



Test Report: XLN-60-48

60W Constant Voltage LED Driver

■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Control Function Test

Component Stress Test

■ SAFETY & E.M.C. TEST

Safety Test

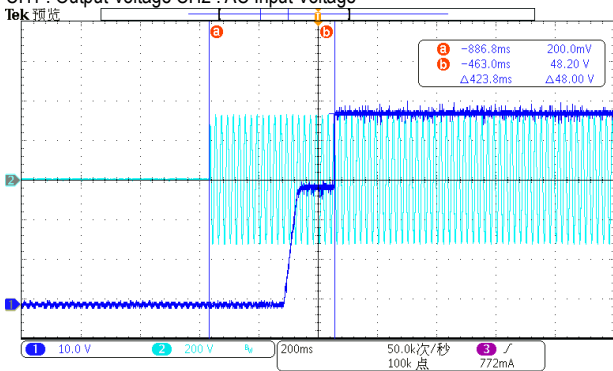
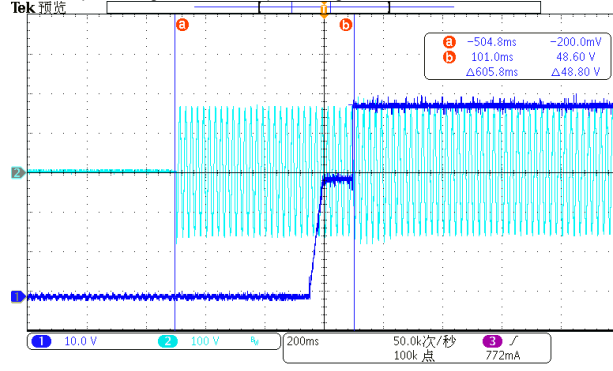
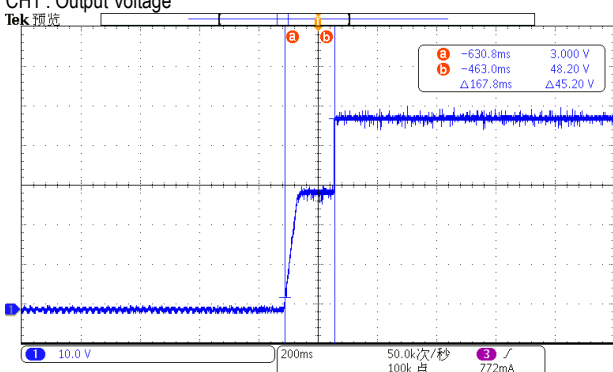
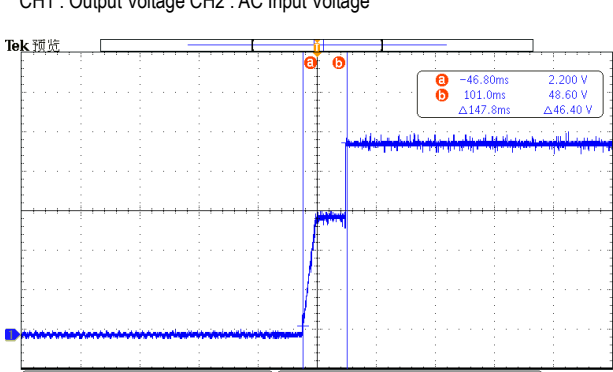
E.M.C. Test

