

Test Data

Model Number: mUZP-120-12-J0L

Model Name: DC POWER SUPPLY

INPUT: 85V – 264V AC, 50 / 60 Hz

OUTPUT: 12 V 8.4A (16.7 A_{peak})

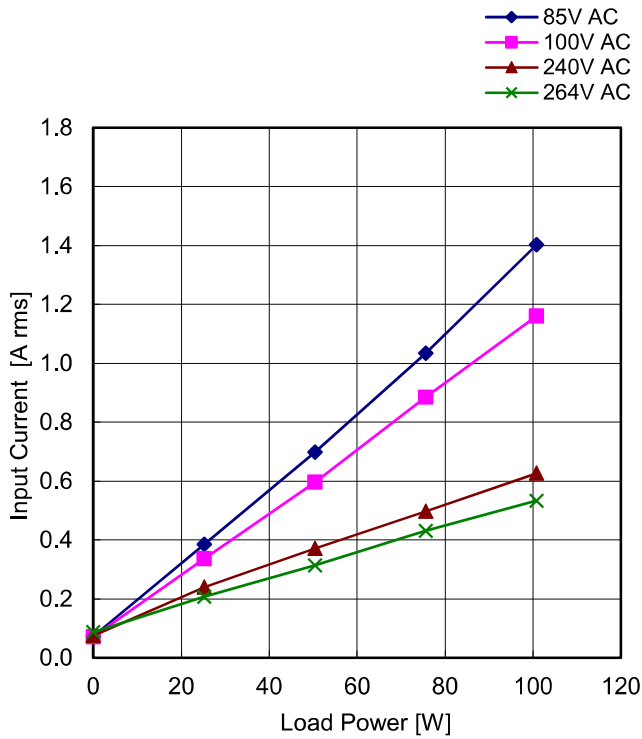
Minimum load : 0W
Rated load :100.8W
Peak output power: 200.4W

Approved by : *T. Shibamoto* (QA manager)
Designed by : *Kazuyuki Yamada* (R&D engineer)
Tested by : *Hiroyuki Watanabe* (Evaluation test engineer)

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Model	mUZP-120-12-J0L	Temperature: 25°C
Item	Input Current (by Load Power)	



Load Power [W]	Input Current [A rms]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
0.0	0.07	0.07	0.08	0.09
25.2	0.38	0.34	0.24	0.21
50.4	0.70	0.60	0.37	0.31
75.6	1.03	0.88	0.50	0.43
100.8	1.40	1.16	0.63	0.53

