



# Test Report: HVG-480-36

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480W Constant Voltage + Constant Current LED Driver

## ■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Component Stress Test

## ■ SAFETY & E.M.C. TEST

Safety Test

E.M.C. Test

## ■ RELIABILITY TEST

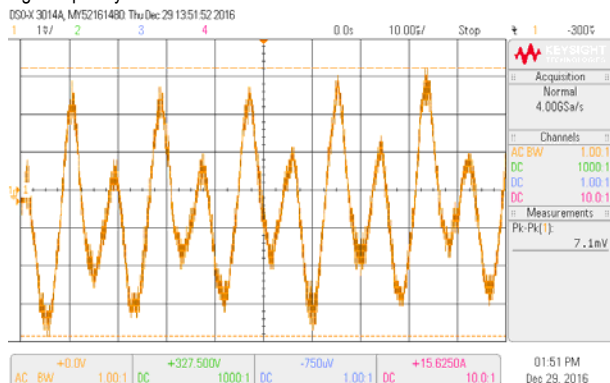
ENVIRONMENT TEST

DESIGN VERIFY TEST

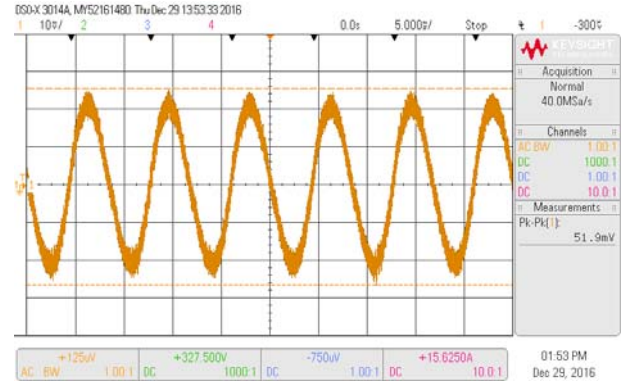
OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	CONSTANT CURRENT REGION	CH1: 18V~ 36V	I/P: 347 VAC O/P:FULL LOAD Ta:25°C	0.14V~35 V /347VAC
2	OUTPUT VOLTAGE ADJUST RANGE	CH1:30.6~37.8V	I/P: 347 VAC I/P:230VAC O/P:MIN LOAD Ta:25°C	28.366V~38.944V /347VAC 28.369V~ 38.944V/230VAC
3	CURRENT ADJ. RANGE	CH1:6.6A~ 13.3A	I/P: 347 VAC I/P:230VAC O/P:CV MIN & CV MAX-1V Ta:25°C	4.686A~14.102 A /347VAC@CV MAX-1V 4.703A~14.059A /347VAC@CV MIN 4.684A~14.11A/230VAC@CVMAX-1V 4.7A~14.057A/230VAC@CV MIN
4	OUTPUT VOLTAGE TOLERANCE (Max)	V1: 1 % ~ -1 %	I/P:180VAC /528AC O/P:FULL/ MIN LOAD Ta:25°C	V1: 0.286%~-0.058%
5	LINE REGULATION (Max)	V1: 0.5 % ~ -0.5 %	I/P:180VAC~528AC O/P:FULL LOAD Ta:25°C	V1: 0.008%~0%
6	LOAD REGULATION (Max)	V1: 0.5 % ~ -0.5 %	I/P: 347 VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: 0.174%~-0.164%
7	OVER/UNDERSHOOT TEST	< ±5%	I/P: 347 VAC O/P:FULL LOAD Ta:25°C	TEST: < 5 %
8	RIPPLE & NOISE (Max )	V1: 250 mVp-p	I/P: 347 VAC O/P:FULL LOAD Ta:25°C	V1: 51.9mVp-p