■ RELIABILITY TEST

ENVIRONMENT TEST

DESIGN VERIFY TEST

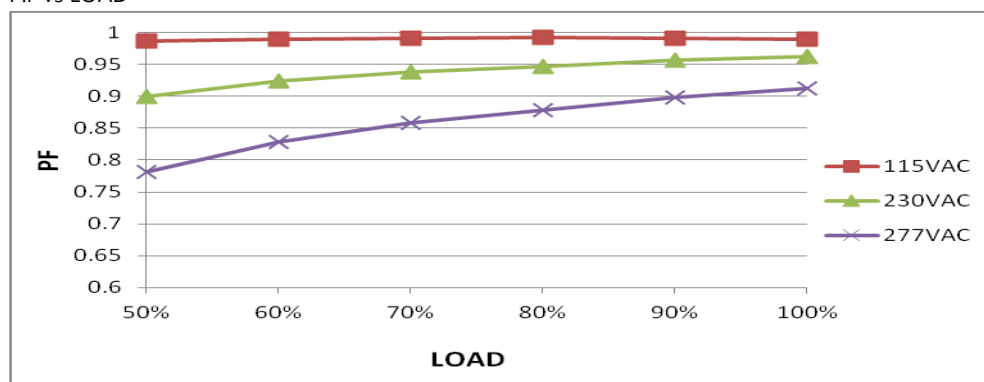
OUTPUT FUNCTION TEST

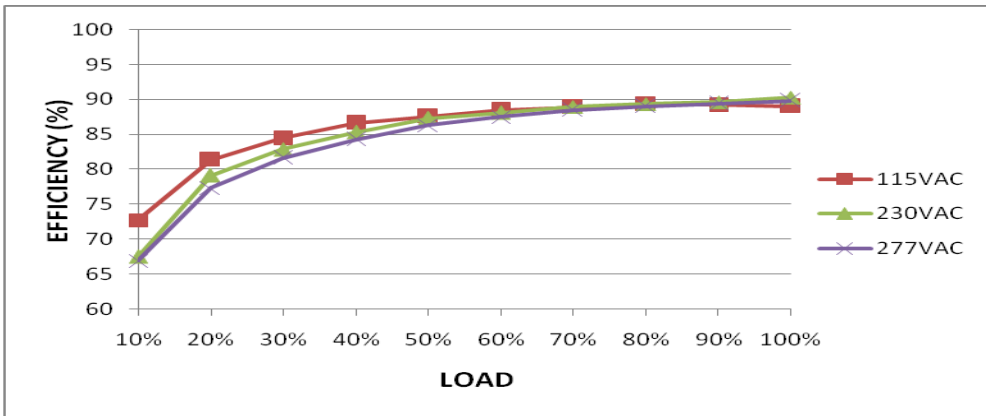
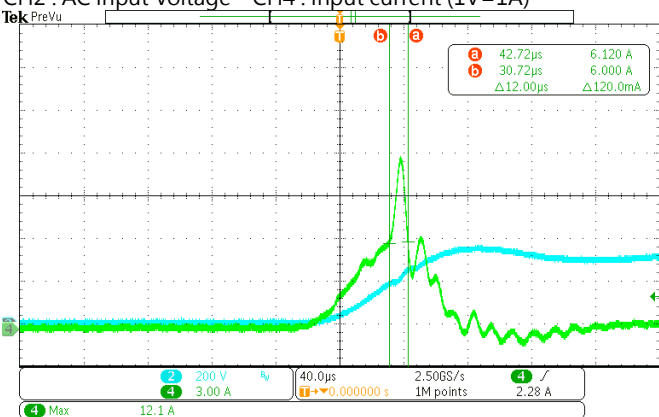
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE(Max) TOLERANCE	V1: -5% ~ +5% (Max)	I/P: 230VAC O/P:100%load Ta:25°C	V1: 0.56%~0.66%
2	OVER/UNDERSHOOT TEST	< +5%	I/P: 230VAC O/P:100% /0% Ta:25°C	0.68 %
3	SET UP TIME(Max)	230VAC/800 ms (Max) 115VAC/ 1000ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta:25°C	230VAC/423ms 115VAC/605ms
INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage  a -886.8ms 200.0mV b -463.0ms 48.20 V Δ423.8ms Δ48.00 V INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage  a -504.8ms -200.0mV b 101.0ms 48.60 V Δ605.8ms Δ48.80 V				
4	RISE TIME (Max)	230VAC/180 ms (Max) 115VAC/ 180ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P: FULL LOAD Ta:25°C	230VAC/167ms 115VAC/147ms
INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage  a -630.8ms 3.000 V b -463.0ms 48.20 V Δ167.8ms Δ45.20 V INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage  a -46.80ms 2.200 V b 101.0ms 48.60 V Δ147.8ms Δ46.40 V				

