Supplemental test data
(参考資料)

Date of issue: Jun. 28, 2011

Test Data

Model Number: OZ-015-15

Model Name: DC POWER SUPPLY

INPUT: 85V – 264V AC, 50 / 60 Hz

OUTPUT: 15 V 1.0A

Minimum load : 0W
Rated load :15W

Approved by : Makoto Urasue (QA manager)

Designed by : A. Takeda (R&D engineer)

Tested by : Kohei Sawada (Evaluation test engineer)

Nipron Co., Ltd.

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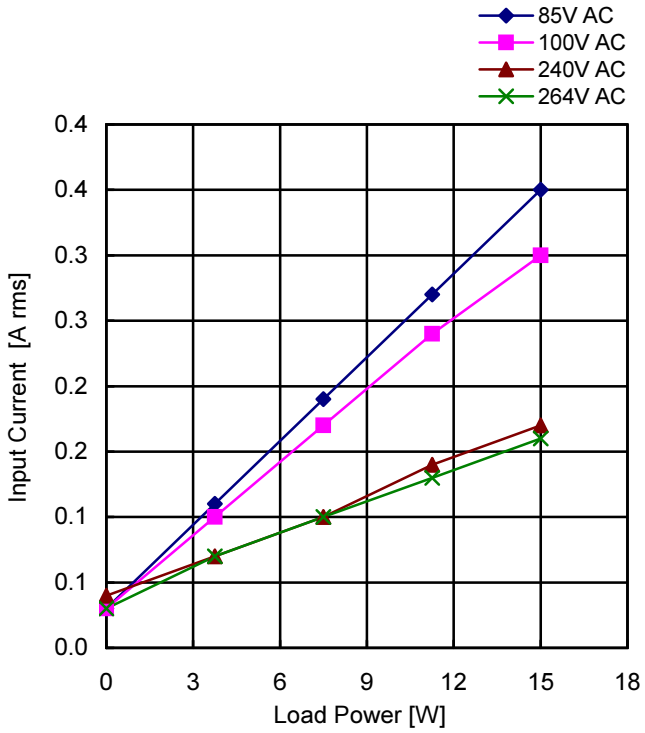
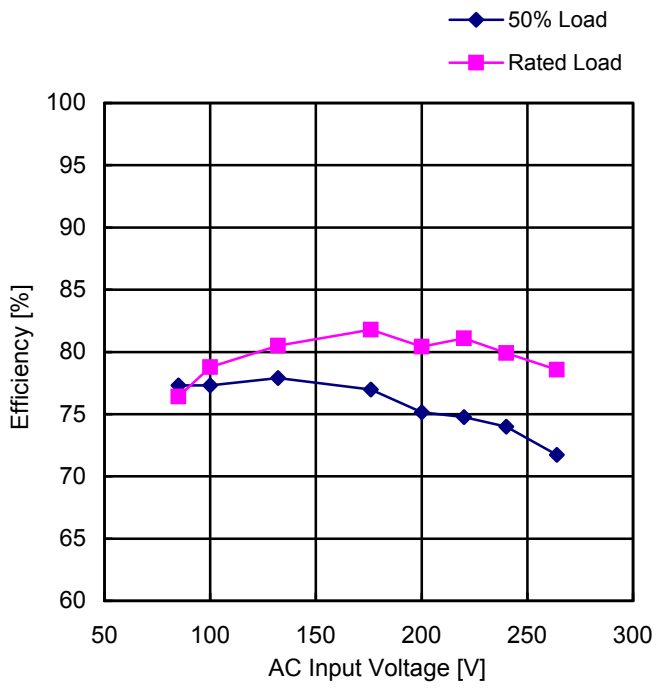
Model	OZ-15-15	Temperature: 25℃
Item	Input Current（by Load Power）	



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	0.03	0.03	0.04	0.03
3.75	0.11	0.10	0.07	0.07
7.5	0.19	0.17	0.10	0.10
11.25	0.27	0.24	0.14	0.13
15.0	0.35	0.30	0.17	0.16

