

harvest

laboratories

Harvest laboratories limited
Unit 16A, 9 Laidlaw Way
East Tamaki, Auckland
New Zealand
www.harvestlabs.com

EQUIPMENT CONFORMANCE

TEST REPORT

REPORT NO.

0220GLOGT41076_3112

STANDARD: AS/NZS 3112:2004+Amd 1:2006
Approval and test specification - Plugs and Socket-Outlets

EQUIPMENT TYPE: Direct Plug-in Power Supply with exchangeable plugs

MODEL NAME / NUMBER: GT-41076 and GTM41076

CLIENT: Globtek Inc

ADDRESS: 186 Veterans Drive,
Northvale, N.J,
U.S.A

Report No.: 0220GLOGT41076_3112 harvest laboratories template as/nzs3112 2007 v1.0	Tested By: Venu Pothineni Gavin Deng Test date: 20-01-2007	Approved By: M Garwood Report Date: 20-02-2007	Page: 1 of 15
---	--	---	---------------

STANDARD SPECIFICATION: AS/NZS3112:2004+Amd 1:2006


CTR#, REPORT NO:	CTR#GLO060813, 0220GLOGT41076_3112
SPECIFIC MODEL NUMBER:	GT-41076 and GTM41076
SERIAL NUMBER:	GT-41076: WR9QE500LRP-N GTM41076: WR9QB1000KCN-N-MED
DEVICE DESCRIPTION:	Direct Plug-in Power Supply with exchangeable plugs
EQUIPMENT CLASS:	CLASS II, HAZARDOUS, SELV
SPECIFIC TEST INFORMATION OR DEVIATIONS FROM TEST METHOD:	There were no deviations from the test method
STATEMENT OF COMPLIANCE:	COMPLIES

BRIEF DEVICE DESCRIPTION:

The EUT known as 'GT-41076' consisted of a two insulated pin wall mount power supply designed for 100-240V AC 50Hz/0.3A input and 12VDC/0.5A output, directly pluggable, enclosed within a black thermoplastic enclosure.

The EUT known as 'GTM41076' consisted of a two insulated pin wall mount power supply designed for 100-240V AC 50Hz/0.5A input and 6VDC/1.0A output, directly pluggable, enclosed within a black thermoplastic enclosure.

The EUT was tested to Appendix J and examined against all mandatory requirements of the standard. The chemical composition and percentage of materials stated within this report have been provided by Globtek Inc.

TESTS CARRIED OUT BY:	Venu Pothineni Gavin Deng	DATE:	20-01-2007
SIGNATORY:	Martin Garwood 	DATE:	20-02-2007

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation. This report must not be copied unless done so in full. Results contained within this report relate only to the sample submitted to Harvest Laboratories Limited.


Report No.: 0220GLOGT41076_3112 harvest laboratories template as/nzs3112 2007 v1.0	Tested By: Venu Pothineni Gavin Deng Test date: 20-01-2007	Approved By: M Garwood Report Date: 20-02-2007	Page: 2 of 15
---	--	---	---------------

AS/NZS 3112:2004+Amd 1:2006

Clause	Requirement - Test	Result - Remark	Verdict
APPENDIX J – EQUIPMENT WITH INTEGRAL PINS FOR INSERTION INTO SOCKET OUTLETS			

J1.0	Scope		NOTED
-------------	--------------	--	-------


J2.0	Requirements for the plug portion		
J2.1	Definition		NOTED
J2.1.1	Plug Portion		P
	Figure 2.1, including the plug pins and external dimensions of the 'maximum projection'		P
J2.2	Requirements		P
J2.2.1	Plug pins of plug portions		P
	Requirements of Clause 2.2 are applicable for pins	Refer to Clause 2.2	P
J2.2.2	Ratings and dimensions for low voltage plug portions		P
	Requirements of Clauses 2.8.1 and 2.8.4 are applicable for ratings and dimensions	Refer to Clause 2.8.1 and 2.8.4	P
J2.2.3	Internal connections for plug pins		N/A
	Requirements of Clause 2.9 are applicable	No bevels	N/A
J2.2.4	Arrangement of earthing connections for plug pins		N/A
	Requirements of Clause 2.10 are applicable	No earthing pin	N/A
J2.2.5	Configuration of plug pins		P
	Requirements of Clause 2.12.6 are applicable	Refer to Clause 2.12.6	P
J2.2.6	Tests		P
J2.2.6.1	General		P
J2.2.6.2	High voltage test		P
	Requirements of Clause 2.13.3 are applicable	Refer to Clause 2.13.3	P
J2.2.6.3	Mechanical strength of pin tests		P
J2.2.6.3.1	Tumbling barrel test		P
	3 samples tested to Clause 2.13.7.1, acc to below and shall pass through appropriate gauge	Refer to Clause 2.13.7.1	P
	a) 500 times if sample weighs < 250g		P
	b) 250 times if sample weights >250g		N/A
J2.2.6.3.2	Pin bending test		P
	3 new samples shall be tested to Clause 2.13.7.2	Refer to Clause 2.13.7.2	P
J2.2.6.4	Temperature rise test		P
	Requirements of Clause 2.13.8 are applicable	Refer to Clause 2.13.8	P
J2.2.6.5	Securement of pins of the plug portion		P
	Requirements of Clause 2.13.9 are applicable	Refer to Clause 2.13.9	P
J2.2.6.6	Tests on the insulation material of insulated pin plug portion		P
	Requirements of Clause 2.13.13 are applicable	Refer to Clause 2.13.13	P
J2.2.6.7	Equipment with integral pins intended to be supported by the contacts of a socket-outlet		P
	Torque shall be < 0.25 Nm	GT-41076 - 0.052Nm GTM41076 - 0.091Nm	P