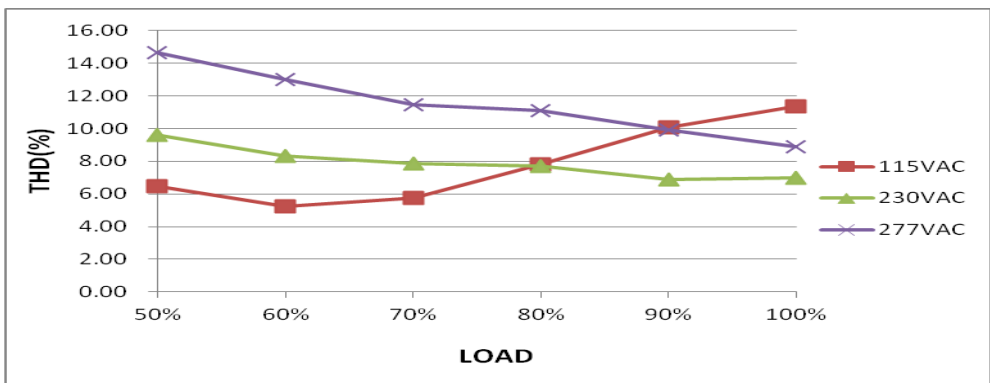
INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	110VAC~305 VAC 155VDC~400VDC	(1) I/P: TESTING O/P: FULL LOAD (2) I/P: DC TESTING (L: + N: -) O/P: FULL / 50% LOAD (3) I/P: DC TESTING (L: - N: +) O/P: FULL / 50% LOAD (4) I/P: LOW-LINE=155VDC HIGH-LINE=400VDC O/P: Dimming on/off 【for Dimming type】 Ta:25°C	(1) 97V~308V (2) 155Vdc~400Vdc/FULL LOAD 155 Vdc~400Vdc/50% LOAD (3)155Vdc~400Vdc/FULL LOAD 155Vdc~400Vdc/50% LOAD (4)OK
			I/P: LOW-LINE-3V=107 V HIGH-LINE+10V=315 V O/P:FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	TEST:OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P: 90 VAC ~305VAC O/P:FULL~MIN LOAD Ta:25°C	OK
3	INPUT CURRENT (TYP)	277VAC/ 0.30 A 230 VAC/ 0.35 A 115 VAC/ 0.75 A	I/P: 277VAC/230 VAC/115 VAC O/P:FULL LOAD Ta:25°C CCH MODE TEST	I = 0.26A/277VAC I = 0.30A/ 230VAC I = 0.59A/ 115VAC
4	POWER FACTOR(TYP)	0.95/230 VAC FULL LOAD 0.95/115 VAC FULL LOAD 0.9/277 VAC FULL LOAD	I/P: 230 VAC/115VAC/277VAC O/P:FULL LOAD Ta:25°C CCH MODE TEST	PF= 0.963/230V/100%LOAD PF= 0.991/115V/100%LOAD PF= 0.913/277V/100%LOAD

