

Evaluation Data

품 목	SMPS
품 명	RP50-S
Rev. No.	A

CE CB

ORIENT
ELECTRONICS

경기도 성남시 중원구 갈마치로 322

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RP50-05

Input Current & Efficiency

Specification : 0.95A @ AC110V , 0.56A / 83% @ AC220V

Io		Vin	AC85V	AC110V	AC220V	AC264V
		0%	Input Current [A]	0.01A	0.01A	0.02A
	Efficiency [%]	-	-	-	-	
50%	Input Current [A]	0.60A	0.47A	0.36A	0.28A	
	Efficiency [%]	81.97%	82.24%	82.35%	82.32%	
100%	Input Current [A]	0.95A	0.94A	0.59A	0.52A	
	Efficiency [%]	81.05%	82.05%	82.35%	82.24%	

Line & Load Regulation

Specification : Line Regulation $\pm 25\text{mV}$
Load Regulation $\pm 50\text{mV}$

Vin	AC85V	AC110V	AC220V	AC264V	Line Regulation [mV]
0%	5.03V	5.03V	5.03V	5.03V	0mV
50%	5.02V	5.02V	5.02V	5.02V	0mV
100%	5.01V	5.00V	5.00V	5.00V	0mV
Load Regulation [mV]	20mV	20mV	20mV	20mV	