Report No.: 0220GLOGT41076_3112  template as/nzs3112 2007 v1.0	Tested By: Venu Pothineni Gavin Deng Test date: 20-01-2007	Approved By: M Garwood Report Date: 20-02-2007	Page: 3 of 15
--	--	---	---------------


Clause	Requirement - Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

SECTION 2 – PLUGS			
-------------------	--	--	--

2.2	PLUG PINS		
2.2.1	Material of pins		P
	Examples of suitable materials		P
	a) Copper		N/A
	b) copper alloy at least 58% copper or at least 50% copper for other parts or	60% copper and 2.3% Lead and alloys	P
	c) stainless steel at least 13% chromium and no more than 0.09% carbon		N/A
2.2.2	Assembly of pins		P
	Pins shall be remain attached to the conductors even if they become detached from the body		P
2.2.3	Form of pin		P
	a) Flat pins with a radius on the end with side bevels may have a -	See Table 1 for details	P
	i) width profile with an arc on centre line of the pin of-	See Table 1 for details	P
	A) 6mm for all pins 10 and 15A plugs	See Table 1 for details	P
	B) 11mm for earth pins of 15 and 20A plugs		N/A
	ii) thickness between 0.3-0.4mm and along the pin with 0.8-1.0mm		N/A
	b) Flat pins square on the end with corner bevels and side bevels may have a -		N/A
	i) width profile square corner bevelled 0.6mm and along the pin at 0.8-1.0mm		N/A
	ii) thickness between 0.3-0.4mm and along the pins with 0.8-1.0mm		N/A
	c) Flat pins square on the end with corner bevels and a radius on the sides may have a -		N/A
	i) width profile square corner bevelled 0.6mm and along the pin at 0.8-1.0mm		N/A
	ii) thickness radius of approx half of material thickness and along the pins with 0.8-1.0mm		N/A
2.2.4	Insulation of plug pins		P
	Live parts of plug pins shall not be exposed when plug is partially or fully engaged in the socket	Live pins not exposed	P
	Compliance is checked by Figure 2.4	8.85mm	P
2.8.1	General		P
	Plug shall comply with the dimensions of Figure 2.1		P
	Distance between a live pin and edge of moulding of the plug shall not be less than 9mm	>11.0 mm	P
	No protrusion from the face shall be > 0.5mm	No protrusions	P
2.8.4	Compliance with dimensional requirements of Figure 2.1		P
	Plug pins complying with Figures a1, c, d, f or g, shall also comply with requirements of Figure 2.1 (e)	See Table 1 for details	P
	Plugs with insulated pins according to this standard need not comply with R20 +/-1.0mm	See Table 1 for details	P
2.9	Internal connections		N/A
	a) a loose terminal cannot bridge any live parts or earthing parts	No earthing pin	N/A
	b) the earthing parts shall be isolated from live parts	No earthing pin	N/A

Report No.: 0220GLOGT41076_3112  template as/nzs3112 2007 v1.0	Tested By: Venu Pothineni Gavin Deng Test date: 20-01-2007	Approved By: M Garwood Report Date: 20-02-2007	Page: 4 of 15
--	--	---	---------------