P.F vs LOAD



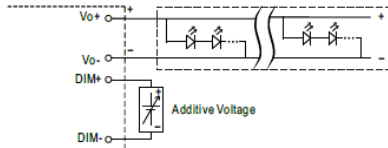
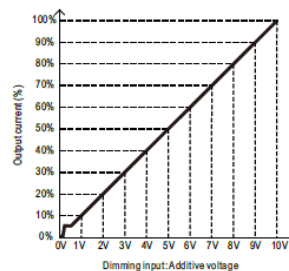
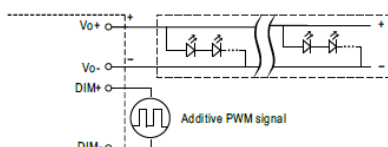
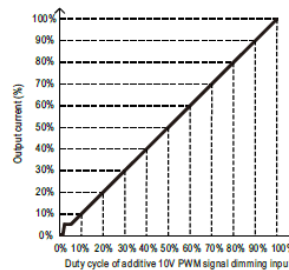
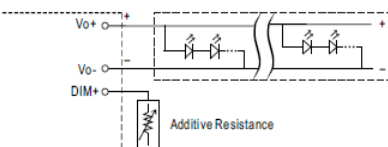
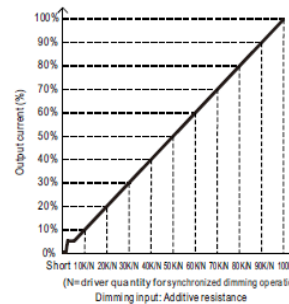
5	EFFICIENCY (TYP)	88 %	I/P: 230 VAC O/P:FULL LOAD Ta:25°C CCH MODE TEST	90.11%
EFFICIENCY vs LOAD 				
6	INRUSH CURRENT (TYP)	230 V/ 15 A COLD START (twidh=310us measured at 50% Ipeak) COLD START	I/P: 230 VAC O/P:FULL LOAD Ta:25°C CCH MODE TEST	I = 12.1A/ 230VAC T50= 12 us
INPUT=230VAC/50HZ @ FULL LOAD CH2 : AC Input Voltage CH4 : Input current (1V=1A) 				
7	LEAKAGE CURRENT	< 0.75mA / 277VAC	I/P: 277 VAC O/P:Min LOAD Ta:25°C	L-FG: 0.025mA N-FG: 0.028mA
8	TOTAL HARMONIC DISTORTION	THD< 20%(@load ≥ 60%/230VAC; @load ≥ 75%/277VAC); THD<10%@load 100%/230VAC	I/P : 230VAC/277VAC O/P : 60% /75% /100% LOAD Ta : 25°C	THD : 8.35% 230VAC 60% THD : 11.23% 277VAC 75% THD : 6.98% 230VAC 100%

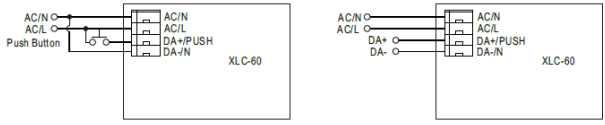
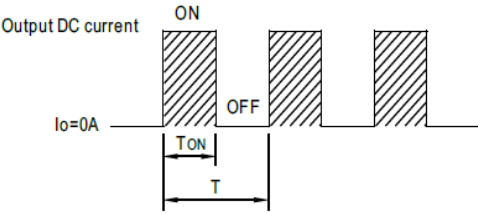
	THD vs LOAD <table><caption>THD vs LOAD Data (Estimated from Graph)</caption><thead><tr><th>LOAD (%)</th><th>115VAC THD (%)</th><th>230VAC THD (%)</th><th>277VAC THD (%)</th></tr></thead><tbody><tr><td>50%</td><td>6.5</td><td>9.5</td><td>14.5</td></tr><tr><td>60%</td><td>5.0</td><td>8.5</td><td>13.0</td></tr><tr><td>70%</td><td>5.5</td><td>8.0</td><td>11.5</td></tr><tr><td>80%</td><td>7.5</td><td>7.5</td><td>11.0</td></tr><tr><td>90%</td><td>10.0</td><td>6.5</td><td>10.0</td></tr><tr><td>100%</td><td>11.5</td><td>6.5</td><td>8.5</td></tr></tbody></table>				LOAD (%)	115VAC THD (%)	230VAC THD (%)	277VAC THD (%)	50%	6.5	9.5	14.5	60%	5.0	8.5	13.0	70%	5.5	8.0	11.5	80%	7.5	7.5	11.0	90%	10.0	6.5	10.0	100%	11.5	6.5	8.5
LOAD (%)	115VAC THD (%)	230VAC THD (%)	277VAC THD (%)																													
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90%	10.0	6.5	10.0																													
100%	11.5	6.5	8.5																													
9	STANDBY POWER CONSUMPTION	Standby power consumption<0.5W (Dimming OFF, only for standard version B/DA2-type)	I/P : 230VAC O/P : TESTING Ta : 25°C	0.4483W for B-type 0.4426W for DA2-type																												