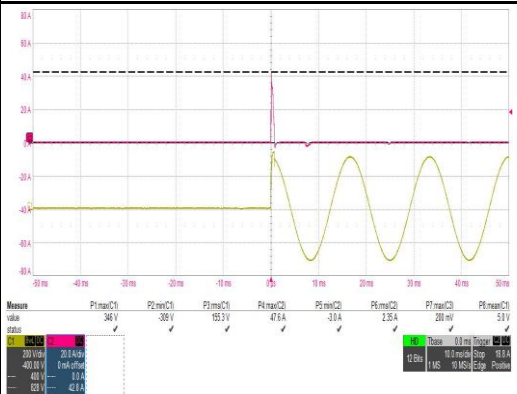
Leakage Current

Specification : 0.75mA

	110V	220V
Line L [mA]	0.15mA	0.26mA
Line N [mA]	0.11mA	0.25mA

Inrush Current

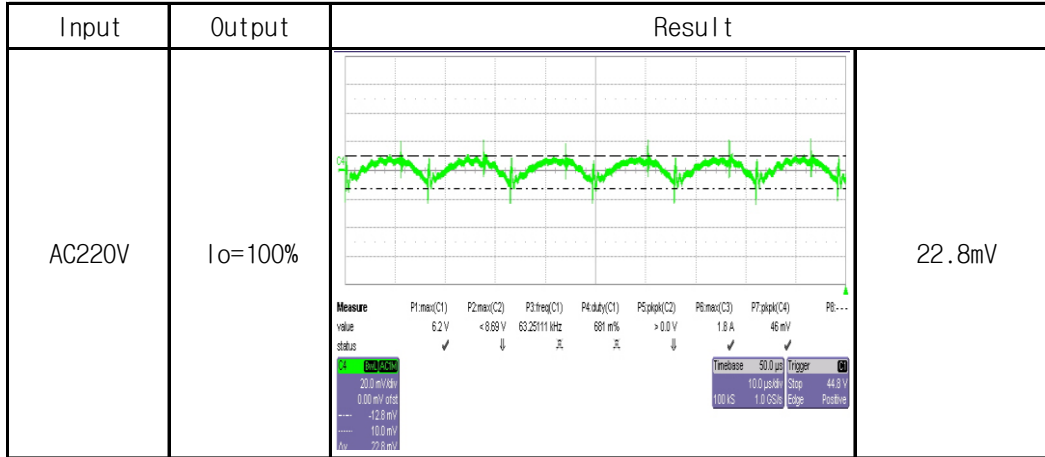
Specification : 45A

Input	Output	Result																		
AC220V	Io=100%	 <table border="1"> <thead> <tr> <th>Measure</th> <th>P1.max[C1]</th> <th>P2.min[C1]</th> <th>P3.max[C1]</th> <th>P4.max[C2]</th> <th>P5.min[C2]</th> <th>P6.min[C2]</th> <th>P7.max[C2]</th> <th>P8.max[C2]</th> </tr> </thead> <tbody> <tr> <td>value</td> <td>36V</td> <td>-38V</td> <td>155.3V</td> <td>47.6A</td> <td>-3.8A</td> <td>2.35A</td> <td>280mV</td> <td>51V</td> </tr> </tbody> </table> <p>42.8A</p>	Measure	P1.max[C1]	P2.min[C1]	P3.max[C1]	P4.max[C2]	P5.min[C2]	P6.min[C2]	P7.max[C2]	P8.max[C2]	value	36V	-38V	155.3V	47.6A	-3.8A	2.35A	280mV	51V
Measure	P1.max[C1]	P2.min[C1]	P3.max[C1]	P4.max[C2]	P5.min[C2]	P6.min[C2]	P7.max[C2]	P8.max[C2]												
value	36V	-38V	155.3V	47.6A	-3.8A	2.35A	280mV	51V												

RP50-05

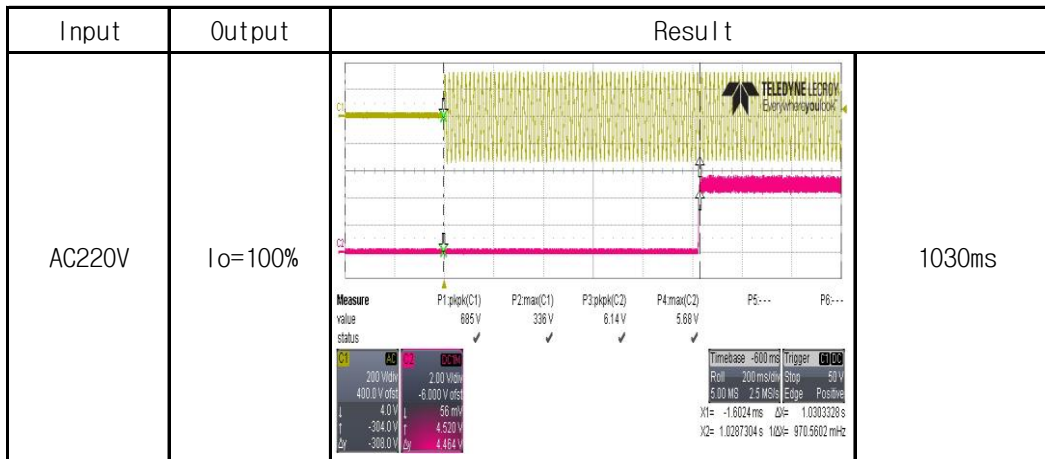
Ripple & Noise

Specification : 80mV



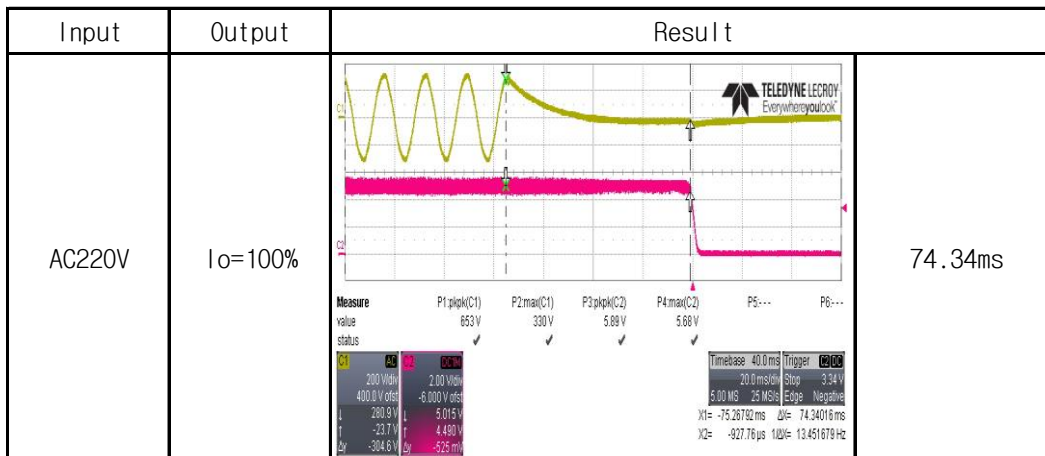
Turn on Time

Specification : 1000ms



Hold up Time

Specification : 30ms



RP50-05

Electro Magnetic Compatibility

Item	Standard	Tset Condition	Result
EMI (Conduction/Radiation)	EN55032	AC230V, 50Hz, Full Load	Class B Pass
Harmonic Current	EN61000-3-2	AC230V, 50Hz, Full Load	Class A Pass
Electrostatic Discharge	EN61000-4-2	AC230V, 50Hz, Full Load Ari : 8kV, Contact : 4kV	Criteria A
Electrical Fast Transient	EN61000-4-4	AC230V, 50Hz, Full Load 2kV	Criteria A
Surge	EN61000-4-5	AC230V, 50Hz, Full Load Line-Line : 2kV Line-PE : 4kV	Criteria A