Model	mUZP-120-12-J0L	Temperature: 25°C																													
Item	Efficiency																														
<p>■ Efficiency(by Input Voltage)</p>		<table border="1"> <thead> <tr> <th rowspan="2">AC Input Voltage [V]</th> <th colspan="2">Efficiency [%]</th> </tr> <tr> <th>50% Load</th> <th>Rated Load</th> </tr> </thead> <tbody> <tr><td>85</td><td>86.51</td><td>86.06</td></tr> <tr><td>100</td><td>87.09</td><td>87.95</td></tr> <tr><td>132</td><td>87.33</td><td>89.02</td></tr> <tr><td>176</td><td>88.00</td><td>90.00</td></tr> <tr><td>200</td><td>88.70</td><td>90.34</td></tr> <tr><td>220</td><td>89.12</td><td>90.52</td></tr> <tr><td>240</td><td>89.47</td><td>90.56</td></tr> <tr><td>264</td><td>89.59</td><td>90.68</td></tr> </tbody> </table>	AC Input Voltage [V]	Efficiency [%]		50% Load	Rated Load	85	86.51	86.06	100	87.09	87.95	132	87.33	89.02	176	88.00	90.00	200	88.70	90.34	220	89.12	90.52	240	89.47	90.56	264	89.59	90.68
AC Input Voltage [V]	Efficiency [%]																														
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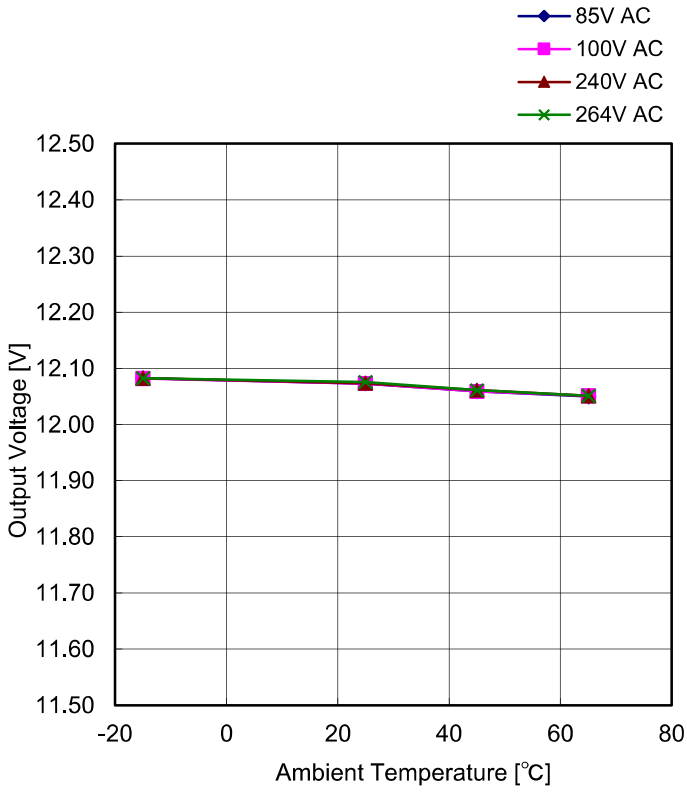
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<p>■ Power Factor (by Input Voltage)</p> <table border="1"> <thead> <tr> <th>AC Input Voltage [V]</th> <th>50% Load</th> <th>Rated Load</th> </tr> </thead> <tbody> <tr><td>85</td><td>98.5</td><td>98.8</td></tr> <tr><td>100</td><td>97.2</td><td>99.1</td></tr> <tr><td>132</td><td>92.5</td><td>97.2</td></tr> <tr><td>176</td><td>83.1</td><td>93.1</td></tr> <tr><td>200</td><td>76.9</td><td>89.5</td></tr> <tr><td>220</td><td>72.5</td><td>86.8</td></tr> <tr><td>240</td><td>69.3</td><td>83.0</td></tr> <tr><td>264</td><td>68.2</td><td>79.3</td></tr> </tbody> </table>				AC Input Voltage [V]	50% Load	Rated Load	85	98.5	98.8	100	97.2	99.1	132	92.5	97.2	176	83.1	93.1	200	76.9	89.5	220	72.5	86.8	240	69.3	83.0	264	68.2	79.3		
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Model	mUZP-120-12-J0L	Temperature: 25°C																		
Item	Line Regulation																			
<p>The graph plots Output Voltage [V] on the y-axis (ranging from 11.50 to 12.50) against AC Input Voltage [V] on the x-axis (ranging from 50 to 300). A single data series labeled 'Rated load' is shown as a blue line with diamond markers. The output voltage remains very stable, fluctuating only slightly around a mean value of approximately 12.07V across the entire input range.</p>		<table border="1"> <thead> <tr> <th>AC Input Voltage [V]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr> <td>85</td> <td>12.073</td> </tr> <tr> <td>100</td> <td>12.073</td> </tr> <tr> <td>132</td> <td>12.074</td> </tr> <tr> <td>176</td> <td>12.074</td> </tr> <tr> <td>200</td> <td>12.076</td> </tr> <tr> <td>220</td> <td>12.074</td> </tr> <tr> <td>240</td> <td>12.074</td> </tr> <tr> <td>264</td> <td>12.076</td> </tr> </tbody> </table>	AC Input Voltage [V]	Output Voltage [V]	85	12.073	100	12.073	132	12.074	176	12.074	200	12.076	220	12.074	240	12.074	264	12.076
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<p>The graph plots Output Voltage [V] on the y-axis (ranging from 11.50 to 12.50) against Load Power [W] on the x-axis (ranging from 0 to 250). Four data series are shown: 85V AC (blue diamonds), 100V AC (magenta squares), 240V AC (red triangles), and 264V AC (green crosses). All series show a nearly horizontal line at approximately 12.07V, indicating excellent load regulation across the entire power range.</p>		<table border="1"> <thead> <tr> <th rowspan="2">Load Power [W]</th> <th colspan="4">Output Voltage [V]</th> </tr> <tr> <th>Input Voltage 85V AC</th> <th>Input Voltage 100V AC</th> <th>Input Voltage 240V AC</th> <th>Input Voltage 264V AC</th> </tr> </thead> <tbody> <tr> <td>0.0</td> <td>12.078</td> <td>12.079</td> <td>12.079</td> <td>12.079</td> </tr> <tr> <td>25.2</td> <td>12.078</td> <td>12.078</td> <td>12.078</td> <td>12.078</td> </tr> <tr> <td>50.4</td> <td>12.078</td> <td>12.077</td> <td>12.078</td> <td>12.077</td> </tr> <tr> <td>75.6</td> <td>12.077</td> <td>12.077</td> <td>12.077</td> <td>12.076</td> </tr> <tr> <td>100.8</td> <td>12.076</td> <td>12.074</td> <td>12.073</td> <td>12.073</td> </tr> <tr> <td>200.4</td> <td>12.072</td> <td>12.072</td> <td>12.072</td> <td>12.072</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th rowspan="2">Load Power [W]</th> <th colspan="2">Load Condition</th> </tr> <tr> <th colspan="2">Load Current [A]</th> </tr> </thead> <tbody> <tr> <td>0.0</td> <td colspan="2">12V</td> </tr> <tr> <td>0.0</td> <td colspan="2">0.00</td> </tr> <tr> <td>25.2</td> <td colspan="2">2.10</td> </tr> <tr> <td>50.4</td> <td colspan="2">4.20</td> </tr> <tr> <td>75.6</td> <td colspan="2">6.30</td> </tr> <tr> <td>100.8</td> <td colspan="2">8.40</td> </tr> <tr> <td>200.4</td> <td colspan="2">16.70</td> </tr> </tbody> </table>	Load Power [W]	Output Voltage [V]				Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC	0.0	12.078	12.079	12.079	12.079	25.2	12.078	12.078	12.078	12.078	50.4	12.078	12.077	12.078	12.077	75.6	12.077	12.077	12.077	12.076	100.8	12.076	12.074	12.073	12.073	200.4	12.072	12.072	12.072	12.072	Load Power [W]	Load Condition		Load Current [A]		0.0	12V		0.0	0.00		25.2	2.10		50.4	4.20		75.6	6.30		100.8	8.40		200.4	16.70	
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Model mUZZP-120-12-J0L

Item Ambient Temperature Drift



Ambient Temp. (°C)	Output Voltage [V]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
-15	12.083	12.082	12.083	12.083
25	12.073	12.073	12.074	12.076
45	12.059	12.059	12.061	12.061
65	12.050	12.051	12.051	12.051