	c) the live parts shall be isolated from earthing parts	No earthing pin	N/A
2.10	Arrangement of earthing connections		N/A
	3 pin plug shall be that pin which is radial to the circle embracing the pins	No earthing pin	N/A
2.12.6	Configuration of plugs		P
	Plugs conforming to Figure 2.1 a, c, f or g shall have pins in form of Earth, neutral and active in a clockwise direction		P
2.13.2	Insulation resistance test		P
	Plug shall be measured at 500V d.c as follows:		P
	a) Between all live poles taken in pairs	>100 MOhms	P
	b) Between all live poles connected together and any external metal	No external metal	N/A
	c) Between all live poles connected together and the earthing terminal of exposed metal	No earthing pin	N/A
	d) Between all live poles connected together and a flexible electrode applied to non conducting parts		P
2.13.3	e) Between all live poles connected together and a metal foil applied at 4mm from the face of plug		P
	High voltage test		P
	Plugs shall withstand a.c voltage of value indicated in Table 2.3, between items (a) and (c) of Clause 2.13.2	Refer to Clause 2.13.2	P
	Plugs shall withstand 3.5KV a.c between items (b) and (d) of Clause 2.13.2 for 1min each		P
2.13.7.2	Plugs shall withstand 1250 V a.c between items (b) and (d) of Clause 2.13.2 (e) for 1min each		P
	Pin bending test		P
	3 new samples shall be tested as follows:		P
	Pins shall be assembled as shown in Figure 2.8		P
2.13.8	Point of application shall be 14 +/-0.5mm and the distance moved shall be 7.5 +/-0.3mm for 20cycles	Pins were not broken off	P
	Temperature rise test		P
2.13.9	Plug shall be inserted into a socket with 1.1 times rated current for 1 hr. Temp rise shall be <=45K	See Table 2 &3 for details	P
	Securement of pins		P
2.13.9.1	Movement of pins		P
	18 +/- 1N shall be applied at 40° after 1hr of preconditioned at 14+/-0.5mm distance from plug face		P
	a) in both directions the line perpendicular to plane of pin, passing through centre of the pin	See Table 4 for details	P
	b) in that plane in both directions along a line at right angles to that specified in item (a)	See Table 4 for details	P
	Max deflections shall be <=2.0mm and shall be able to insert into socket without undue force	Max deflection = 1.15mm	P
2.13.9.2	Fixing of pins		P
	60+/- 0.6N shall be applied at 50° C after 1hr of preconditioned and held for 10min. Max displacement shall be 2.4mm and shall return to 0.8mm of length as in Figure 2.1	Max deflection after the test = 0.11mm	P
	a) Pull	See Table 5 for details	P
	b) Push	See Table 5 for details	P
2.13.13	Tests on the insulation material of insulated pin plugs		P
2.13.13.1	General		P
2.13.13.2	Pressure test at high temperature		P
	1 insulated pin only shall be tested as shown in figure 2.5 for 2hr at 160° C. Pin shall be removed and cooled in 10s and insulation shall be >=50%	Insulation thickness after test 1.0mm	P

Report No.: 0220GLOGT41076_3112  template as/nzs3112 2007 v1.0	Tested By: Venu Pothineni Gavin Deng	Approved By: M Garwood	Page: 5 of 15
	Test date: 20-01-2007	Report Date: 20-02-2007	

2.13.13.3	Static damp heat test		P
	Plug pin shall be subjected to 2 cycles of 25 and 40 ^o C at 95% humidity and tested as follows:		P
	a) Insulations resistance test with Clause 2.13.2 (e)	Refer to Clause 2.13.2(e)	P
	b) high voltage test with Clause 2.13.3	Refer to Clause 2.13.3	P
	c) abrasion test with Clause 2.13.13.6	Refer to Clause 2.13.13.6	P
2.13.13.4	Low temperature test		P
	Plug pin shall be subjected to -15+/-2 ^o C for at least 24hr and tested as follows:		P
	a) Insulations resistance test with Clause 2.13.2 (e)	Refer to Clause 2.13.2(e)	P
	b) high voltage test with Clause 2.13.3	Refer to Clause 2.13.3	P
	c) abrasion test with Clause 2.13.13.6	Refer to Clause 2.13.13.6	P
2.13.13.5	Impact test at low temperature		P
	1 insulated pin only maintained at -15+/-2 ^o C for at least 24hr as shown in figure 2.6 on 40mm rubber pads and tested as follows:		P
	100g shall be allowed to fall from 100mm with 4 impacts rotating it through 90 ^o between impacts	No damage to insulation of the pin	P
2.13.13.6	Abrasion test		P
	4N shall be applied to the insulation of pin plug as shown in figure 2.7 for 20,000 operations	No damage to insulation which may affect safety	P


Report No.: 0220GLOGT41076_3112  template as/nzs3112 2007 v1.0	Tested By: Venu Pothineni Gavin Deng Test date: 20-01-2007	Approved By: M Garwood Report Date: 20-02-2007	Page: 6 of 15
--	--	---	---------------

Table 1: - Dimensional requirements of Figures 2.1 (c), (e) and (h)

