg
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40°C
- The means of connection to the mains supply is: Pluggable A (DPIU)
- The product is intended for use on the following power systems: TN

- The equipment disconnect device is considered to be: Plug
- The product was investigated to the following additional standards: The blade dimension was evaluated to be complied with NEMA configurations in accordance with Wiring Devices - Dimensional Specifications, ANSI/NEMA WD6.
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: CY1 secondary
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): USB port
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual

Additional Information

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
Power rating - Class II symbol	Symbol for Class II construction  (60417-2-IEC-5172)
LPS Mark (Optional)	LPS or Limited Power Source

Special Instructions to UL Representative

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.

Production-Line Testing Requirements

Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
All models	T1	--	Primary/ secondary	300 0	4242	1

Earthing Continuity Test Exemptions - This test is not required for the following models:

All models

Electric Strength Test Exemptions - This test is not required for the following models:

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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:

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Sample and Test Specifics for Follow-Up Tests at UL

Model	Component	Material	Test	Sample(s)	Test Specifics
--	--	--	--	--	--

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 and plug holder material	SABIC INNOVATIVE PLASTICS B V (E45329)	SE1X(GG)(f1)	Rated V-1, 105 degree C min. Minimum 1.7 mm thickness. Two pieces construction, secured together by ultrasonic welding, See Enclosure/Diagram ID 4-02 for details.	QMFZ2	UL	4-02
02. Input Blades	Interchangeable	--	Non-polarized, solid copper or copper alloy, NEMA plug type 1-15P, integrally molded on Enclosure, from any point of either blade to the plug face section of the edge is spaced minimum 5.1 mm perimeter, see supplement 4-04 For details.	--	--	4-04
03. Label	Interchangeable	Interchangeable	Minimum 65 degree C. Suitable for its application surface.	PGDQ2, PGJI2	UL	
04. PWB	Interchangeable	Interchangeable	V-0, minimum 130 degree C.	ZPMV2	UL	
05. Fuse Resistor (RF1)	Shenzhen Great Electronics Co Ltd (E301541)	RXF-1W	Rated 2ohm, 1W	FPEW2	UL	
05a. Fuse Resistor (RF1) (Alternate)	Anhui Changsheng Electronics Co Ltd (E306095)	RXF-1W	Rated 2ohm, 1W	FPEW2	UL	
06. Bridge Diode (BD1)	Interchangeable	Interchangeable	Rated minimum 1A, minimum 800 V.	--	--	
07. Storage Capacitor (C1,C2)	Interchangeable	Interchangeable	Rated minimum 400 V, max. 10uF, min. 105 degree C, provided with integral pressure relief	--	--	
08. Transformer (T1)		XF00950	Class B, See Enclosure / Diagram ID 4-01 for	--	--	4-01