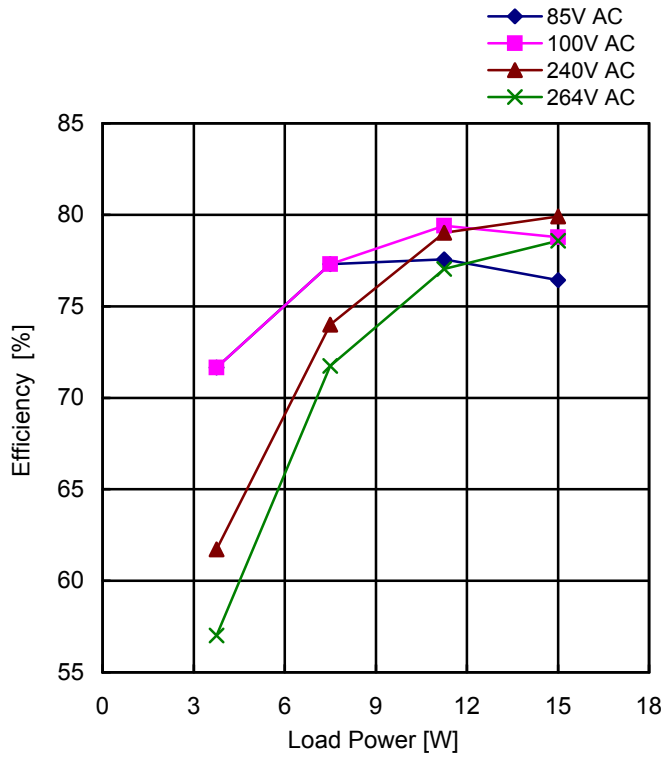
Model	OZ-15-15	Temperature: 25℃
Item	Efficiency	

■Efficiency(by Input Voltage)



AC Input Voltage [V]	Efficiency [%]	
	50% Load	Rated Load
85	77.31	76.42
100	77.31	78.77
132	77.90	80.51
176	76.99	81.78
200	75.16	80.43
220	74.77	81.10
240	74.00	79.90
264	71.73	78.58

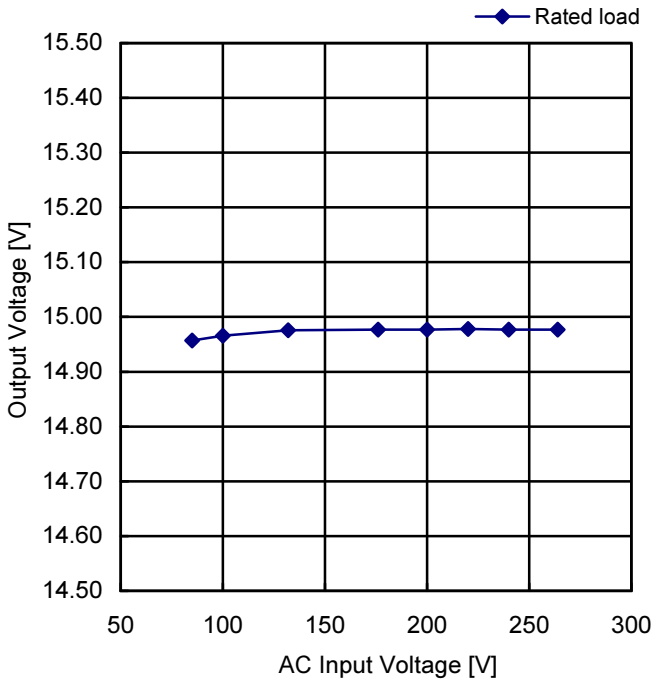
■Efficiency(by Load Power)



Load Power [W]	Efficiency [%]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
3.75	71.65	71.65	61.72	57.01
7.5	77.31	77.31	74.00	71.73
11.25	77.57	79.40	79.02	77.04
15.0	76.42	78.77	79.90	78.58