Dimensions of Figure 2.1 (c)	Measured Value	Limits for <10A
A	6.31	6.35+/-0.15
C	1.60	1.63+0.15, -0.05
D	7.9	7.9+
F	17.15	17.06+/-0.4
AA (from maximum projection to centre)	20.92mm	21.9 max or 27.0min
Dimensions of Figure 2.1 (e)	Measured Value	Limits for <10A
A	10.6	8.6+
B	20.86	20+/-1.0
C	20.92	21 max
Dimensions of Figure 2.1 (h)	Measured Value	Limits for <10A
R	0.35	0.35+/-0.05
S	0.91	0.90+/-0.10
V	6.15	6+

Table 2: - Temperature Rise Test for GT-41076

Clause	Before Test (°C)	At 1.1 times Rated Current at constant temp (°C)	Temp. Rise
Temp of Pins	23	26	3

Table 3: - Temperature Rise Test for GTM41076

Clause	Before Test (°C)	At 1.1 times Rated Current at constant temp (°C)	Temp. Rise
Temp of Pins	21	27	6

Report No.: 0220GLOGT41076_3112 harvest laboratories template as/nzs3112 2007 v1.0	Tested By: Venu Pothineni Gavin Deng Test date: 20-01-2007	Approved By: M Garwood Report Date: 20-02-2007	Page: 7 of 15
---	--	---	---------------

Table 4: - Movement of Pins

Pins Side	Deflection (mm)				Limit (mm)
	A	B	C	D	
Pin	1.00	0.96	1.04	1.15	2.0

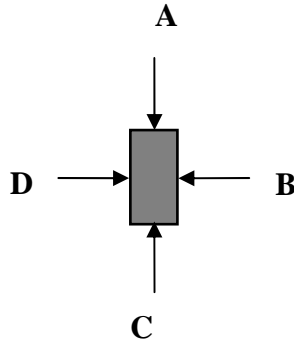
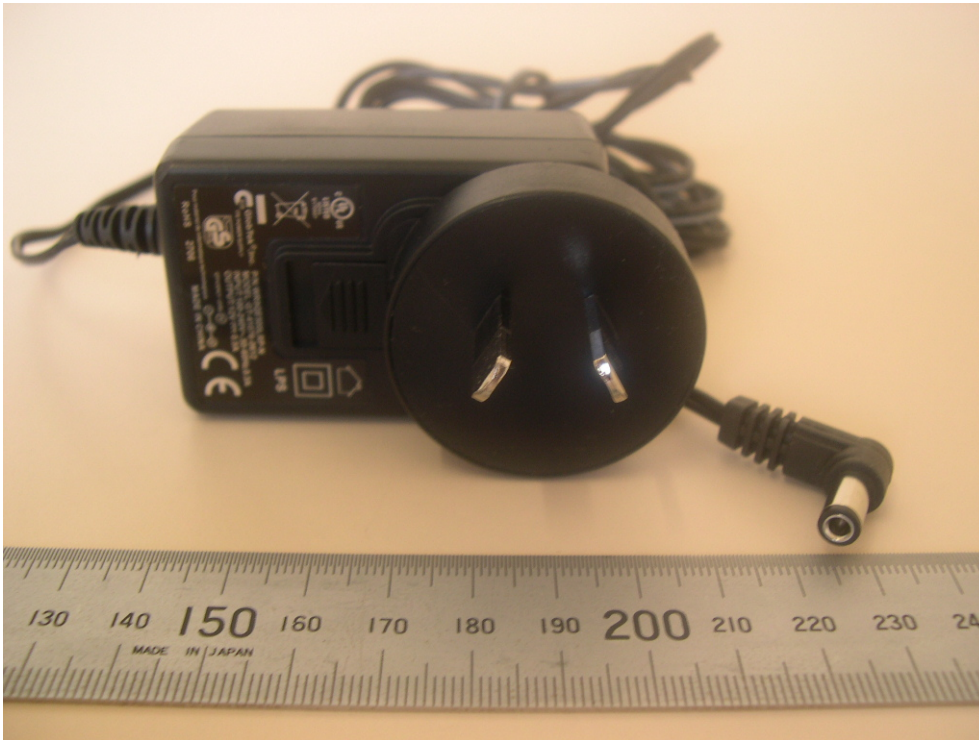