RP50-12

Input Current & Efficiency

Specification : 0.95A @ AC110V , 0.56A / 86% @ AC220V

Io		Vin	AC85V	AC110V	AC220V	AC264V
		0%	Input Current [A]	0.01A	0.01A	0.02A
	Efficiency [%]	-	-	-	-	
50%	Input Current [A]	0.63A	0.52A	0.33A	0.29A	
	Efficiency [%]	84.20%	85.42%	87.02%	86.93%	
100%	Input Current [A]	0.94A	0.93A	0.58A	0.51A	
	Efficiency [%]	83.60%	85.14%	86.84%	86.72%	

Line & Load Regulation

Specification : Line Regulation $\pm 60\text{mV}$
Load Regulation $\pm 60\text{mV}$

Vin	AC85V	AC110V	AC220V	AC264V	Line Regulation [mV]
0%	12.04V	12.04V	12.040V	12.04V	0mV
50%	12.02V	12.02V	12.02V	12.02V	0mV
100%	12.01V	12.01V	12.01V	12.01V	0mV
Load Regulation [mV]	30mV	30mV	30mV	30mV	

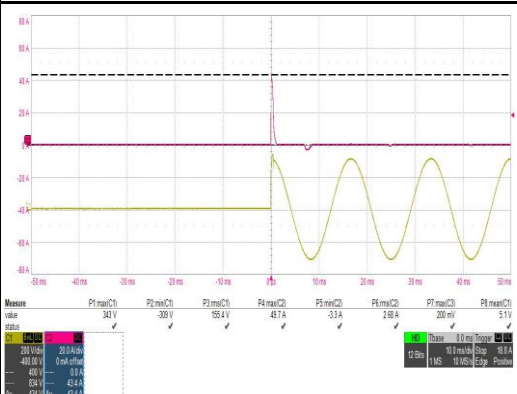
Leakage Current

Specification : 0.75mA

	110V	220V
Line L [mA]	0.15mA	0.28mA
Line N [mA]	0.11mA	0.26mA

Inrush Current

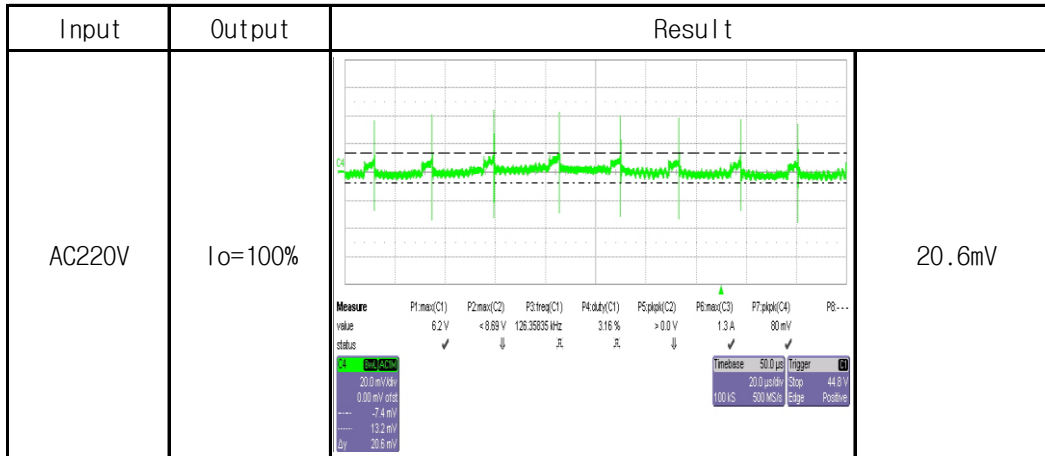
Specification : 45A

Input	Output	Result
AC220V	Io=100%	

RP50-12

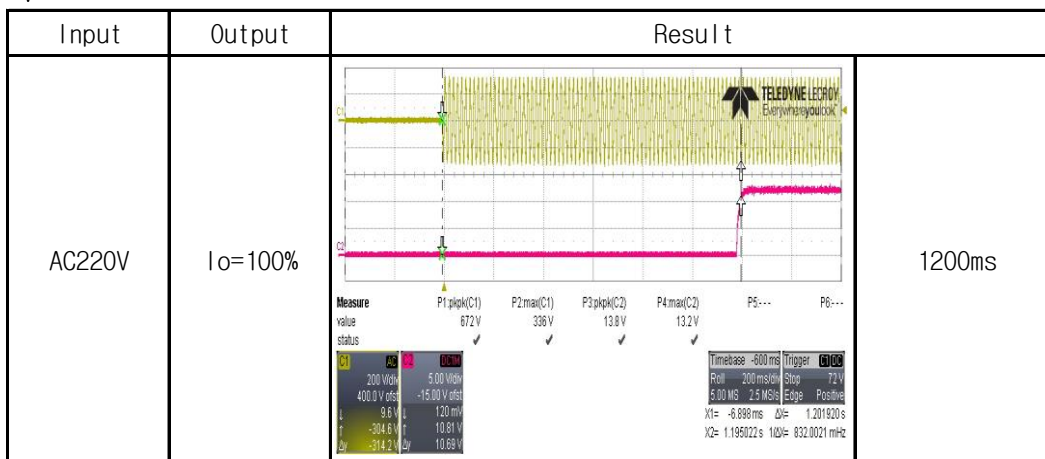