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105%~ 200 %	I/P: 305VAC I/P: 230VAC I/P: 100VAC O/P:TESTING Ta:25°C	120.5%/ 305VAC 120.2%/ 230VAC 116.5%/100VAC PROTECTION TYPE : Hiccup mode, recovers automatically after fault condition is removed
2	OVER VOLTAGE PROTECTION	52V~63V	I/P: 305VAC I/P: 230VAC I/P: 100VAC O/P:MIN LOAD Ta:25°C	56.1V/ 305VAC 56.7V/ 230VAC 56.4V/ 100VAC PROTECTION TYPE : Shut down output voltage, re-power on to recover
3	OVER TEMPERATURE PROTECTION	NO DAMAGE	I/P: 305 VAC I/P: 100 VAC O/P:FULL LOAD	O.T.P. Active PROTECTION TYPE : Shut down output voltage, recovers automatically after fault condition is removed
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 305VAC I/P: 100 VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE PROTECTION TYPE : Hiccup mode, recovers automatically after fault condition is removed

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT									
1	DIMMING OPERATION(B-Type)	◎ B type ※ 3 in 1 dimming function - Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-: 0 ~ 10VDC, or 10V PWM signal or resistance. - Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers. - Dimming source current from power supply: 100 μA (typ.) ◎ Applying additive 0 ~ 10VDC  "DO NOT connect DIM- to Vo-"  ◎ Applying additive 10V PWM signal (frequency range 300Hz~3KHz):  "DO NOT connect DIM- to Vo-"  ◎ Applying additive resistance: 0~100k Ω  "DO NOT connect DIM- to Vo-"  Note: 1. Min. dimming level is about 8% and the output current is not defined when 0% < I_{out} < 8%. 2. The output current could drop down to 0% when dimming input is about 0kΩ or 0Vdc, or 10V PWM signal with 0% duty cycle.											
I/P : 230 VAC ; O/P : DIMMING TEST ; Ta : 25°C													
1	Resistance value	Short	10K	20K	30K	40K	50K	60K	70K	80K	90K	100K	OPEN
	Output Current	0	0.20 4A	0.25 1A	0.38 6A	0.50 9A	0.65 7A	0.80 5A	0.91 6A	1.02 8A	1.16 4A	1.253 A	1.272 A
	Output Current duty	0%	16.2 9%	20.1 0%	30.9 0%	40.7 2%	52.5 4%	64.4 2%	73.2 8%	82.2 4%	93.1 4%	100.2 4%	101.7 6%
2	Dimming value	0V	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
	Output Current	0	0.15 9A	0.27 6A	0.39 3A	0.52 2A	0.64 7A	0.78 6A	0.90 9A	1.03 5A	1.18 3A	1.265 A	1.268 A
	Output Current duty	0%	12.6 8%	22.0 7%	31.4 1%	41.7 4%	51.7 2%	62.9 0%	72.7 1%	82.8 0%	94.6 6%	101.2 0%	101.4 4%
3	Duty value	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
	Output Current	0	0.15 6A	0.27 1A	0.38 6A	0.52 0A	0.64 7A	0.77 9A	0.90 2A	1.03 1A	1.16 0A	1.253 A	1.261 A
	Output Current duty	0%	12.4 7%	21.7 1%	30.8 5%	41.6 2%	51.7 5%	62.3 4%	72.1 6%	82.5 1%	92.7 8%	100.2 4%	100.9 0%