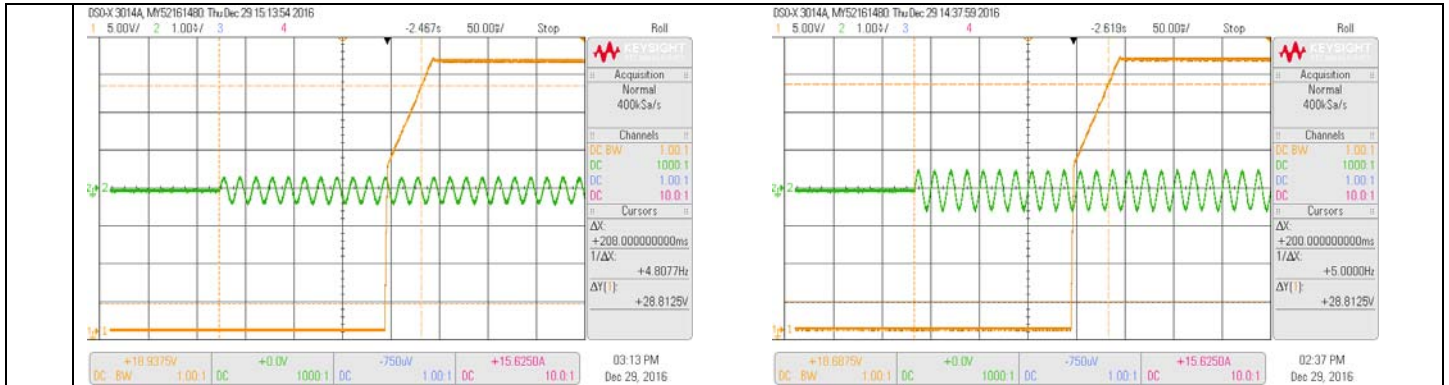
high frequency :



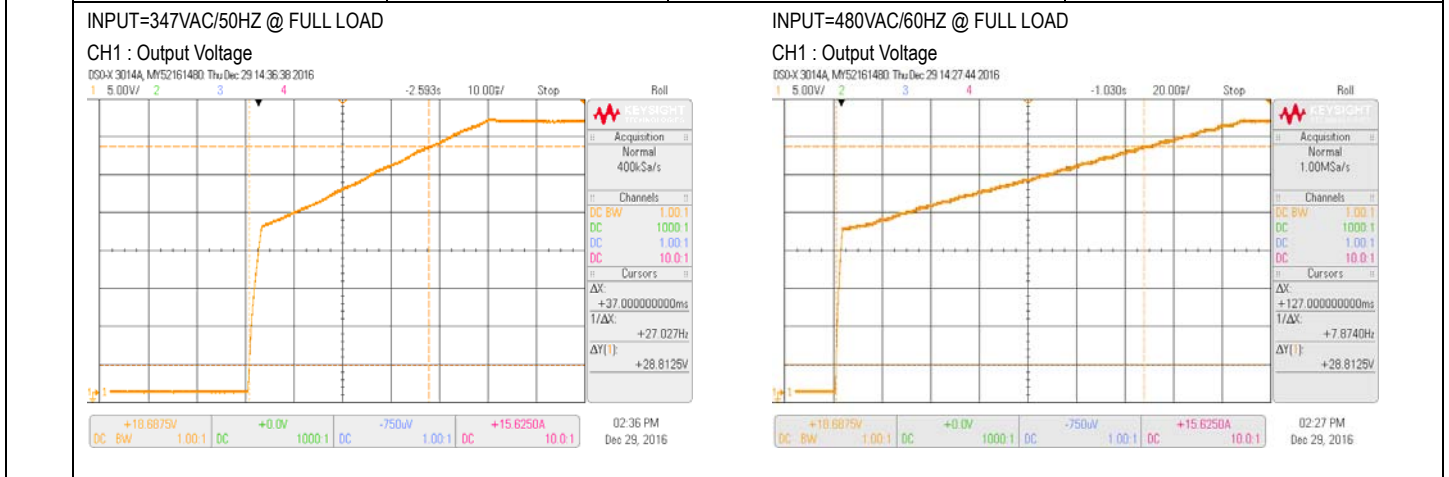
low frequency :