Load Condition

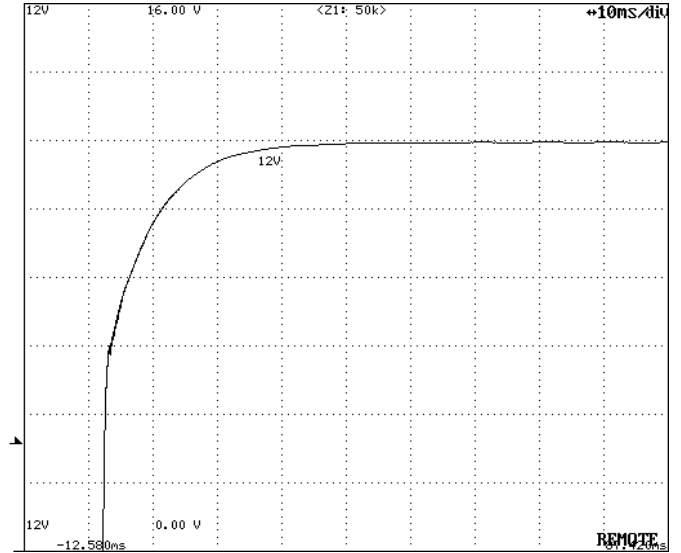
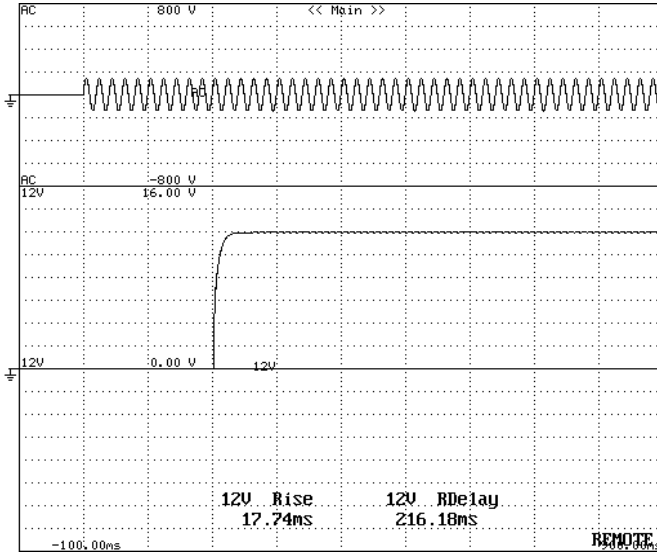
Ambient Temp. (°C)	Load Current [A]
	12V
-15	8.40
25	8.40
45	8.40
65	5.83

Model	mUZP-120-12-J0L	Temperature: 25°C
Item	Output Rise Characteristics (at AC Power ON)	

Input: 100V AC
Load: Rated Load

Timebase Range: 100ms/div

Vertical Sensitivity: 2V/div
Timebase Range: 10ms/div



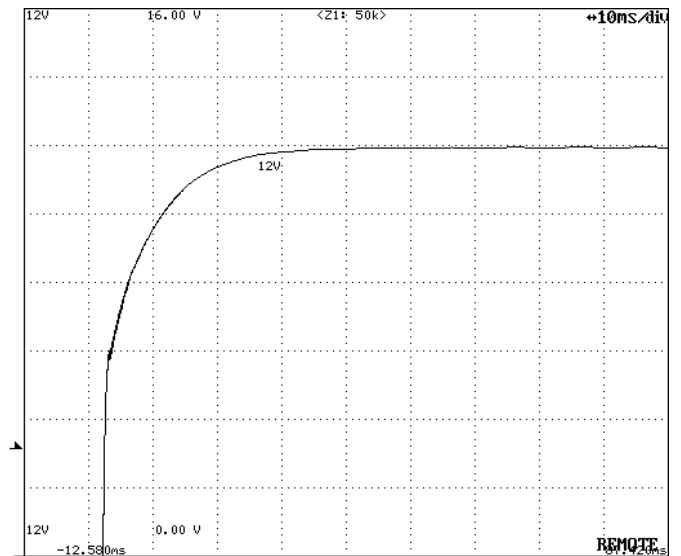
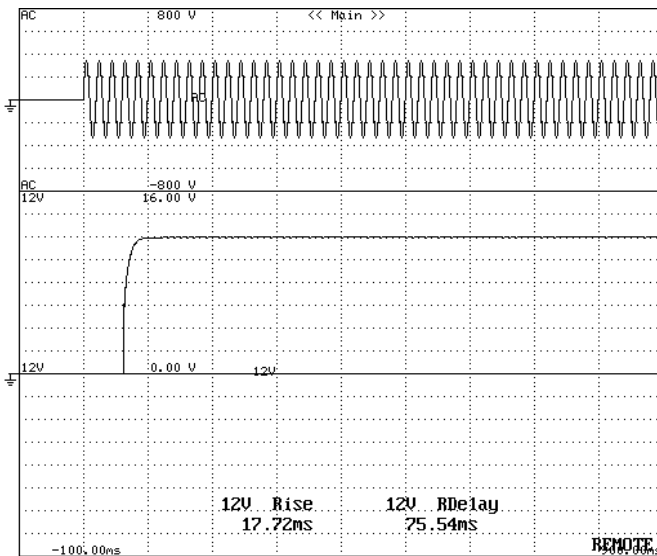
All Output Start-up Sequence