Ripple & Noise

Specification : 120mV



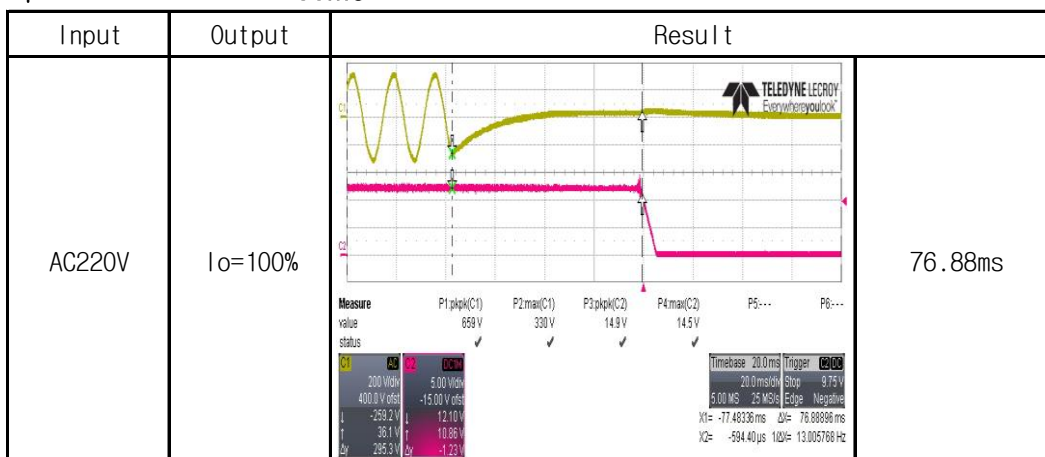
Turn on Time

Specification : 1000ms



Hold up Time

Specification : 30ms



RP50-12

Electro Magnetic Compatibility

Item	Standard	Tset Condition	Result
EMI (Conduction/Radiation)	EN55032	AC230V, 50Hz, Full Load	Class B Pass
Harmonic Current	EN61000-3-2	AC230V, 50Hz, Full Load	Class A Pass
Electrostatic Discharge	EN61000-4-2	AC230V, 50Hz, Full Load Ari : 8kV, Contact : 4kV	Criteria A
Electrical Fast Transient	EN61000-4-4	AC230V, 50Hz, Full Load 2kV	Criteria A
Surge	EN61000-4-5	AC230V, 50Hz, Full Load Line-Line : 2kV Line-PE : 4kV	Criteria A

RP50-24

Input Current & Efficiency

Specification : 0.95A @ AC110V , 0.56A / 88% @ AC220V

Io		Vin	AC85V	AC110V	AC220V	AC264V
		0%	Input Current [A]	0.01A	0.01A	0.02A
	Efficiency [%]	-	-	-	-	
50%	Input Current [A]	0.63A	0.53A	0.33A	0.29A	
	Efficiency [%]	87.04%	88.24%	89.58%	89.49%	
100%	Input Current [A]	0.94A	0.94A	0.58A	0.52A	
	Efficiency [%]	86.29%	87.27%	89.49%	89.49%	