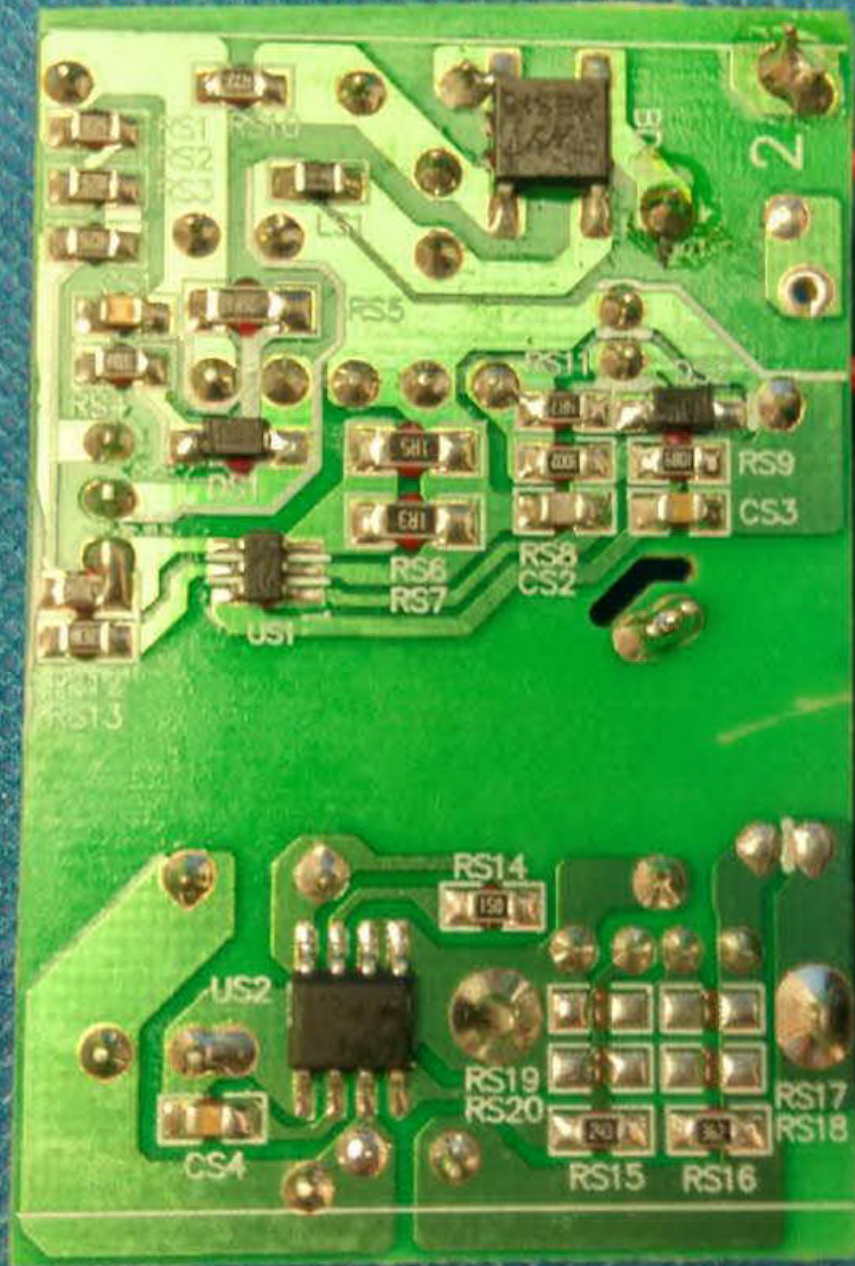
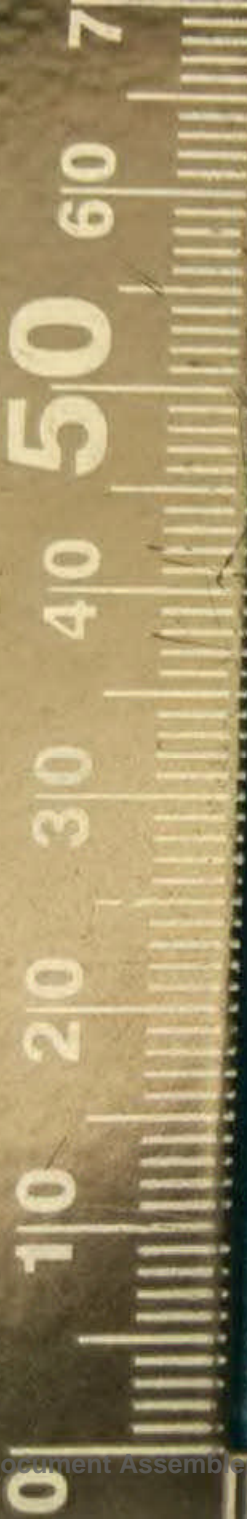
			construction details.			
08-01. Insulation system for Transformer (T1)		130-1	Insulation system Class B ,130 degree C,	OBJY2	UL	
08-02. Core	Interchangeable	Interchangeable	EE type, Ferrite, dimension 13.5 mm by 12.5mm by 6.0mm	--	UL	
08-03. Coil	Interchangeable	Interchangeable	Copper wire, Min. 130 degree C	OBMW2	UL	
08-04. Bobbin	Chang Chun Plastics Co., Ltd. (E59481)	T375J	V-0, 150 degree C, Phenolic, thickness 0.75mm minimum	QMFZ2	UL	
08-04a. Bobbin (Alternate)	SUMITOMO BAKELITE (E41429)	PM-9820	V-0, 150 degree C, Phenolic, thickness 0.7mm minimum	QMFZ2	UL	
08-05. Tubing/Sleeving	Great Holding Industrial Co. Ltd. (E156256)	TFL, TFS, TFT	Rated 200 degree C, VW-1.	YDPU2	UL	
08-06. Triple Insulated Wire	Great Leoflon Industrial Co. Ltd. (E211989)	TRW(B)	130 degree C, Class B	OBJT2	UL	
08-07. Varnish	John C. Dolph Co. (E317427)	BC-346A	Rated minimum 130 degree C.	OBOR2	UL	
08-07a. Varnish (Alternate)	Elantas Electrical Insulation Elantas Pdg Inc (E75225)	V1630FS	Rated minimum 155 degree C.	OBOR2	UL	
08-08. Insulation Tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD) (E17385)	1350T-1 (b)	130 degree C.	OANZ2	UL	
08-08a. Insulation Tape (Alternate)	BONDTEC PACIFIC CO LTD (E175868)	370S (b)	130 degree C.	OANZ2	UL	
09. Internal Glue Materials	Interchangeable	Interchangeable	Rated V-2 minimum.	QMFZ2	UL	
10. Current sense	Interchangeable	Interchangeable	RS6 Rated 1.3 ohm, 1/4W	--	--	