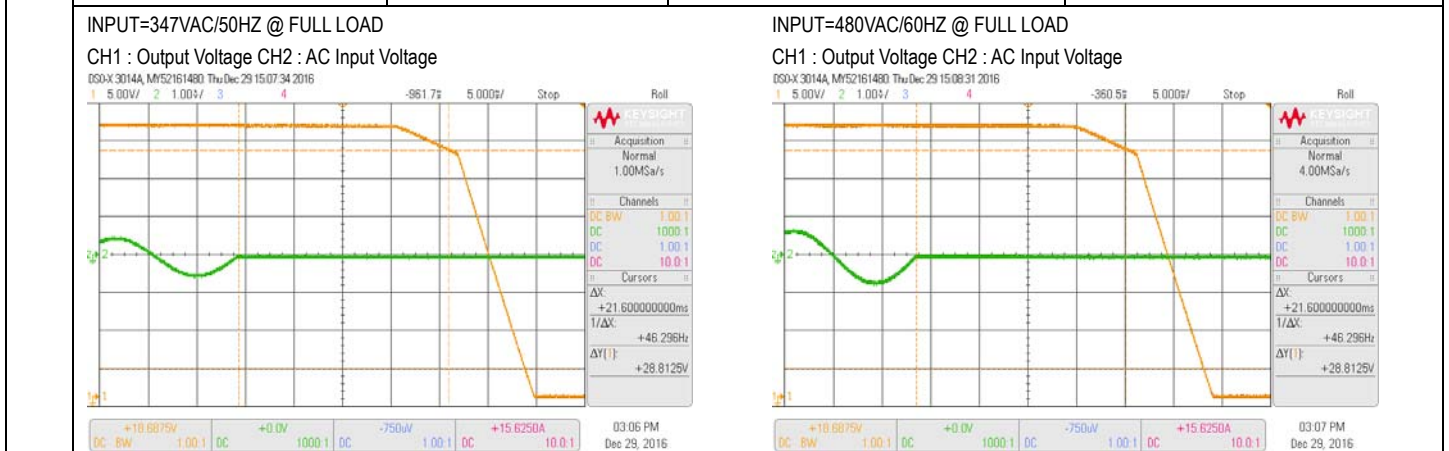
9	SET UP TIME	480VAC/ 500 ms (Max) 347VAC/ 500 ms (Max) 230VAC/ 500 ms (Max)	I/P: 480 VAC I/P: 347 VAC I/P: 230 VAC O/P:FULL LOAD Ta:25°C	480VAC/200ms 347VAC/208ms 230VAC/215ms
INPUT=347VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage		INPUT=480VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage		