Line & Load Regulation

Specification : Line Regulation $\pm 120\text{mV}$
Load Regulation $\pm 120\text{mV}$

Vin	AC85V	AC110V	AC220V	AC264V	Line Regulation [mV]
0%	24.03V	24.03V	24.03V	24.03V	0mV
50%	24.02V	24.02V	24.02V	24.02V	0mV
100%	24.01V	24.01V	24.01V	24.01V	0mV
Load Regulation [mV]	20mV	20mV	20mV	20mV	

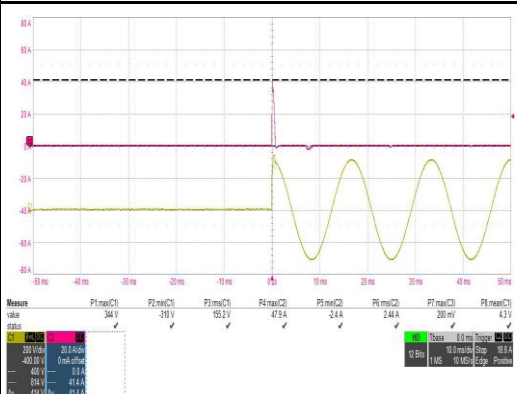
Leakage Current

Specification : 0.75mA

	110V	220V
Line L [mA]	0.13mA	0.29mA
Line N [mA]	0.10mA	0.26mA

Inrush Current

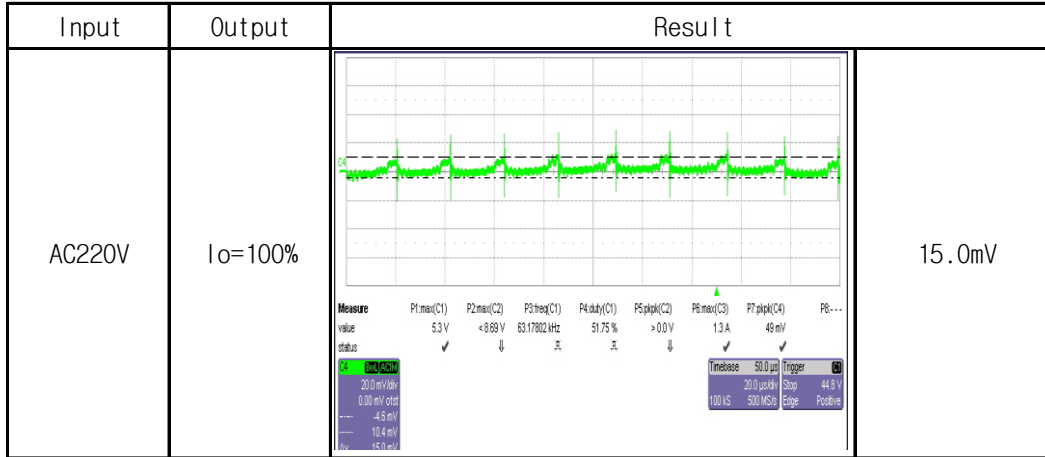
Specification : 45A

Input	Output	Result
AC220V	Io=100%	

RP50-24

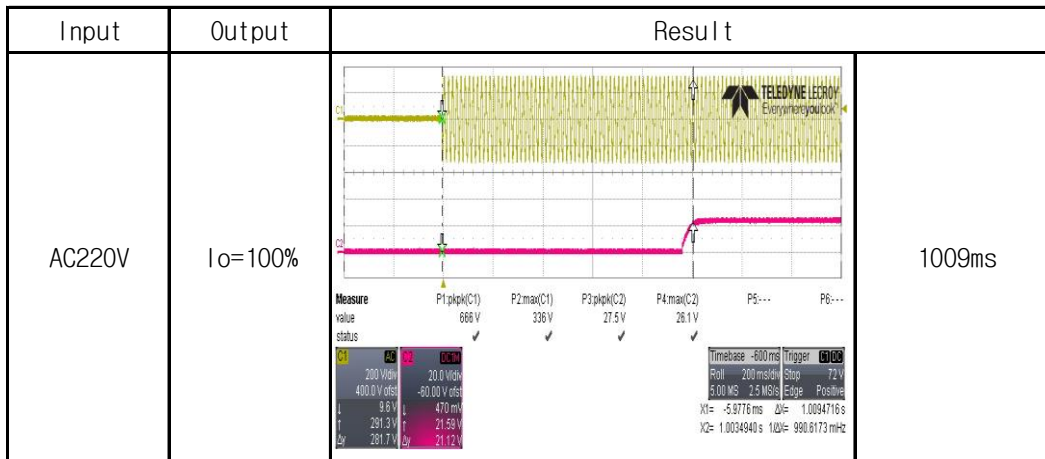
Ripple & Noise

Specification : 150mV



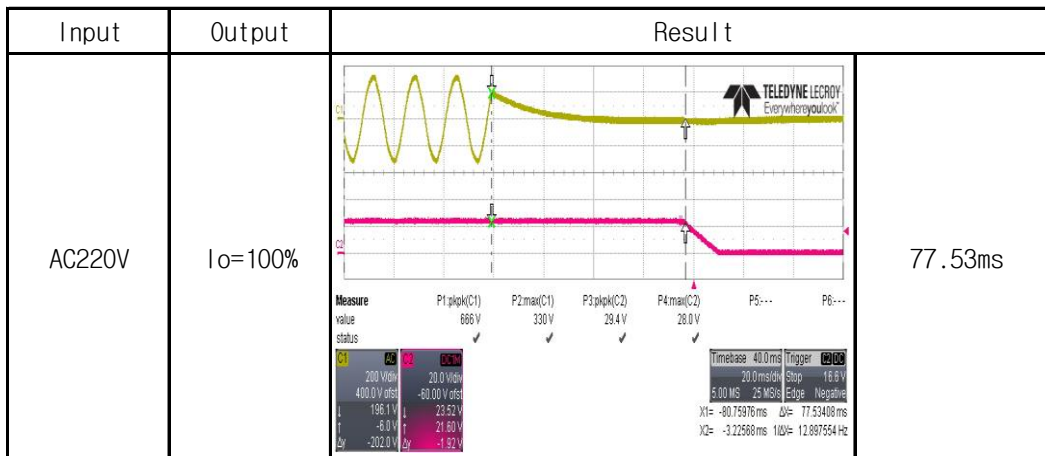
Turn on Time

Specification : 1000ms



Hold up Time

Specification : 30ms



RP50-24

Electro Magnetic Compatibility

Item	Standard	Tset Condition	Result
EMI (Conduction/Radiation)	EN55032	AC230V, 50Hz, Full Load	Class B Pass
Harmonic Current	EN61000-3-2	AC230V, 50Hz, Full Load	Class A Pass