Model	OZ-15-15	Temperature: 25℃
Item	Line Regulation	

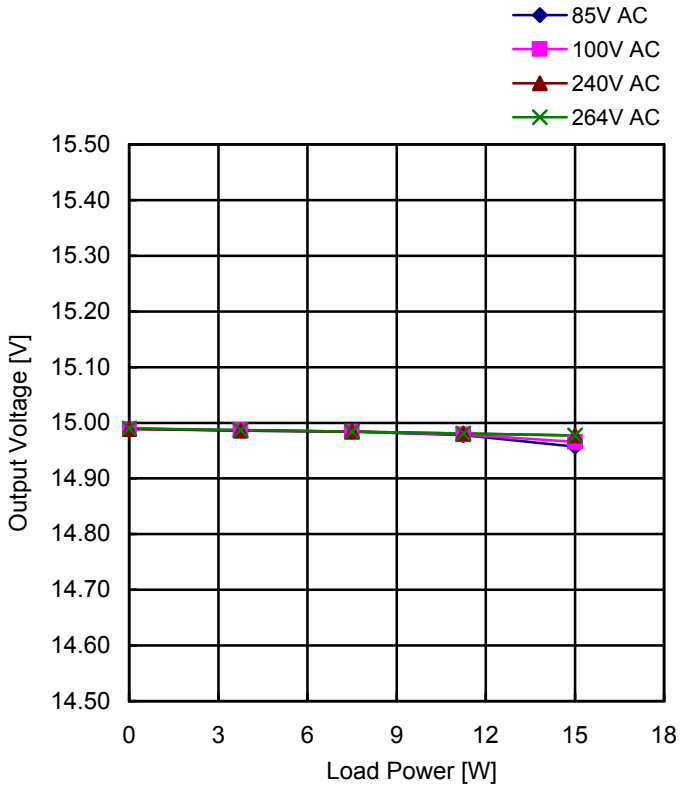
15V/1A



AC Input Voltage [V]	Output Voltage [V]
85	14.957
100	14.966
132	14.976
176	14.977
200	14.977
220	14.978
240	14.977
264	14.977

Model	OZ-15-15	Temperature: 25℃
Item	Load Regulation	

15V



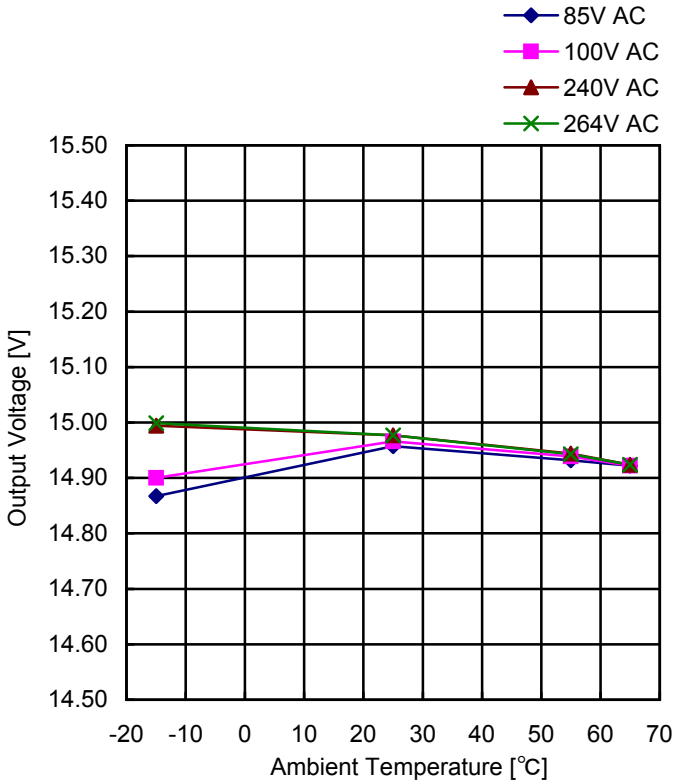
Load Power [W]	Output Voltage [V]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
0.0	14.990	14.989	14.989	14.990
3.75	14.986	14.987	14.986	14.987
7.5	14.984	14.984	14.984	14.984
11.25	14.978	14.979	14.981	14.981
15.0	14.957	14.966	14.977	14.977
-	-	-	-	-

Load Condition

Load Power [W]	Load Current [A]
	15V
0.0	0.00
3.75	0.25
7.5	0.50
11.25	0.75
15.0	1.00
-	-

Model	OZ-15-15
Item	Ambient Temperature Drift

15V



Ambient Temp. (℃)	Output Voltage [V]			
	Input Voltage 85V AC	Input Voltage 100V AC	Input Voltage 240V AC	Input Voltage 264V AC
-15	14.867	14.900	14.994	14.999
25	14.957	14.966	14.977	14.977
55	14.932	14.939	14.944	14.943
65	14.922	14.922	14.924	14.924