12V DC Output Rise Characteristics

Input: 240V AC
Load: Rated Load

Timebase Range: 100ms/div

Vertical Sensitivity: 2V/div
Timebase Range: 10ms/div



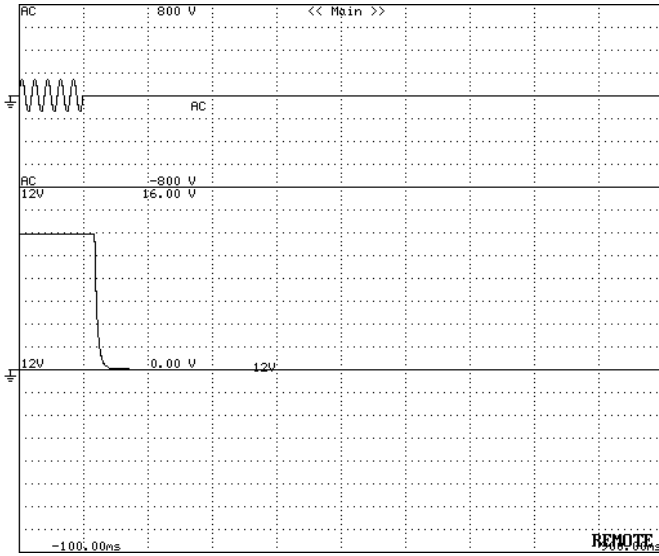
All Output Start-up Sequence

12V DC Output Rise Characteristics

Model	mUZP-120-12-J0L	Temperature: 25°C
Item	Output Fall Characteristics (at AC Power OFF)	

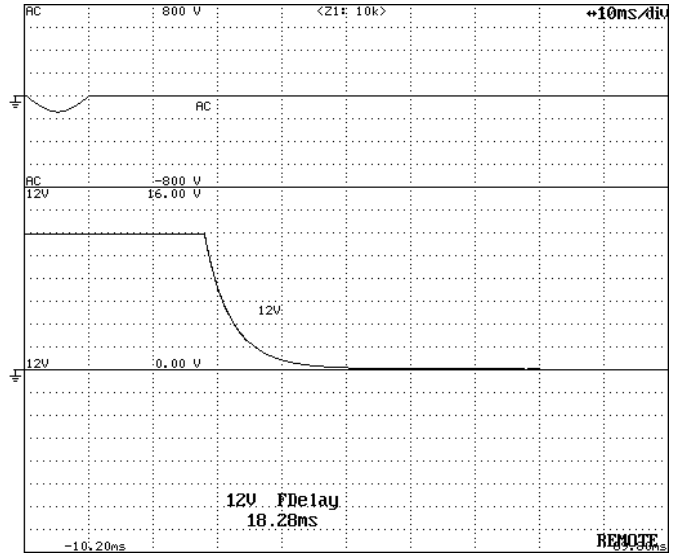
Input: 100V AC
Load: Rated Load

Timebase Range: 100ms/div



Output Fall Characteristics

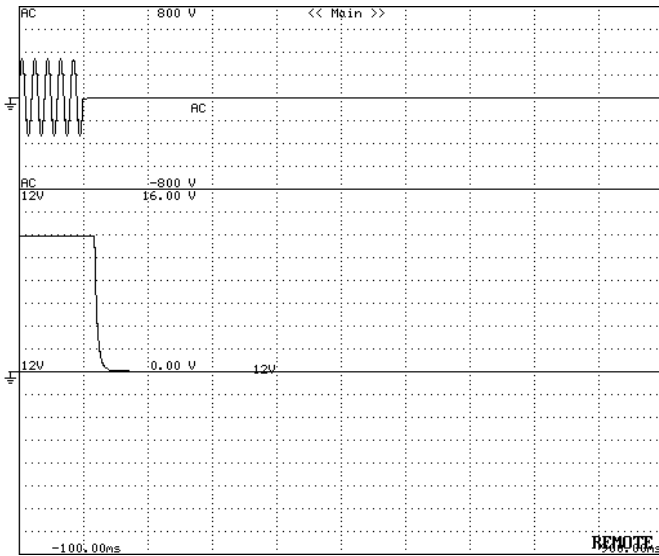
Timebase Range: 10ms/div



Output Fall Characteristics (magnification)

Input: 240V AC
Load: Rated Load

Timebase Range: 100ms/div



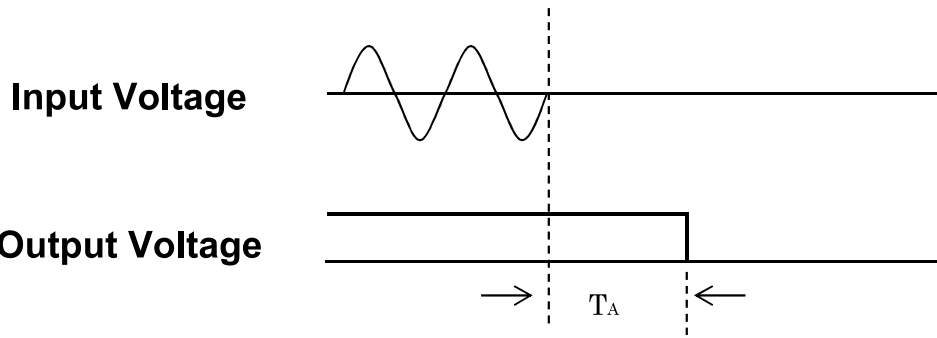
Output Fall Characteristics

Timebase Range: 10ms/div

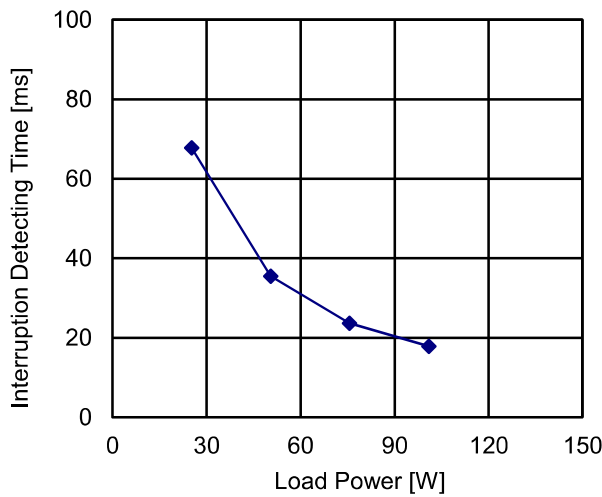


Output Fall Characteristics (magnification)