2	DA2 type (DALI-2 digital dimming function)	⊙ DA2 type (DALI-2 digital dimming function) ※ Input wiring diagram  ※ PUSH dimming (primary side) - The factory default dimming level is at 100%. - If the push action lasts less than 0.05 sec., it will not lead to a change for the status of the driver. - Up to 10 drivers can perform the PUSH dimming at the same time when utilizing one common push button. - The maximum length of the cable from the push button to the last driver is 20 meters. <table border="1"> <thead> <tr> <th>Action</th><th>Action duration</th><th>Function</th></tr> </thead> <tbody> <tr> <td>Short Push</td><td>0.1~1s</td><td>Turn ON-OFF the driver</td></tr> <tr> <td>Double Click</td><td>Click twice in 1.5s</td><td>Set up the dimming level to 100%</td></tr> <tr> <td>Long Push</td><td>1.5~10s</td><td>Every Long Push changes the dimming direction, dimming up or down</td></tr> </tbody> </table> I/P : 230 VAC O/P : DIMMING TEST Ta : 25°C TEST RESULT : OK	Action	Action duration	Function	Short Push	0.1~1s	Turn ON-OFF the driver	Double Click	Click twice in 1.5s	Set up the dimming level to 100%	Long Push	1.5~10s	Every Long Push changes the dimming direction, dimming up or down
Action	Action duration	Function												
Short Push	0.1~1s	Turn ON-OFF the driver												
Double Click	Click twice in 1.5s	Set up the dimming level to 100%												
Long Push	1.5~10s	Every Long Push changes the dimming direction, dimming up or down												
3	PWM OUTPUT DIMMING PRINCIPLE	※ For 12V/24V/48V PWM style output dimming Dimming is achieved by varying the duty cycle of the output current.  Duty cycle(%) = $\frac{T_{ON}}{T} \times 100\%$ Output PWM frequency : 4kHz for B-Type fixed (Typ.) 3.2kHz for DA2-Type fixed (Typ.) I/P : 230 VAC O/P : FULL LOAD Ta : 25°C TEST RESULT : OK												

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q 1 Rated 800 V/11A	AC ON/OFF I/P: High-Line +3V =308V VDS: O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. I/P: Low-Line -3V = 97V O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. Ta:25°C	VDS: (1) 782V (2) 678V (3) 772V (4) 753V (5) 753V (6) 761V (7) 689V VDS: (1) 568V (2) 429V (3) 563V (4) 542V (5) 559V (6) 528V (7) 426V
2	Diode Peak Voltage	Q100 Rated 20A/600V	AC ON/OFF I/P: High-Line +3V =308 V O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. (8).NO LOAD Ta:25°C	Q101: VDS: (1) 493V (2) 498V (3) 489V (4) 485V (5) 491V (6) 489V (7) 492V (8) 488V