resistor (RS6,RS7)			RS7 Rated 1.5 ohm, 1/4W.			
11. Bridge Capacitors (CY1) (optional)	Success Electronics Co Ltd (E114280)	SE, SB	Max. 1000pF, min. 250 Vac, 125 degree C, Y1 type	FOWX2	UL	
11a. Bridge Capacitors (CY1) (optional) (Alternate)	Walsin Technology Corp (E146544)	AH Series	Max. 1000pF, min. 250 Vac, 125 degree C, Y1 type.	FOWX2	UL	
11b. Bridge Capacitors (CY1) (optional) (Alternate)	JUHONG ELE CO (E253194)	JB	Max. 1000pF, min. 400 Vac, 125degree C, Y1 type.	FOWX2	UL	
11c. Bridge Capacitors (CY1) (optional) (Alternate)	XIANGTAI ELECTRONIC (SHENZHEN) CO LTD (E319473)	YOF	Max. 1000pF, min. 400 Vac, 125 degree C, Y1 type.	FOWX2	UL	
12.Internal wire	Interchangeable	Interchangeable	Min. 80 degree C, min. 300V, Min. 24AWG, VW-1 or FT-1, mechanical secured to input blade and PCB before soldering.	AVLV2	UL	
13. Inductor (L1)	Interchangeable	Interchangeable	330 uH, min. 130 degree C. See L1 spec ID 4-06 for construction details.	--	--	4-06
14.MOSFET(Q1)	Interchangeable	Interchangeable	Rated 4.0A, min.600Vac	--	--	

Enclosures

<u>Type</u>	<u>Supplement Id</u>	<u>Description</u>
Photographs	3-01	Overall view I
Photographs	3-02	Overall view II
Photographs	3-03	Internal view
Photographs	3-04	PCB component view
Photographs	3-05	PCB trace view
Photographs	3-06	Transformer top view
Photographs	3-07	Transformer bottom view
Diagrams	4-01	Transformer T1 specification
Diagrams	4-02	Enclosure drawing (unit: mm)
Diagrams	4-04	Input blade specification
Diagrams	4-06	L1 spec
Schematics + PWB	5-01	PWB layout







SPECIFICATION

规格书

CUSTOMER: 客戶		MODEL NO.: 型 號		DATE: 日 期	MAR 24, 2015
PART NO.: 料 號	XF00950	DESIGN NO.: 編 號	FLX-540	SIZE: 規 格	EE-16

2.WINDING ORDER:

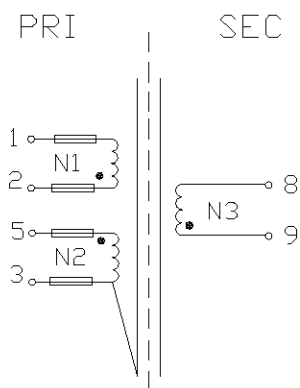
卷繞順序:

WINDING 繞 組	始 端		終 端		WIRE 銅線線徑 1UEW	WDG. TURNS 卷 繞 圈 數	槽牆膠帶規格		鐵氟龍套管		線頭線尾膠帶 (mm)		TAPE 膠 帶	REMARK 備 註
	PIN	位置	PIN	位置					S	F	規格用量 (0.025*7mm)			
N1	2		1		0.25mm*1P	70Ts			#28L	#28L				密繞
N2	5		3		0.25mm*1P	13Ts			#28L	#28L			3Ts	疏繞 一層
N3	9		8		TEX-E0.8mm*1P	5Ts							3Ts	密繞