Table 5: - Fixing of Pins

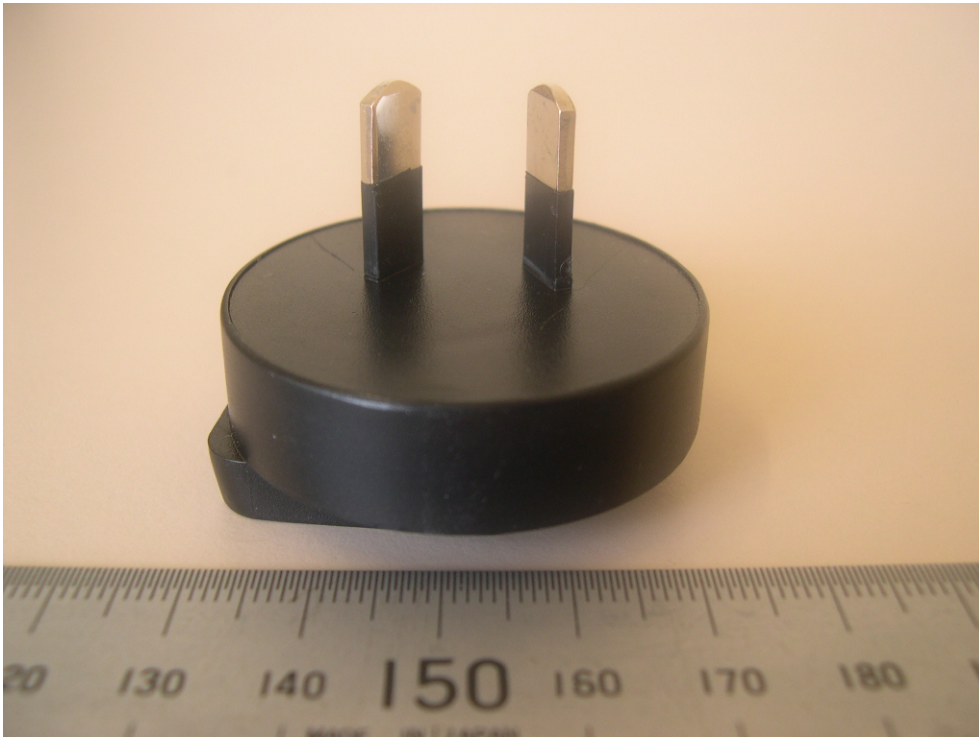
Pins	Deflection (mm)		Limit (mm)
	Push	Pull	
Pins 1	0.1	0.01	2.4
Pins 2	0.11	0.01	2.4

Appendix A: - Photographs

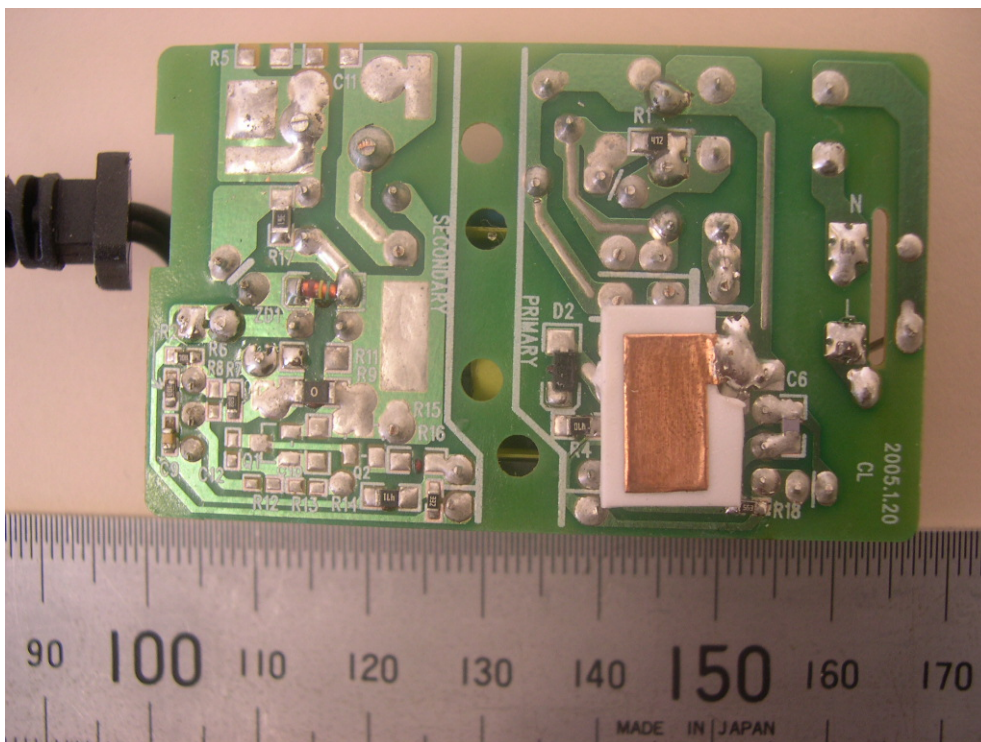
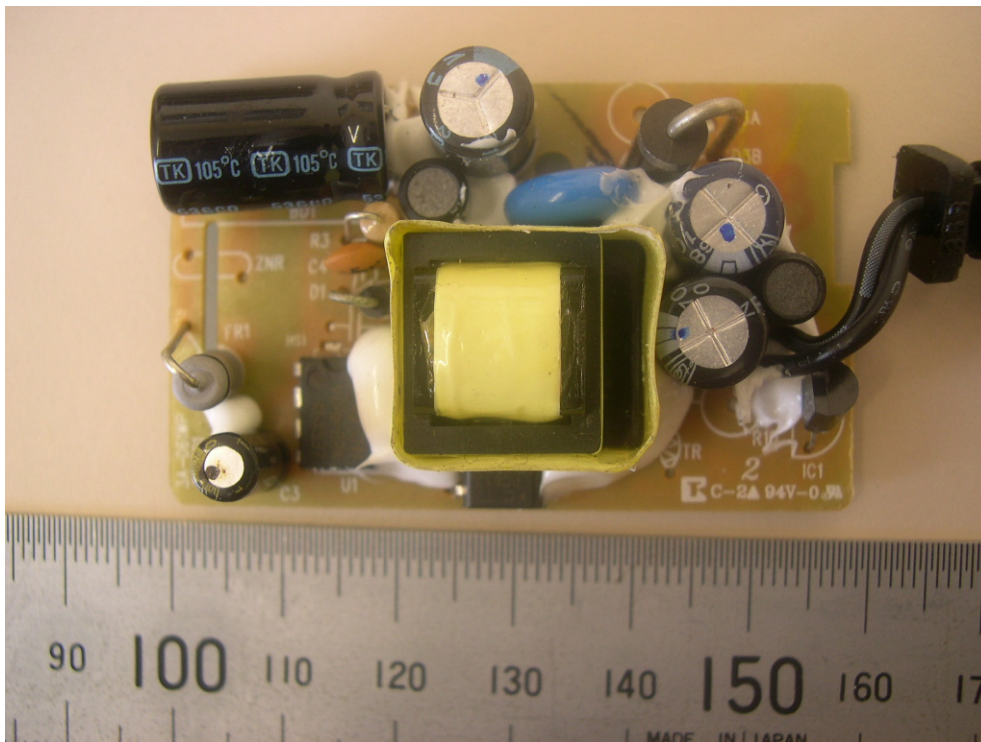
GT-41076