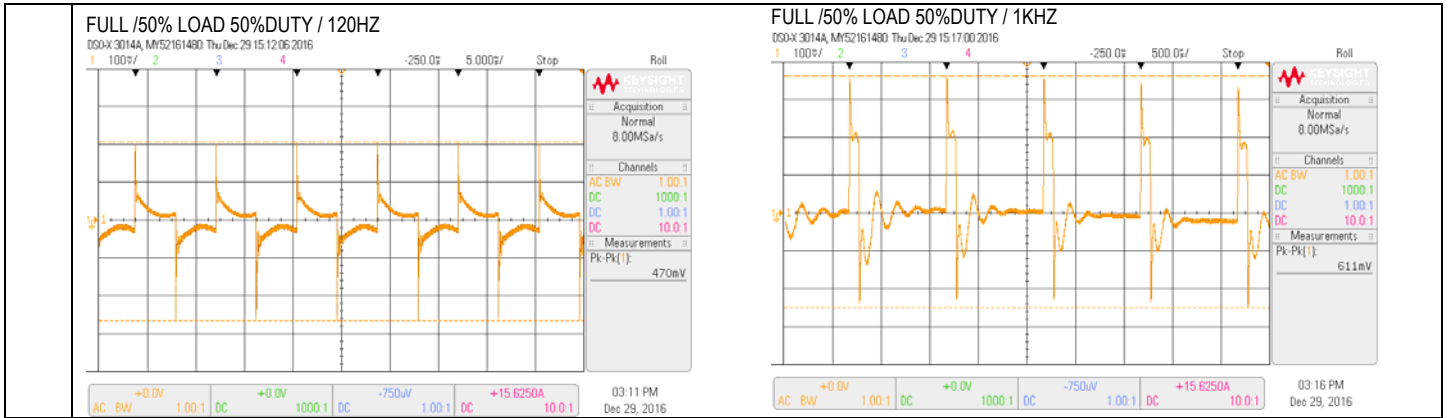
<b>10</b> <b>RISE TIME</b>	480VAC/ 100 ms (Max) 347VAC/ 100 ms (Max) 230VAC/ 100 ms (Max)	I/P: 480 VAC I/P: 347 VAC I/P: 230 VAC O/P:FULL LOAD Ta:25°C	480VAC/ 37ms 347VAC/38.4ms 230VAC/37ms
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<b>11</b> <b>HOLD UP TIME</b>	480VAC/ 16ms (Max) 347VAC/ 16 ms (Max)	I/P: 480 VAC I/P: 347 VAC O/P:FULL LOAD Ta:25°C	480VAC/21.6ms 347VAC/21.6ms
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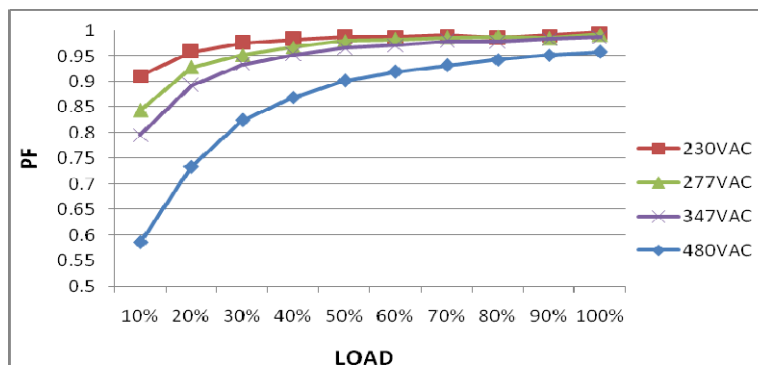
<b>12</b> <b>DYNAMIC LOAD</b>	V1: 3600 mVp-p	I/P: 347VAC O/P: (1)FULL /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD 50%DUTY / 1KHZ Ta:25°C	470mVp-p 611mVp-p
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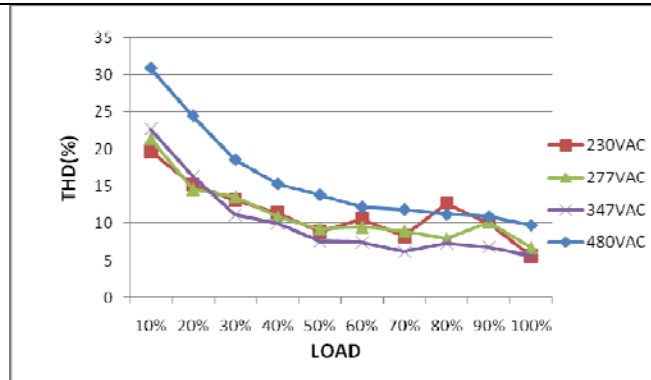
### INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	180VAC~528 VAC	I/P: TESTING O/P: FULL LOAD Ta: 25°C	127V~528 V
			I/P: LOW-LINE-3V=177 V HIGH-LINE+10V=538 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: 180 VAC ~528VAC O/P: FULL~MIN LOAD Ta: 25°C	OK
3	INPUT CURRENT (TYP)	480VAC/ 1.15 A 347 VAC/ 1.52A	I/P: 480VAC/347 VAC O/P: FULL LOAD Ta: 25°C	I = 1.086A/480VAC I = 1.476A/ 347VAC
4	LEAKAGE CURRENT	< 0.75 mA / 480VAC	I/P : 480 VAC O/P : Min LOAD Ta : 25°C	L-FG: 0.3 mA N-FG: 0.3mA
5	POWER FACTOR(TYP)	0.95/480 VAC FULL LOAD 0.97/347 VAC FULL LOAD 0.98/277 VAC FULL LOAD 0.98/230 VAC FULL LOAD	I/P: 480VAC/347VAC/230VAC/277VAC O/P: FULL LOAD Ta: 25°C	PF=0.9585/480V/100%LOAD PF=0.9873/347V/100%LOAD PF=0.992/277V/100%LOAD PF=0.996/230V/100%LOAD