3.SCHEMATIC:

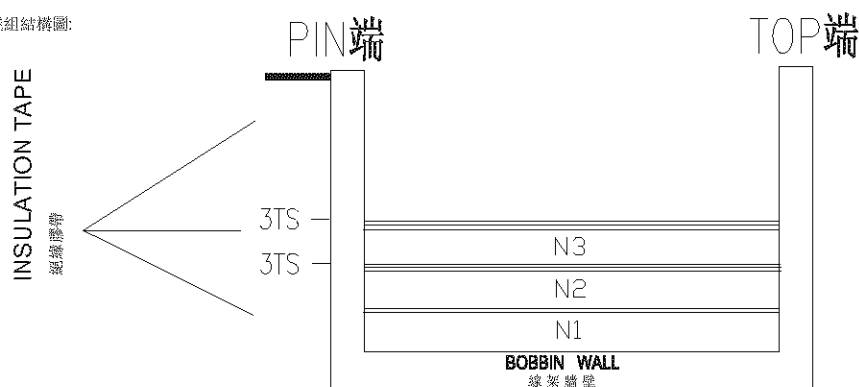
線路圖:

- START
□ TUBE



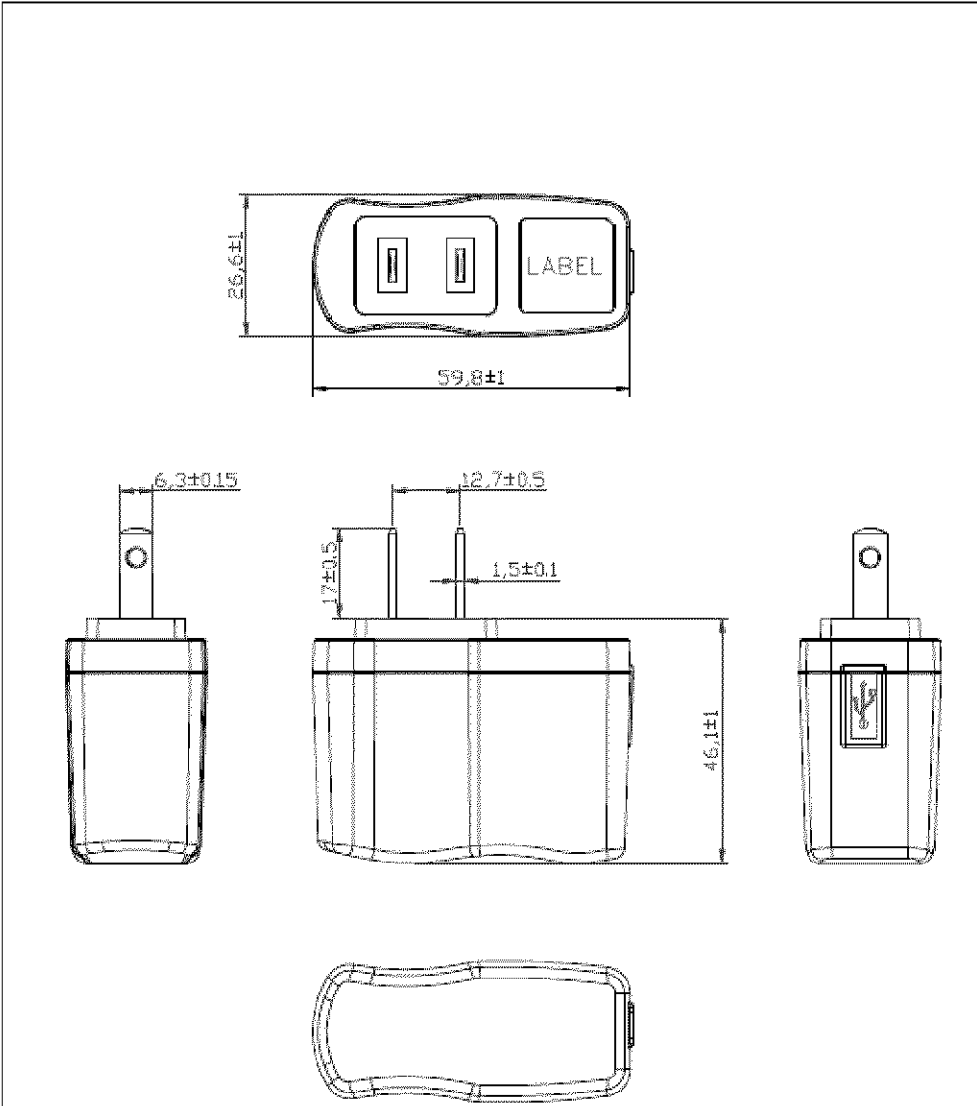
4.WINDING CONSTRUCTION:

繞組結構圖:



				TEXT/ 內容:				Sheet / 頁次
								第 5 頁, 共 9 頁
				Drawing By 制 圖	Designed By 設 計	Reviewed By 審 查	Approved By 核 準	Revision 版本號
No.	REVISION	SIGN	DATE	唐建军	唐建军	MXY	MXY	A0

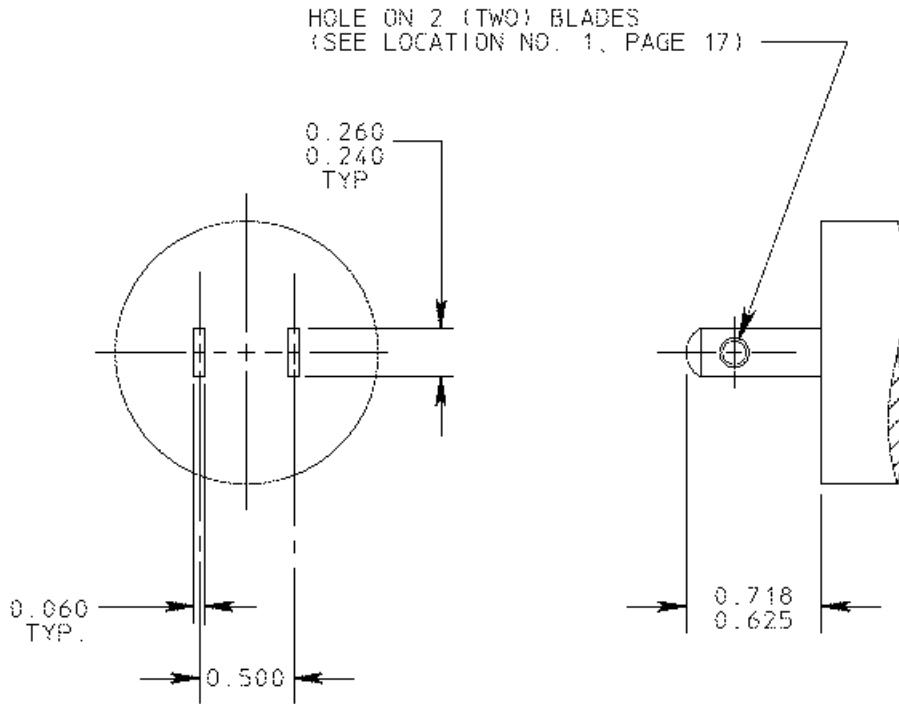
Att.2



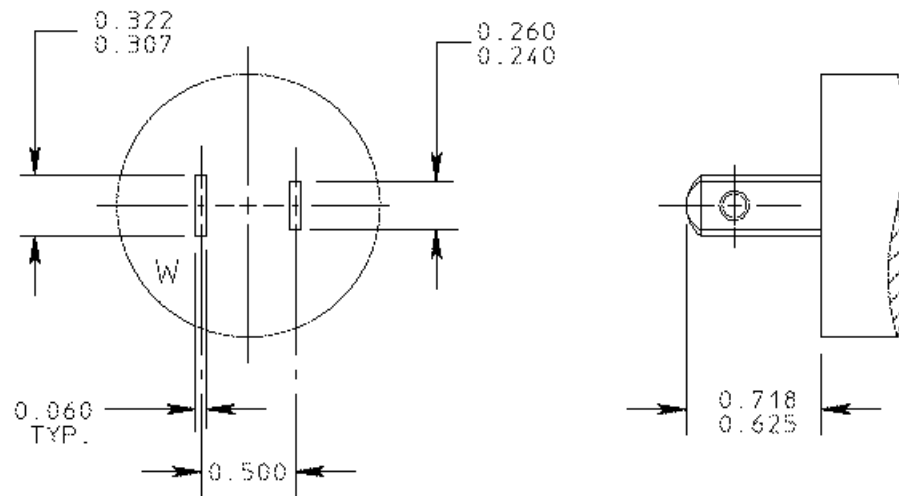
TOLERANCE				
DESIGNED	CHECKED	APPROVED		
LQiang	Dragon	LNB		
			UNITS	mm
			SCALE	
TITLE				DATE
OUTDRAWING				
DRAWING No.				10/04/08
101601-001				
DRAWING NAME				REVISION
UL 101601 USB CASE				01