Model	mUZP-120-12-J0L	Temperature: 25°C
Item	Instantaneous Interruption Compensation (by Load Power)	

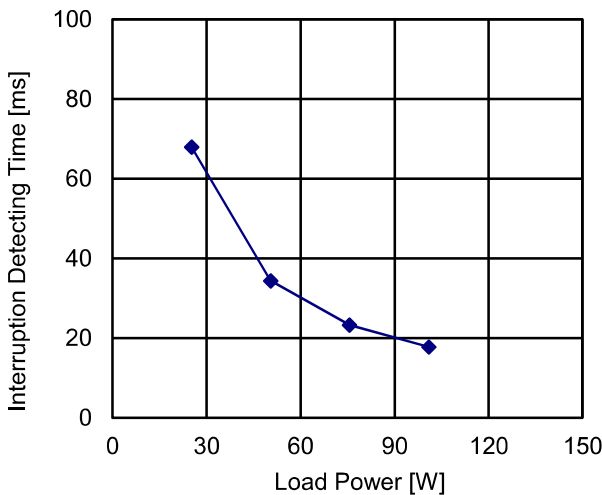


Input Voltage:100V AC



Load Power [W]	Interruption Detecting Time [ms]
	Ouput Voltage
	T _A
25.20	67.8
50.4	35.5
75.60	23.7
100.8	17.9

Input Voltage:240V AC

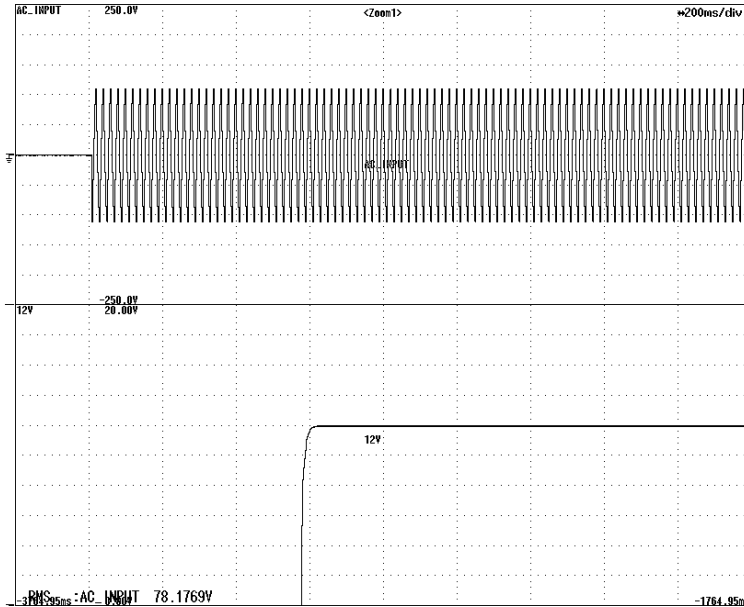


Load Power [W]	Interruption Detecting Time [ms]
	Ouput Voltage
	T _A
25.20	68.0
50.4	34.4
75.60	23.3
100.8	17.8