P.F vs LOAD



6	EFFICIENCY (TYP)	94.5%	I/P: 347 VAC O/P: FULL LOAD Ta: 25°C	94.626 %																																																							
<p>EFFICIENCY vs LOAD</p> <table border="1"> <caption>Efficiency vs Load Data</caption> <thead> <tr> <th>LOAD (%)</th> <th>230VAC (%)</th> <th>277VAC (%)</th> <th>347VAC (%)</th> <th>480VAC (%)</th> </tr> </thead> <tbody> <tr><td>10%</td><td>80</td><td>78</td><td>76</td><td>75</td></tr> <tr><td>20%</td><td>88</td><td>86</td><td>84</td><td>83</td></tr> <tr><td>30%</td><td>91</td><td>89</td><td>87</td><td>86</td></tr> <tr><td>40%</td><td>92</td><td>90</td><td>88</td><td>87</td></tr> <tr><td>50%</td><td>93</td><td>91</td><td>89</td><td>88</td></tr> <tr><td>60%</td><td>93.5</td><td>91.5</td><td>89.5</td><td>88.5</td></tr> <tr><td>70%</td><td>94</td><td>92</td><td>90</td><td>89</td></tr> <tr><td>80%</td><td>94.2</td><td>92.2</td><td>90.2</td><td>89.2</td></tr> <tr><td>90%</td><td>94.4</td><td>92.4</td><td>90.4</td><td>89.4</td></tr> <tr><td>100%</td><td>94.5</td><td>92.5</td><td>90.5</td><td>89.5</td></tr> </tbody> </table>					LOAD (%)	230VAC (%)	277VAC (%)	347VAC (%)	480VAC (%)	10%	80	78	76	75	20%	88	86	84	83	30%	91	89	87	86	40%	92	90	88	87	50%	93	91	89	88	60%	93.5	91.5	89.5	88.5	70%	94	92	90	89	80%	94.2	92.2	90.2	89.2	90%	94.4	92.4	90.4	89.4	100%	94.5	92.5	90.5	89.5
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100%	94.5	92.5	90.5	89.5																																																							
7	INRUSH CURRENT (TYP)	480 V/ 40 A COLD START  (twidth=1100 us measured at 50% Ipeak) COLD START	I/P: 480VAC O/P: FULL LOAD Ta: 25°C	I = 33.8A/ 480VAC  T50= 1090 μs																																																							
<p>INPUT=480VAC/60HZ @ FULL LOAD CH2 : AC Input Voltage CH4 : Input current (1V=1A)</p> <p>Ch2 Max 680 V Ch4 Max 33.8 V</p>																																																											
8	TOTAL HARMONIC DISTORTION	Total harmonic distortion will be lower than 20% when output loading is 50% or higher at 230V/277V/347V/480V	I/P : 230V/277V/347V/480V O/P : 100% LOAD 50% LOAD Ta : 25°C	<table border="1"> <tr><td>THD :</td><td>8.87</td><td>%/230V 50%</td></tr> <tr><td>THD :</td><td>5.64</td><td>%/230V 100%</td></tr> <tr><td>THD :</td><td>9.24</td><td>%/277V 50%</td></tr> <tr><td>THD :</td><td>6.75</td><td>%/277V 100%</td></tr> <tr><td>THD :</td><td>7.552</td><td>%/347V 50%</td></tr> <tr><td>THD :</td><td>5.5962</td><td>%/347V 100%</td></tr> <tr><td>THD :</td><td>13.835</td><td>%/480V 50%</td></tr> <tr><td>THD :</td><td>9.748</td><td>%/480V 100%</td></tr> </table>	THD :	8.87	%/230V 50%	THD :	5.64	%/230V 100%	THD :	9.24	%/277V 50%	THD :	6.75	%/277V 100%	THD :	7.552	%/347V 50%	THD :	5.5962	%/347V 100%	THD :	13.835	%/480V 50%	THD :	9.748	%/480V 100%																															
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THD&LOAD																																																											



### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	95%~108% PROTECTION TYPE : Constant current limiting, recovers automatically after fault condition is removed	I/P: 528VAC I/P: 347VAC I/P: 180VAC O/P: TESTING Ta:25°C	103.44%/ 528VAC 103.44%/ 347VAC 103.43%/180VAC PROTECTION TYPE : Constant current limiting, recovers automatically after fault condition is removed
2	OVER VOLTAGE PROTECTION	V1:39.5 V~45V PROTECTION TYPE : Shut down o/p voltage re-power on to recovery	I/P: 528VAC I/P: 347VAC I/P: 180VAC O/P: MIN LOAD Ta:25°C	41.722V/ 528VAC 41.719V/ 347VAC 41.49V/ 180VAC PROTECTION TYPE : Shut down o/p voltage re-power on to recovery
3	OVER TEMPERATURE PROTECTION	PROTECTION TYPE : Shut down o/p voltage, re-power on to recover	I/P: 528 VAC I/P: 180 VAC O/P: FULL LOAD	O.T.P.Active PROTECTION TYPE : Shut down o/p voltage, re-power on to recover
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE PROTECTION TYPE : Constant current limiting, recovers automatically after fault condition is removed	I/P: 528VAC I/P: 180 VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE PROTECTION TYPE : Constant current limiting, recovers automatically after fault condition is removed

### COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PFC Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated 9A/950V	I/P: High-Line +3V =531V AC ON/OFF 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/	VDS: (1) 897V (2) 849V (3) 897V (4) 905V (5) 881V (6) 865V (7) 825V

			<p>Min. Load 90%Duty/5KHz (6)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load.</p> <p>I/P:Low-Line -3V = 177V 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.</p> <p>Ta:25°C</p>	VDS: (1)897V (2)841V (3)897V (4)913V (5)921V (6)905V (7)881V																																						
2	PWM Transistor ( D to S) or (C to E) <b>Peak Voltage</b>	Q10 Rated 9A/950V  Q12 Rated 9A/950V	<p>I/P:High-Line +3V =531 V AC ON/OFF 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.</p> <p>I/P:Low-Line -3V = 177V AC ON/OFF 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.</p> <p>Ta:25°C</p>	<table border="0"> <tr> <td>Q10</td> <td>Q12</td> </tr> <tr> <td>531V:</td> <td>531V:</td> </tr> <tr> <td>VDS:</td> <td>VDS:</td> </tr> <tr> <td>(1)879V</td> <td>(1)869V</td> </tr> <tr> <td>(2) 871V</td> <td>(2)885V</td> </tr> <tr> <td>(3) 879V</td> <td>(3)812V</td> </tr> <tr> <td>(4) 878V</td> <td>(4) 821V</td> </tr> <tr> <td>(5) 879V</td> <td>(5) 861V</td> </tr> <tr> <td>(6) 876V</td> <td>(6)853 