Electrostatic Discharge	EN61000-4-2	AC230V, 50Hz, Full Load Ari : 8kV, Contact : 4kV	Criteria A
Electrical Fast Transient	EN61000-4-4	AC230V, 50Hz, Full Load 2kV	Criteria A
Surge	EN61000-4-5	AC230V, 50Hz, Full Load Line-Line : 2kV Line-PE : 4kV	Criteria A

RP50-48

Input Current & Efficiency

Specification : 0.95A @ AC110V , 0.56A / 90% @ AC220V

I _o		V _{in}	AC85V	AC110V	AC220V	AC264V
		0%	Input Current [A]	0.01A	0.01A	0.02A
Efficiency [%]	-		-	-	-	
50%	Input Current [A]	0.63A	0.51A	0.33A	0.29A	
	Efficiency [%]	88.00%	89.07%	90.94%	90.91%	
100%	Input Current [A]	0.94A	0.93A	0.58A	0.51A	
	Efficiency [%]	87.18%	88.15%	90.72%	90.71%	

Line & Load Regulation

Specification : Line Regulation ±240mV
Load Regulation ±240mV

V _{in}	AC85V	AC110V	AC220V	AC264V	Line Regulation [mV]
0%	48.03V	48.03V	48.03V	48.03V	0mV
50%	48.02V	48.02V	48.02V	48.02V	0mV
100%	48.00V	48.00V	48.00V	48.00V	0mV
Load Regulation [mV]	30mV	30mV	30mV	30mV	