3	Control IC Voltage Test	U1 Rated 7V~18V U100 Rated 6V~ 75V U451 Rated 1.7V-3.6V	AC ON/OFF I/P: High-Line +3V =308 V FOR C.V MODE TYPE O/P (1) FULL LOAD (2) Output Short (3) O.L.P (4) O.V.P. (5) NO LOAD VRmin.LOW LINE (6) Dim off Ta:25°C	U1 (1) 15.1V (2) 15.1V (3) 15.2V (4) 15.2V (5) 11.8V (6) 11.6V U100 (1) 49V (2) 48.6V (3) 47V (4) 46.6V (5) 44.2V (6) 45.4V U451 <table><tr><td>FOR C.V MODE TYPE</td><td>Level</td><td>Ripple</td><td>Spike</td></tr><tr><td>FULL LOAD</td><td>3.301</td><td>0.477%</td><td>1.85%</td></tr><tr><td>Output Short</td><td>3.302</td><td>0.53%</td><td>1.09%</td></tr><tr><td>O.V.P</td><td>3.301</td><td>0.59%</td><td>0.982%</td></tr><tr><td>NO LOAD VRmin.LOW LINE</td><td>3.301</td><td>0.66%</td><td>1.03%</td></tr><tr><td>DIM OFF</td><td>3.301</td><td>0.62%</td><td>1.12%</td></tr></table>	FOR C.V MODE TYPE	Level	Ripple	Spike	FULL LOAD	3.301	0.477%	1.85%	Output Short	3.302	0.53%	1.09%	O.V.P	3.301	0.59%	0.982%	NO LOAD VRmin.LOW LINE	3.301	0.66%	1.03%	DIM OFF	3.301	0.62%	1.12%
FOR C.V MODE TYPE	Level	Ripple	Spike																									
FULL LOAD	3.301	0.477%	1.85%																									
Output Short	3.302	0.53%	1.09%																									
O.V.P	3.301	0.59%	0.982%																									
NO LOAD VRmin.LOW LINE	3.301	0.66%	1.03%																									
DIM OFF	3.301	0.62%	1.12%																									
4	Clamp Diode Peak Voltage	D10 Rated : 1000V/1A	AC ON/OFF I/P : High-Line +3V = 308 V O/P : (1) Dynamic Load 90%Duty/1KHz (2) Full load continue Ta : 25°C	(1)714V (2)682V																								
5	Buck Diode Peak Voltag MOS	Q110 Rated : 75A/85V Q111 Rated : 75A/85V	AC ON/OFF I/P : High-Line +3V = 308 V O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. Ta : 25°C	Q110 (1) 83.2V (2) 84.8V (3)83.2 V (4)84V (5)84.8V (6)83.2V (7)83.2V Q111 (1) 84.9V (2) 84.8V (3) 84.6V (4)84.8V (5)84.7V (6)84.5V (7)84.9V																								

6	Dimming MOS	Q200 Rated : 80A/60V	AC ON/OFF I/P : High-Line +3V = 308 V O/P: (1) FULL Load (2) FULL Load continue (3) Output Short (4) DIM OFF	(1)45.6A (2)1.38A (3)79.2A (4)54A
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SAFETY & EMC TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 3.75KVAC/min	I/P-O/P: 4.125 KVAC/min Ta:25°C	I/P-O/P: 2.597mA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ	I/P-O/P: 500 VDC Ta:25°C	I/P-O/P: 9999MΩ NO DAMAGE

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS C	I/P: 230VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS
2	CONDUCTION	EN55015	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab
3	RADIATION	EN55015	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab
4	E.S.D	EN61000-4-2 AIR : 8KV / Contact : 4KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A
5	E.F.T	EN61000-4-4 INPUT: 1KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A
6	SURGE	IEC61000-4-5 L-N :1KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A
7	Test by certified Lab & Test Report Prepare Any contradictions of the test results, please refer to the latest EMC test report			