V</td> </tr> <tr> <td>(7) 863V</td> <td>(7)880V</td> </tr> <tr> <td>177V:</td> <td>177V:</td> </tr> <tr> <td>VDS:</td> <td>VDS:</td> </tr> <tr> <td>(1) 815V</td> <td>(1) 872V</td> </tr> <tr> <td>(2)823 V</td> <td>(2) 880V</td> </tr> <tr> <td>(3) 823V</td> <td>(3)863 V</td> </tr> <tr> <td>(4) 831V</td> <td>(4) 880V</td> </tr> <tr> <td>(5) 823V</td> <td>(5) 880V</td> </tr> <tr> <td>(6) 807V</td> <td>(6) 880V</td> </tr> <tr> <td>(7) 807V</td> <td>(7) 880V</td> </tr> </table>	Q10	Q12	531V:	531V:	VDS:	VDS:	(1)879V	(1)869V	(2) 871V	(2)885V	(3) 879V	(3)812V	(4) 878V	(4) 821V	(5) 879V	(5) 861V	(6) 876V	(6)853 V	(7) 863V	(7)880V	177V:	177V:	VDS:	VDS:	(1) 815V	(1) 872V	(2)823 V	(2) 880V	(3) 823V	(3)863 V	(4) 831V	(4) 880V	(5) 823V	(5) 880V	(6) 807V	(6) 880V	(7) 807V	(7) 880V
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3	P.F.C DIODE	D9 Rated 8A/1200V	<p>I/P:High-Line +3V =531 V AC ON/OFF O/P: (1)Full Load (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (4)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz</p> <p>I/P:Low-Line -3V = 177V AC ON/OFF O/P: (1)Full Load (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz</p>	<table border="0"> <tr> <td>(1)811V</td> </tr> <tr> <td>(2)836V</td> </tr> <tr> <td>(3)803V</td> </tr> <tr> <td>(4)811V</td> </tr> <tr> <td>(1)828V</td> </tr> <tr> <td>(2)844V</td> </tr> <tr> <td>(3)836V</td> </tr> <tr> <td>(4)844V</td> </tr> </table>	(1)811V	(2)836V	(3)803V	(4)811V	(1)828V	(2)844V	(3)836V	(4)844V																														
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			(4)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz Ta:25°C	
4	Diode Peak Voltage	Q101 Rated 70 A/ 100 V  Q120 Rated 70 A/ 100 V	I/P:High-Line +3V =531 V AC ON/OFF 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	Q101: Q120: VDS: VDS: (1)76.7 V (1)83.1V (2)9.9 V (2) 17.2V (3)79.1V (3)84.7V (4)77.5V (4)83.1V (5)77.5V (5)83.9V (6)79.1V (6)87.1V (7)81.5V (7)85.5V (8)76.7V (8)77.5V
5	Input Capacitor Voltage	C5 Rated: 150μ/450 V	I/P:High-Line +3V =531V O/P: (1)Full Load input on/off (2) Min load input on /Off (3)Full Load /Min load Change (4)Full load continue Ta:25°C	(1) 387V (2) 387V (3) 391V (4) 383V
6	Control IC Voltage Test	PWM IC U2 Rated 8.85V~16V  PFC IC U1 Rated 10.5V~20V	I/P:High-Line +3V =531 V AC ON/OFF O/P:(1)FULL LOAD (2) Output Short (3)O.L.P (4)O.V.P. (5)NO LOAD VR MIN (LOW LINE) Ta:25°C	(1) 14.1V (2) 14.1V (3) 14.1V (4) 14.3V (5) 14.3V  (1) 13.7V (2) 13.7V (3) 13.5V (4) 14.1V (5) 13.7V