Model	mUZP-120-12-J0L	Temperature: 25°C
Item	Start-Up Voltage	

Timebase Range: 200ms/div
Load: Rated Load

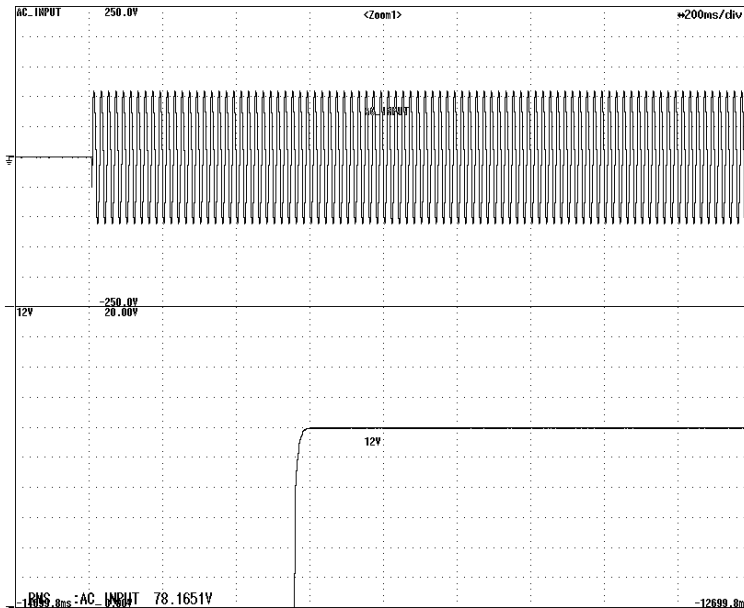
AC Input



Start-up Voltage: 78.2V AC

Timebase Range: 200ms/div
Load: Minimum Load

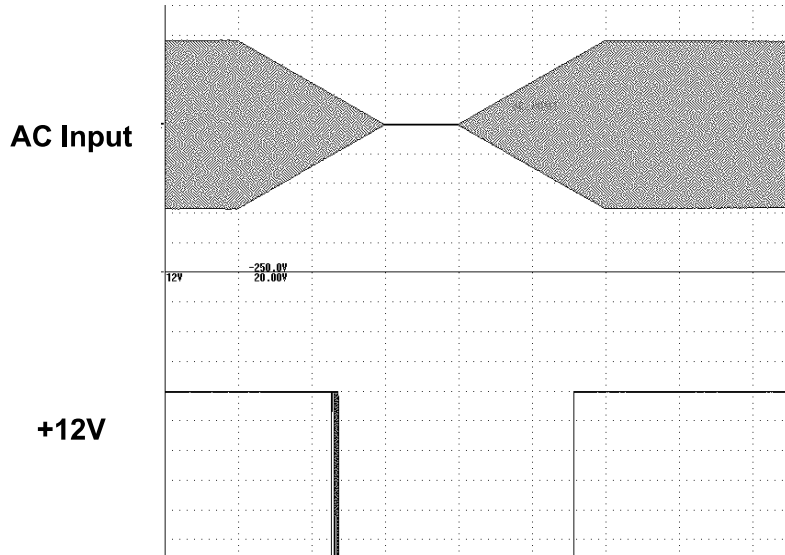
AC Input



Start-up Voltage: 78.2V AC

Model	mUZP-120-12-J0L	Temperature: 25°C
Item	Input Voltage Sweep Up/Down	

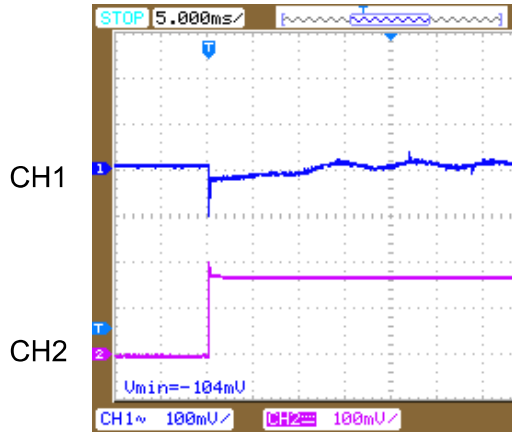
Timebase Range: 5s/div
Load: Rated Load



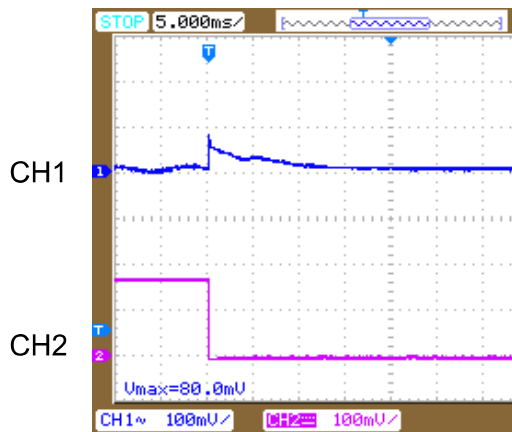
Sweep Rate: 10Vave/sec

Model	mUZP-120-12-J0L	Temperature: 25°C
Item	Dynamic Load Response	

+12V DC Output Transient Response Waveforms

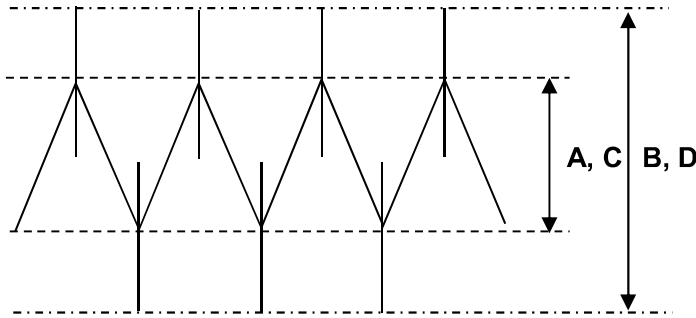


Waveform 1	
CH1	Measuring Point: DC Output Voltage
	Vertical Sensitivity: 100mV/div
CH2	Measuring Point: DC Output Current
	Vertical Sensitivity: 5A/div
Timebase Range	5ms/div
Condition	Input: 100V AC
Note: Minimum load(0A) → Rated Load(8.4A)	



Waveform 2	
CH1	Measuring Point: DC Output Voltage
	Vertical Sensitivity: 100mV/div
CH2	Measuring Point: DC Output Current
	Vertical Sensitivity: 5A/div
Timebase Range	5ms/div
Condition	Input: 100V AC
Note: Rated Load(8.4A) → Minimum load(0A)	