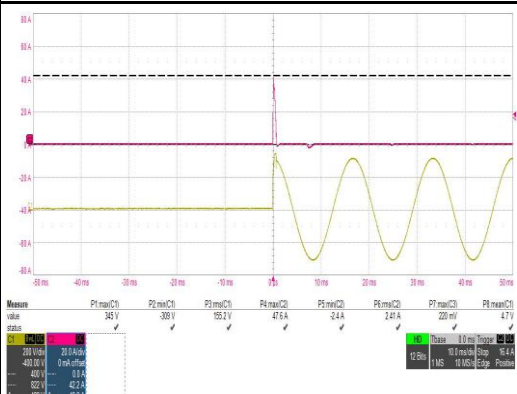
Leakage Current

Specification : 0.75mA

	110V	220V
Line L [mA]	0.12mA	0.28mA
Line N [mA]	0.08mA	0.25mA

Inrush Current

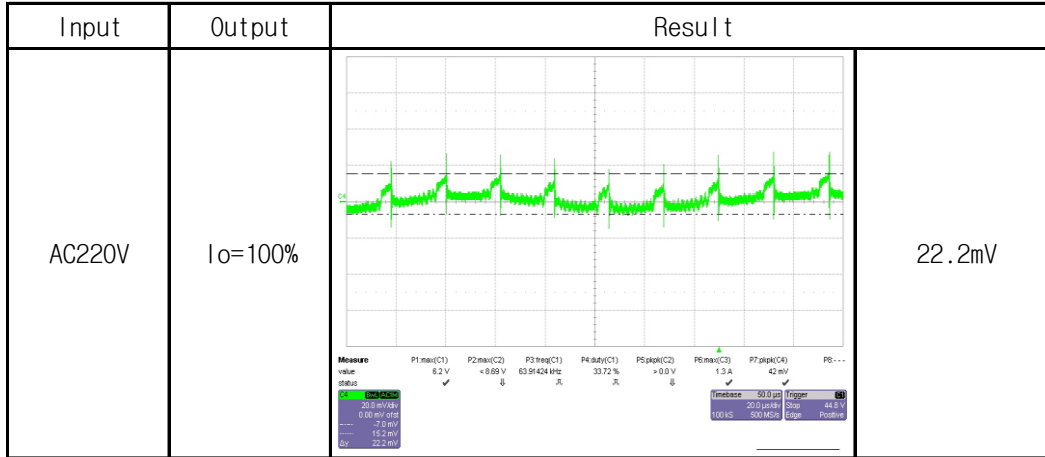
Specification : 45A

Input	Output	Result																																															
AC220V	I _o =100%	 <table border="1"> <thead> <tr> <th>Measure</th> <th>P1 max(C1)</th> <th>P2 max(C1)</th> <th>P3 max(C1)</th> <th>P4 max(C2)</th> <th>P5 max(C2)</th> <th>P6 max(C2)</th> <th>P7 max(C3)</th> <th>P8 max(C1)</th> </tr> </thead> <tbody> <tr> <td>Value</td> <td>36V</td> <td>-38V</td> <td>55.2V</td> <td>47.6A</td> <td>3.4A</td> <td>2.01A</td> <td>220mV</td> <td>47V</td> </tr> <tr> <td>Unit</td> <td>V</td> <td>V</td> <td>V</td> <td>A</td> <td>A</td> <td>A</td> <td>V</td> <td>V</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Ch</th> <th>Scale</th> <th>Offset</th> <th>Probe</th> </tr> </thead> <tbody> <tr> <td>CH1</td> <td>200 V/div</td> <td>0</td> <td>10x</td> </tr> <tr> <td>CH2</td> <td>20 A/div</td> <td>0</td> <td>10x</td> </tr> <tr> <td>CH3</td> <td>200 mV/div</td> <td>0</td> <td>10x</td> </tr> <tr> <td>CH4</td> <td>20 ns/div</td> <td>0</td> <td>10x</td> </tr> </tbody> </table>	Measure	P1 max(C1)	P2 max(C1)	P3 max(C1)	P4 max(C2)	P5 max(C2)	P6 max(C2)	P7 max(C3)	P8 max(C1)	Value	36V	-38V	55.2V	47.6A	3.4A	2.01A	220mV	47V	Unit	V	V	V	A	A	A	V	V	Ch	Scale	Offset	Probe	CH1	200 V/div	0	10x	CH2	20 A/div	0	10x	CH3	200 mV/div	0	10x	CH4	20 ns/div	0	10x
Measure	P1 max(C1)	P2 max(C1)	P3 max(C1)	P4 max(C2)	P5 max(C2)	P6 max(C2)	P7 max(C3)	P8 max(C1)																																									
Value	36V	-38V	55.2V	47.6A	3.4A	2.01A	220mV	47V																																									
Unit	V	V	V	A	A	A	V	V																																									
Ch	Scale	Offset	Probe																																														
CH1	200 V/div	0	10x																																														
CH2	20 A/div	0	10x																																														
CH3	200 mV/div	0	10x																																														
CH4	20 ns/div	0	10x																																														