## SAFETY & EMC TEST REPORT

### SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	IEC60950-1 I/P-O/P: 3.75KVAC/min I/P-FG:2 KVAC/min<4.5mA O/P-FG:1.5KVAC/min	I/P-O/P: 4.125 KVAC/min I/P-FG: 2.4KVAC/min O/P-FG: 1.8 KVAC/min Ta:25°C	I/P-O/P:2.849 mA I/P-FG:1.925mA O/P-FG:6.21 mA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ I/P-FG: 500VDC>100MΩ O/P-FG:500VDC>100MΩ	I/P-O/P: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta:25°C	I/P-O/P:11.4 GΩ I/P-FG:6.41 G Ω O/P-FG: 30G Ω NO DAMAGE
3.	GROUNDING CONTINUITY	IEC60950-1 FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	25mΩ

### E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
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1	CONDUCTION	FCC Part 15 Subpart B	I/P: 440VAC /60HZ O/P:FULL LOAD/40% LOAD Ta:25°C	PASS Test by certified Lab
2	RADIATION	FCC Part 15 Subpart B	I/P: 480VAC /60HZ O/P:FULL LOAD/30% LOAD Ta:25°C	PASS Test by certified Lab
3	SURGE	IEC61000-4-5 INDUSTRY L-N :2KV L,N-PE:4KV	I/P: 230VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A
4	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 : HVG-480-24 1. ROOM AMBIENT BURN-IN : 3 HRS I/P : 347VAC O/P : FULL LOAD Ta=25 °C 2. HIGH AMBIENT BURN-IN : 14 HRS I/P : 347VAC O/P : FULL LOAD Ta= 60 °C																																																																																						
				<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 25 °C</th> <th>HIGH AMBIENT Ta= 60 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>BD1</td><td>62.1°C</td><td>95.6°C</td></tr> <tr><td>2</td><td>C10</td><td>60.9°C</td><td>94.8°C</td></tr> <tr><td>3</td><td>Q1</td><td>61.7°C</td><td>96.0°C</td></tr> <tr><td>4</td><td>D8</td><td>65.6°C</td><td>102.8°C</td></tr> <tr><td>5</td><td>Q10</td><td>64.1°C</td><td>100.5°C</td></tr> <tr><td>6</td><td>RY1</td><td>63.3°C</td><td>98.4°C</td></tr> <tr><td>7</td><td>LF2</td><td>60.4°C</td><td>93.9°C</td></tr> <tr><td>8</td><td>C1</td><td>58.2°C</td><td>91.9°C</td></tr> <tr><td>9</td><td>C5</td><td>61.0°C</td><td>95.3°C</td></tr> <tr><td>10</td><td>L3</td><td>64.3°C</td><td>100.6°C</td></tr> <tr><td>11</td><td>U1</td><td>58.2°C</td><td>92.1°C</td></tr> <tr><td>12</td><td>U107</td><td>57.9°C</td><td>92.5°C</td></tr> <tr><td>13</td><td>T1-1</td><td>66.0°C</td><td>101.2°C</td></tr> <tr><td>14</td><td>T2-2</td><td>70.9°C</td><td>106.9°C</td></tr> <tr><td>15</td><td>Q100</td><td>62.3°C</td><td>97.6°C</td></tr> <tr><td>16</td><td>C115</td><td>58.6°C</td><td>92.8°C</td></tr> <tr><td>17</td><td>LF100</td><td>59.9°C</td><td>94.5°C</td></tr> <tr><td>18</td><td>C511</td><td>64.2°C</td><td>98.8°C</td></tr> <tr><td>19</td><td>RTH2</td><td>65.6°C</td><td>101.1°C</td></tr> <tr><td>20</td><td>T3</td><td>63.2°C</td><td>98.6°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta= 25 °C	HIGH AMBIENT Ta= 60 °C	1	BD1	62.1°C	95.6°C	2	C10	60.9°C	94.8°C	3	Q1	61.7°C	96.0°C	4	D8	65.6°C	102.8°C	5	Q10	64.1°C	100.5°C	6	RY1	63.3°C	98.4°C	7	LF2	60.4°C	93.9°C	8	C1	58.2°C	91.9°C	9	C5	61.0°C	95.3°C	10	L3	64.3°C	100.6°C	11	U1	58.2°C	92.1°C	12	U107	57.9°C	92.5°C	13	T1-1	66.0°C	101.2°C	14	T2-2	70.9°C	106.9°C	15	Q100	62.3°C	97.6°C	16	C115	58.6°C	92.8°C	17	LF100	59.9°C	94.5°C	18	C511	64.2°C	98.8°C	19	RTH2	65.6°C	101.1°C	20	T3	63.2°C	98.6°C
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2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 528VAC/180VAC O/P : 100 % LOAD Ta= -45 °C	TEST : OK																																																																																				



3	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 60 °C NO DAMAGE	I/P : 538 VAC O/P : FULL LOAD Ta= 60°C HUMIDITY= 95 %R.H	TEST : OK
4	TEMPERATURE COEFFICIENT	± 0.03 %/°C (0~60°C)	I/P : 347 VAC O/P : FULL LOAD	± 0 %/°C (0~60°C)
5	STORAGE TEMPERATURE TEST	1. Thermal shock Temperature : -50°C~ +125°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 100 CYCLE 5. Input/Output condition : STATIC		OK
6	THERMAL SHOCK TEST	1. Thermal shock Temperature : -45°C~ +65°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:347V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle: 347V/ FULL LOAD Burn In Test		OK
7	VIBRATION TEST	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 12min/sweep cycle (4) Acceleration : 5G (5) Test Time : 72min in each axis (X.Y.Z) (6) Ta : 25°C		TEST : OK
8	CAPACITOR LIFE CYCLE	SUPPOSE C115 IS THE MOST CRITICAL COMPONENT (1) I/P : 347VAC O/P : FULL LOAD Tc= 80 °C LIFE TIME (2) I/P : 347VAC O/P : 75% LOAD Tc= 80 °C LIFE TIME (3) I/P : 347VAC O/P : 50% LOAD Tc= 80 °C LIFE TIME		(1) 52836HRS (2) 65359HRS (3) 68829HRS
9	MTBF	318.9K hrs min. Telcordia SR-332(Bellcore) ; 84.5K hrs min. MIL-HDBK-217F (25°C)		
10	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	DANIEL GAO	SANFORD SU	VINCENT ZENG

12.10.30 A50-F031