Model	mUZF-120-12-J0L	Load: Rated Load
Item	Ripple / Noise Voltage	

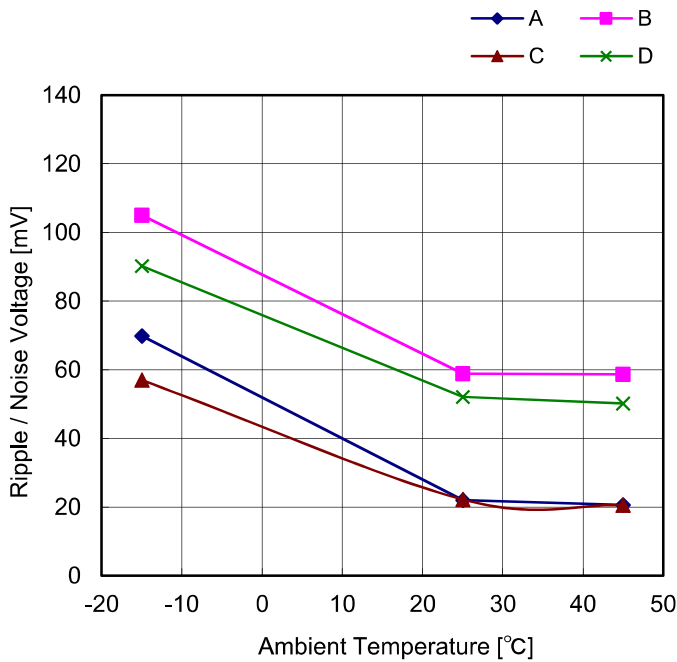


at 100V AC

A: Ripple Voltage (mV_{P-P})
 B: Noise Voltage (mV_{P-P})

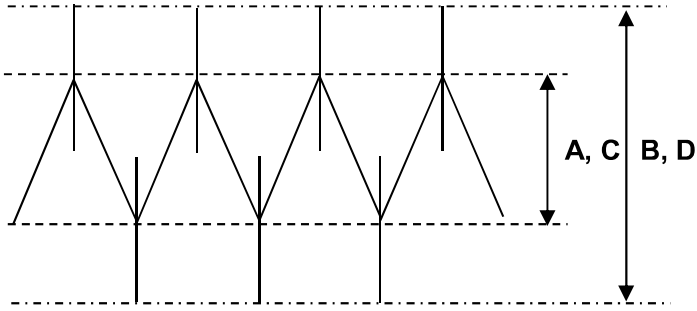
at 240V AC

C: Ripple Voltage (mV_{P-P})
 D: Noise Voltage (mV_{P-P})



Ambient Temp. [°C]	Ripple / Noise Voltage [mV]			
	A	B	C	D
-15	69.8	105.0	57.0	90.2
25	22.0	58.8	22.2	52.1
45	20.6	58.7	20.5	50.1

Model	mUZF-120-12-J0L	Temperature : 25°C
Item	Ripple / Noise Voltage	

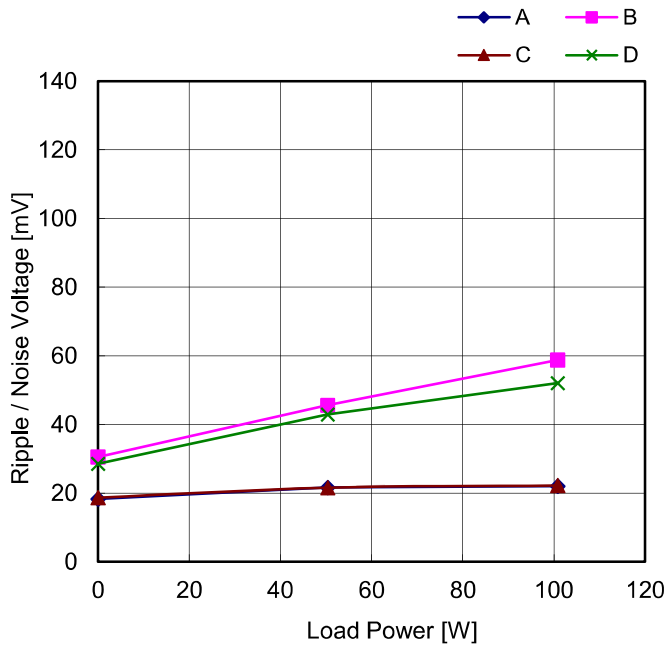


at 100V AC

A: Ripple Voltage (mVP-P)
B: Noise Voltage (mVP-P)

at 240V AC

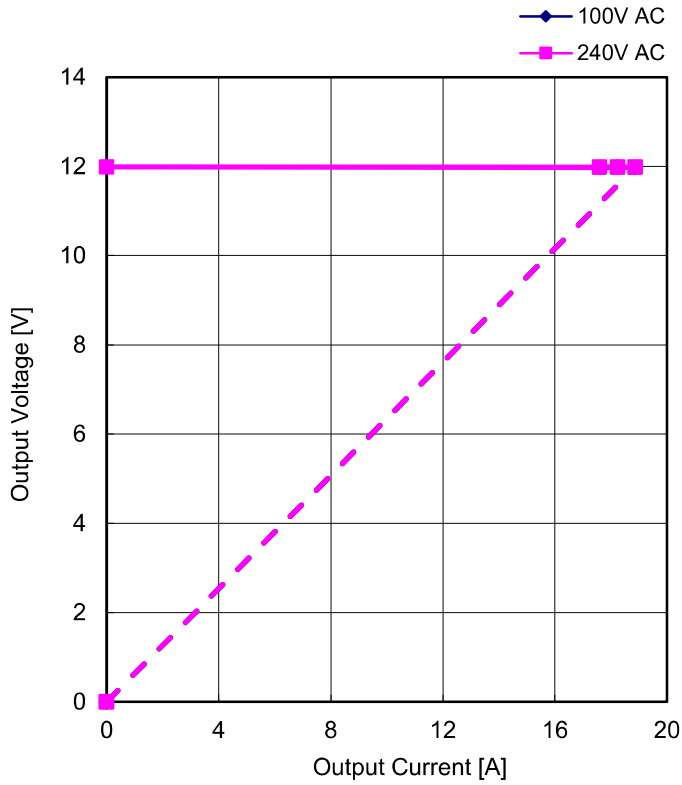
C: Ripple Voltage (mVP-P)
D: Noise Voltage (mVP-P)