<p>Report No.: 0220GLOGT41076_3112 harvest laboratories template as/nzs3112 2007 v1.0</p>	<p>Tested By: Venu Pothineni Gavin Deng Test date: 20-01-2007</p>	<p>Approved By: M Garwood Report Date: 20-02-2007</p>	<p>Page: 9 of 15</p>
--	---	---	----------------------



<p>Report No.: 0220GLOGT41076_3112 harvest laboratories template as/nzs3112 2007 v1.0</p>	<p>Tested By: Venu Pothineni Gavin Deng</p> <p>Test date: 20-01-2007</p>	<p>Approved By: M Garwood</p> <p>Report Date: 20-02-2007</p>	<p>Page: 10 of 15</p>
--	--	--	-----------------------

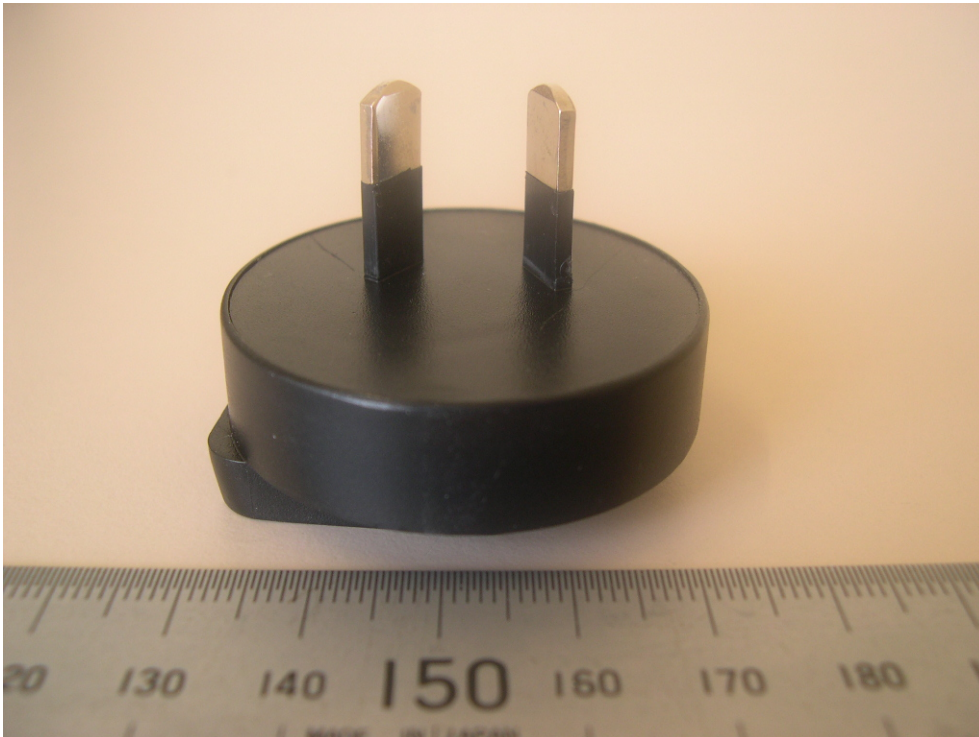


<p>Report No.: 0220GLOGT41076_3112 harvest laboratories template as/nzs3112 2007 v1.0</p>	<p>Tested By: Venu Pothineni Gavin Deng Test date: 20-01-2007</p>	<p>Approved By: M Garwood Report Date: 20-02-2007</p>	<p>Page: 11 of 15</p>
--	--	--	-----------------------

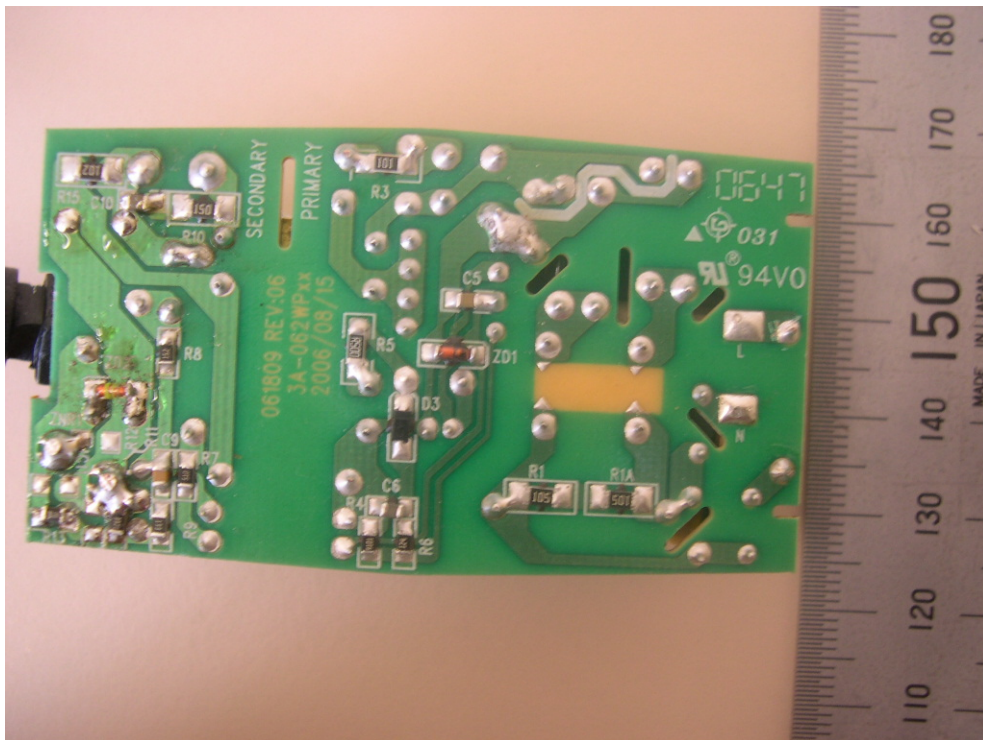
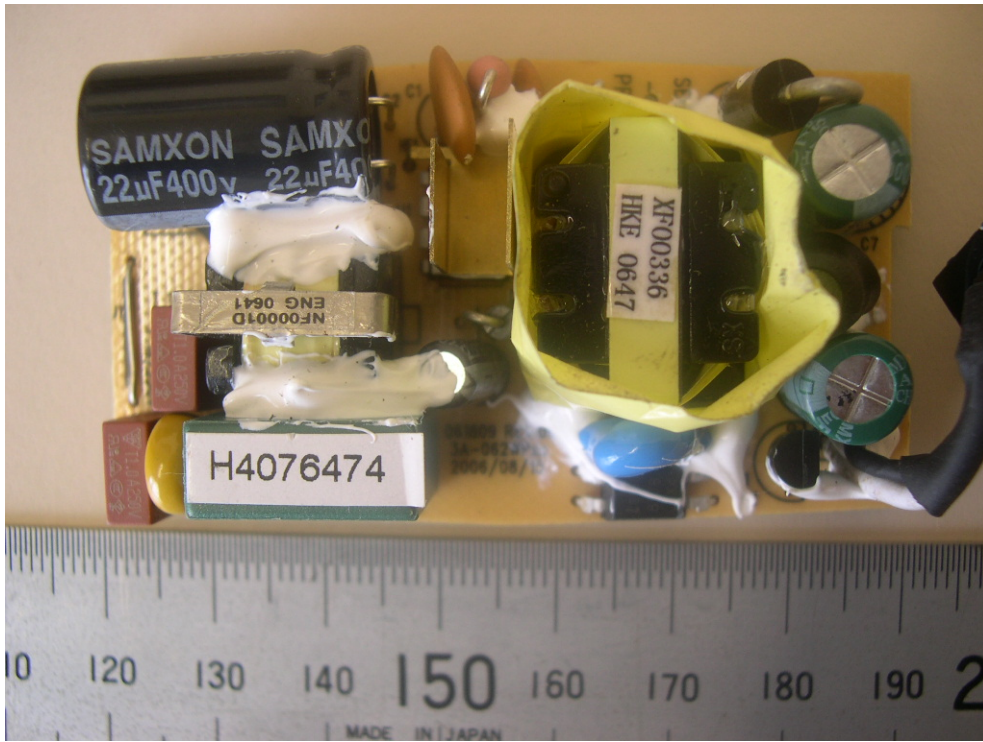
GTM41076