FIGURE 1-15P

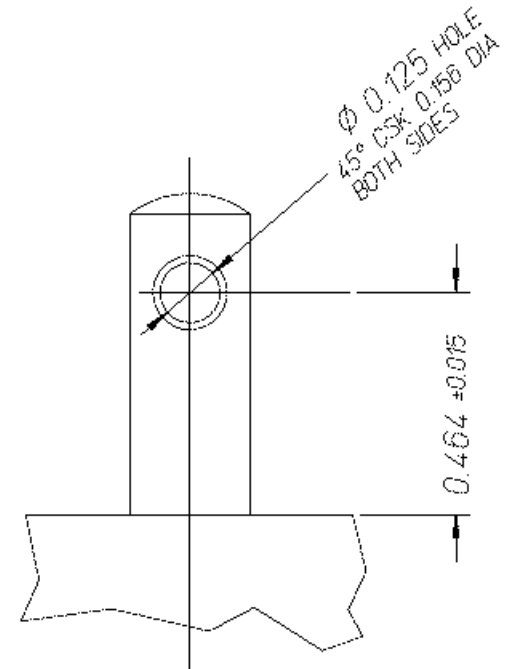
UNIT: INCH



NON-POLARIZED PLUG



POLARIZED PLUG



LOCATION # 1

NOTES:

- 1- HOLE IN FLAT BLADE IS OPTIONAL, AND IT IS INTENDED FOR MANUFACTURING PURPOSES ONLY.
HOWEVER IF USED IT MUST BE LOCATED AS PER DIMENSIONS SHOWN ABOVE.

SPECIFICATION FOR APPROVAL

CUSTOMER:				CUSTOMER'S PART NAME			
DESCRIPTION: AL0410ST-331K				DATE: 2006/8/31			
				A	4.0 (MAX)	m/m	
				B	10.5 (MAX)	m/m	
				C	26.0± 3.0	m/m	
				D	0.65 ± 0.05	m/m	
1ST COLOR		2ND COLOR		3RD COLOR		4TH COLOR	
(2) ELECTRICAL REQUIREMENTS				(3) SCHEMATIC			
L	330 ± 10% uH	TEST FREQUENCY	0.769 MHZ				
RDC	6.5 Ω (MAX)	TEST FREQUENCY					
Q	65 (MIN)	TEST FREQUENCY	0.769 MHZ				
SRF	2.6 (MIN)MHZ	TEST FREQUENCY					
IDC	137 (MAX) mA	TEST FREQUENCY					
(4) TEST INSTRUMENTS							
<input checked="" type="checkbox"/> HP4285A <input checked="" type="checkbox"/> HP42851A <input checked="" type="checkbox"/> HP4291B <input checked="" type="checkbox"/> HP16092A <input checked="" type="checkbox"/> HP34401A <input checked="" type="checkbox"/> WK3260B				<input type="checkbox"/> HP 4285 A+HP 42851 A <input type="checkbox"/> HM2770A <input type="checkbox"/> 100-LCR <input type="checkbox"/> HP 42841A <input type="checkbox"/> CHENHWA 502BC OHM METER <input type="checkbox"/> CHM 9461 L-SRF METER			
REVISION	DRAWN BY CHECKED BY	MAT'L	SPEC.	APPROVED BY 			
		CORE		CHECKED BY 			
		TEST WIRE		DRAWN BY 			
		TEST TURNS					

EROCORE ENTERPRISE CO., LTD.



Test Record No. 1

Tests on Model GT-46100-1005-W2-USB***** is not required due to copy file