Load Power [W]	Ripple / Noise Voltage [mV]			
	A	B	C	D
0	18.3	30.5	18.7	28.5
50.4	21.7	45.6	21.6	42.9
100.8	22.0	58.8	22.2	52.1

Model	mUZP-120-12-J0L	Temperature: 25°C
Item	Over-Current Protection	

V-I Characteristics of 12V O.C.P



Input Voltage: 100V AC		Input Voltage: 240V AC	
Output Current [A]	Output Voltage [V]	Output Current [A]	Output Voltage [V]
0.00	11.99	0.00	11.99
17.60	11.98	17.60	11.98
18.25	11.98	18.25	11.98
18.87	11.98	18.87	11.98

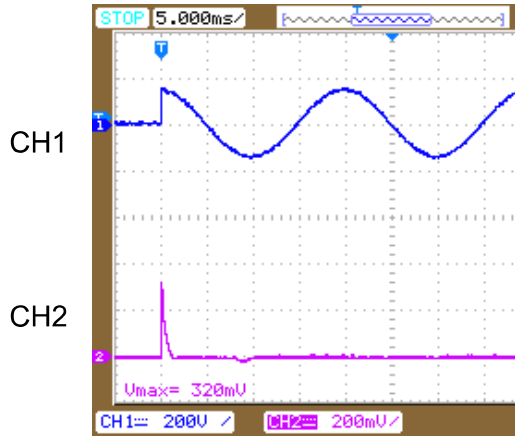
Model	mUZP-120-12-J0L	Load: Minimum Load
Item	Over-Voltage Protection	

The graph plots Output Voltage [V] on the y-axis (ranging from 10.0 to 20.0) against Ambient Temperature [°C] on the x-axis (ranging from -20 to 80). Two data series are shown: 100V AC (blue line with diamond markers) and 240V AC (magenta line with square markers). The 240V AC series shows a slight upward trend in output voltage as temperature increases, while the 100V AC series is not clearly visible, likely overlapping with the 240V AC series.

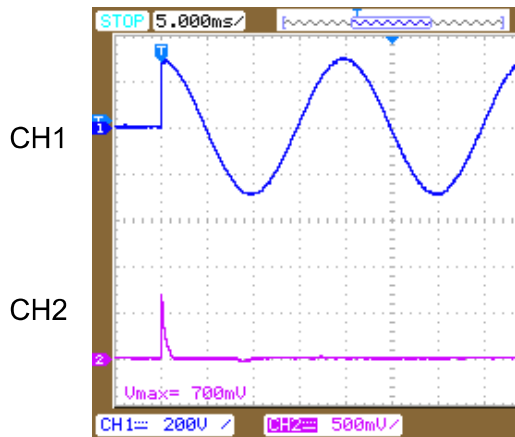
Ambient Temp. [°C]	Output Voltage [V]	
	100V AC	240V AC
-15	14.85	14.86
25	14.94	14.95
45	14.95	14.93
65	15.00	15.06

Model	mUZP-120-12-J0L	Temperature: 25°C
Item	Inrush Current	Load: Rated Load

Inrush Current Waveforms



Waveform 1	
CH1	Measuring Point: AC Input Voltage
	Range: 200V/div
CH2	Measuring Point: AC Input Current
	Range: 10A/div
Timebase Range	5ms/div
Condition	Input: 100V AC Load: Rated Load
Note: Inrush Current: 16.0A	



Waveform 2	
CH1	Measuring Point: AC Input Voltage
	Range: 200V/div
CH2	Measuring Point: AC Input Current
	Range: 25A/div
Timebase Range	5ms/div
Condition	Input: 200V AC Load: Rated Load
Note: Inrush Current: 35.0A	

Model	mUZP-120-12-J0L	Load: Rated Load																																				
Item	Leakage Current																																					
<p>The graph plots Leakage Current [mA] on the y-axis (0 to 1) against AC Input Voltage [V] on the x-axis (50 to 300). The data points are as follows:</p> <table border="1"> <thead> <tr> <th>AC Input Voltage [V]</th> <th>Leakage Current [mA]</th> </tr> </thead> <tbody> <tr><td>85</td><td>0.02</td></tr> <tr><td>100</td><td>0.03</td></tr> <tr><td>132</td><td>0.04</td></tr> <tr><td>176</td><td>0.05</td></tr> <tr><td>200</td><td>0.06</td></tr> <tr><td>220</td><td>0.07</td></tr> <tr><td>240</td><td>0.08</td></tr> <tr><td>264</td><td>0.09</td></tr> </tbody> </table>		AC Input Voltage [V]	Leakage Current [mA]	85	0.02	100	0.03	132	0.04	176	0.05	200	0.06	220	0.07	240	0.08	264	0.09	<table border="1"> <thead> <tr> <th>AC Input Voltage [V]</th> <th>Leakage Current [mA]</th> </tr> </thead> <tbody> <tr><td>85</td><td>0.02</td></tr> <tr><td>100</td><td>0.03</td></tr> <tr><td>132</td><td>0.04</td></tr> <tr><td>176</td><td>0.05</td></tr> <tr><td>200</td><td>0.06</td></tr> <tr><td>220</td><td>0.07</td></tr> <tr><td>240</td><td>0.08</td></tr> <tr><td>264</td><td>0.09</td></tr> </tbody> </table>	AC Input Voltage [V]	Leakage Current [mA]	85	0.02	100	0.03	132	0.04	176	0.05	200	0.06	220	0.07	240	0.08	264	0.09
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