RP50-48

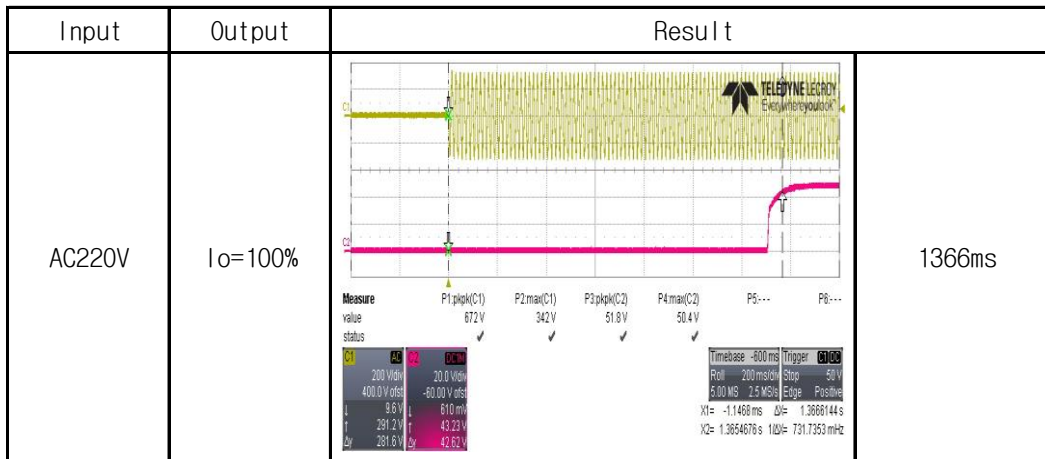
Ripple & Noise

Specification : 200mV



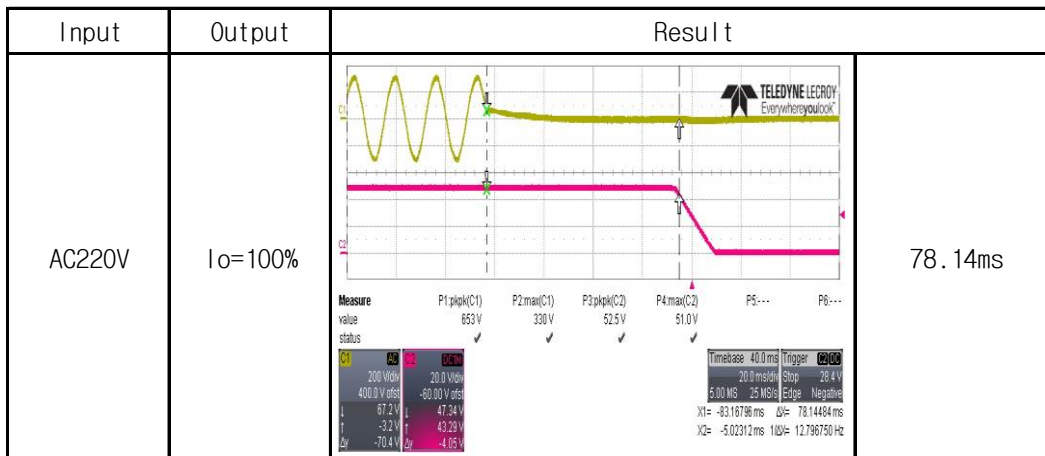
Turn on Time

Specification : 1000ms



Hold up Time

Specification : 30ms



RP50-48

Electro Magnetic Compatibility

Item	Standard	Tset Condition	Result
EMI (Conduction/Radiation)	EN55032	AC230V, 50Hz, Full Load	Class B Pass
Harmonic Current	EN61000-3-2	AC230V, 50Hz, Full Load	Class A Pass
Electrostatic Discharge	EN61000-4-2	AC230V, 50Hz, Full Load Ari : 8kV, Contact : 4kV	Criteria A
Electrical Fast Transient	EN61000-4-4	AC230V, 50Hz, Full Load 2kV	Criteria A
Surge	EN61000-4-5	AC230V, 50Hz, Full Load Line-Line : 2kV Line-PE : 4kV	Criteria A