<p>Report No.: 0220GLOGT41076_3112 harvest laboratories template as/nzs3112 2007 v1.0</p>	<p>Tested By: Venu Pothineni Gavin Deng Test date: 20-01-2007</p>	<p>Approved By: M Garwood Report Date: 20-02-2007</p>	<p>Page: 12 of 15</p>
--	---	---	-----------------------




Report No.: 0220GLOGT41076_3112 harvest laboratories template as/nzs3112 2007 v1.0	Tested By: Venu Pothineni Gavin Deng Test date: 20-01-2007	Approved By: M Garwood Report Date: 20-02-2007	Page: 13 of 15
---	--	---	----------------



<p>Report No.: 0220GLOGT41076_3112</p> <p>harvest laboratories</p> <p>template as/nzs3112 2007 v1.0</p>	<p>Tested By: Venu Pothineni Gavin Deng</p> <p>Test date: 20-01-2007</p>	<p>Approved By: M Garwood</p> <p>Report Date: 20-02-2007</p>	<p>Page: 14 of 15</p>
--	--	--	-----------------------

Appendix B: - Uncertainty Measurements of Tests in AS/NZ 3112:2004+Amd 1:2006

Clause	Test	Equipment	Uncertainty
2.2.4, 2.8.4, 2.13.13.2, 2.13.7.2	Dimensional requirements, Dimensions of low voltage plugs, Pressure at high temperature, Pin bending test	TE062: Vernier caliper 0.1mm TE037: Thermal coupler and temperature reader $\pm 2.9^{\circ}\text{C}$	$\pm 0.1\text{mm}$ $\pm 2.9^{\circ}\text{C}$
2.13.3, 2.13.13.3, 2.13.13.4, 2.13.13.5	High voltage test, Insulation resistance test, Static damp heat test, Low temp test, Impact at low temp	TE: 035 High Voltage Test Generator TE: 267 Oscilloscope 0.577 μV TE: 267 Oscilloscope HV probe $\pm 3\%$ TE: 005 Stop Watch $\pm 1\text{s}$ TE: 030 Multimeter $\pm 2\%$ TE: 034 Insulation tester TE037: Thermal coupler and temperature reader $\pm 2.9^{\circ}\text{C}$	$\pm 3\%$ $\pm 1\text{s}$ $\pm 2\%$ $\pm 2.9^{\circ}\text{C}$
2.13.8	Temperature rise test,	TE: 030 Multimeter $\pm 2\%$ TE037: Thermal coupler and temperature reader $\pm 2.9^{\circ}\text{C}$	$\pm 2\%$ $\pm 2.9^{\circ}\text{C}$
2.13.9	Securement of pins	TE247: Force gauge compression- $\pm 1.5\text{lb}$ Tension- $\pm 0.6\text{lb}$ TE: 275 Digital force gauge	$\pm 1.5\text{lb}$ $\pm 0.6\text{lb}$ $\pm 0.5\text{N}$

Report No.: 0220GLOGT41076_3112  template as/nzs3112 2007 v1.0	Tested By: Venu Pothineni Gavin Deng Test date: 20-01-2007	Approved By: M Garwood Report Date: 20-02-2007	Page: 15 of 15
--	--	---	----------------