■ RELIABILITY TEST

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																																																																								
1	TEMPERATURE RISE TEST	MODEL : XLN-60-48DA2 1. ROOM AMBIENT BURN-IN : HRS I/P : 230VAC O/P : FULL LOAD Ta=28.3 °C 2. HIGH AMBIENT BURN-IN : HRS I/P : 230VAC O/P : FULL LOAD Ta=50.0 °C <table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENT Ta=28.3°C</th><th>HIGH AMBIENT Ta=50.0°C</th></tr><tr><td>1</td><td>R37</td><td>69.2°C</td><td>90.2°C</td></tr><tr><td>2</td><td>D10</td><td>66.9°C</td><td>88.5°C</td></tr><tr><td>3</td><td>U1</td><td>66.4°C</td><td>87.6°C</td></tr><tr><td>4</td><td>Q1</td><td>71.5°C</td><td>92.8°C</td></tr><tr><td>5</td><td>T1</td><td>70.8°C</td><td>91.9°C</td></tr><tr><td>6</td><td>Q100</td><td>73.8°C</td><td>94.2°C</td></tr><tr><td>7</td><td>C101</td><td>71.3°C</td><td>92.0°C</td></tr><tr><td>8</td><td>Q110</td><td>84.3°C</td><td>105.5°C</td></tr><tr><td>9</td><td>Q111</td><td>77.1°C</td><td>97.9°C</td></tr><tr><td>10</td><td>R111</td><td>71.2°C</td><td>92.0°C</td></tr><tr><td>11</td><td>L100</td><td>71.5°C</td><td>92.1°C</td></tr><tr><td>12</td><td>U100</td><td>72.0°C</td><td>92.8°C</td></tr><tr><td>13</td><td>U200</td><td>70.7°C</td><td>91.3°C</td></tr><tr><td>14</td><td>Q200</td><td>69.3°C</td><td>89.8°C</td></tr><tr><td>15</td><td>C143</td><td>67.6°C</td><td>88.5°C</td></tr><tr><td>16</td><td>RTH3</td><td>60.9°C</td><td>81.2°C</td></tr><tr><td>17</td><td>TC</td><td>61.3°C</td><td>82.2°C</td></tr></table>			NO	Position	ROOM AMBIENT Ta=28.3°C	HIGH AMBIENT Ta=50.0°C	1	R37	69.2°C	90.2°C	2	D10	66.9°C	88.5°C	3	U1	66.4°C	87.6°C	4	Q1	71.5°C	92.8°C	5	T1	70.8°C	91.9°C	6	Q100	73.8°C	94.2°C	7	C101	71.3°C	92.0°C	8	Q110	84.3°C	105.5°C	9	Q111	77.1°C	97.9°C	10	R111	71.2°C	92.0°C	11	L100	71.5°C	92.1°C	12	U100	72.0°C	92.8°C	13	U200	70.7°C	91.3°C	14	Q200	69.3°C	89.8°C	15	C143	67.6°C	88.5°C	16	RTH3	60.9°C	81.2°C	17	TC	61.3°C	82.2°C
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 121.6 * LOAD Ta : 25°C	TEST : OK																																																																								
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 305VAC/110VAC O/P : 100 * LOAD Ta=-30 °C	TEST : OK																																																																								
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50 °C NO DAMAGE	I/P : 305 VAC O/P : FULL LOAD Ta=50 °C HUMIDITY= 95 %R.H	TEST : OK																																																																								
5	TEMPERATURE COEFFICIENT	± 0.03 %/(0°C~50°C)	I/P : 230 VAC O/P : FULL LOAD	± 0.009 %/°C(0~50°C)																																																																								

6	STORAGE TEMPERATURE TEST	-40~80°C	1. Thermal shock Temperature : -45°C~ +90°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 10CYCLE 5. Input/output condition : STATIC TEST : OK
7	THERMAL SHOCK TEST	-25~50°C	1. Thermal shock Temperature : -30°C~ +55°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 16 CYCLE 5. Input/output condition : 15cycle:230V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle:230V/ FULL LOAD Burn In Test
8	VIBRATION TEST	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 10min/sweep cycle (4) Acceleration : 3G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C
9	CAPACITOR LIFE CYCLE	SUPPOSE C101 IS THE MOST CRITICAL COMPONENT (1) I/P : 230VAC O/P : FULL LOAD Tc=75 °C LIFE TIME (2) I/P : 230VAC O/P : 75% LOAD Tc=75 °C LIFE TIME (3) I/P : 230VAC O/P : 50% LOAD Tc=75 °C LIFE TIME	(1) 55096HRS (2) 64954HRS (3) 72576HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 4053.7K hrs min. Telcordia SR-332 (Bellcore) ; 329.4K hrs min. MIL-HDBK-217F (25°C)	
11	Ongoing Reliability Test	I/P : 230VAC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 50,000 hours	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	WUWQ/HUANGMK	WENF	LINKX

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