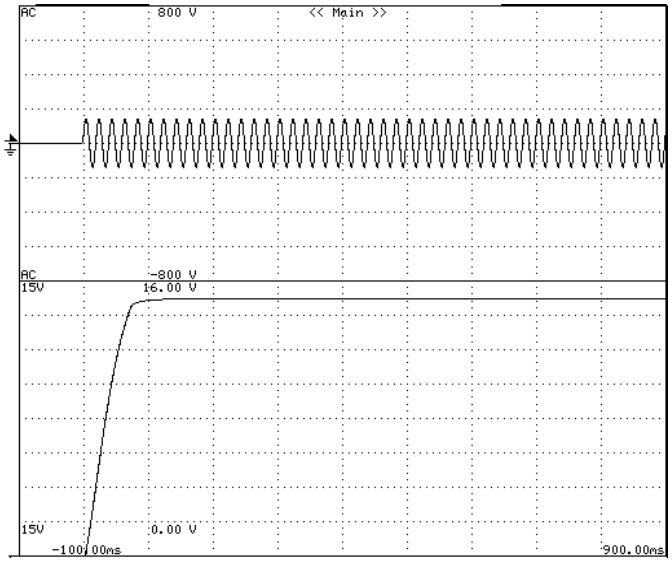
Load Condition

Ambient Temp. (℃)	Load Current [A]
	15V
-15	1.00
25	1.00
55	1.00
65	0.70

Model	OZ-015-15	Temperature: 25℃
Item	Output Rise Characteristics (at AC Power ON)	

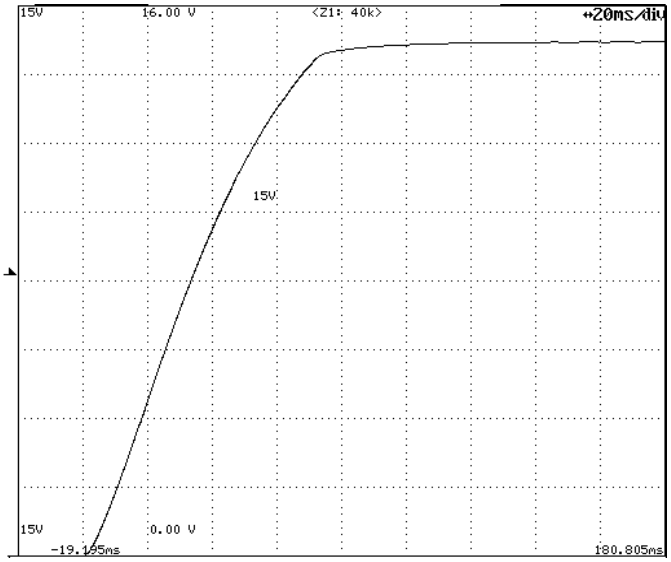
Input: 100V AC
Load: Rated Load

Timebase Range: 100ms/div



All Output Start-up Sequence

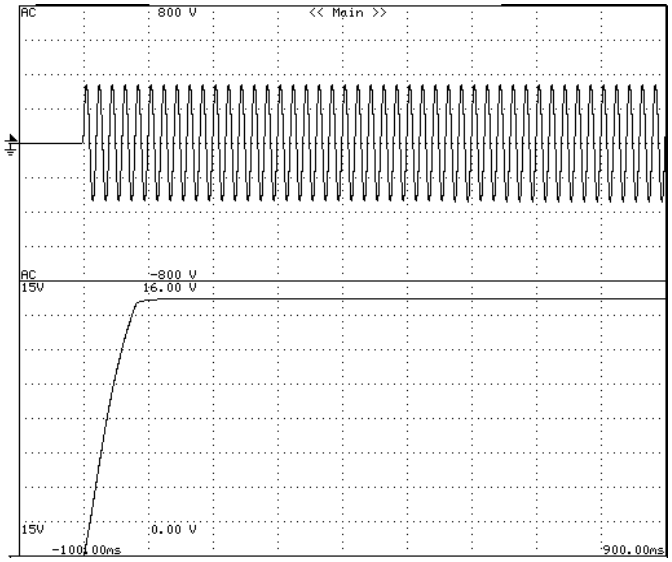
Vertical Sensitivity: 2V/div
Timebase Range: 20ms/div



15V DC Output Rise Characteristics

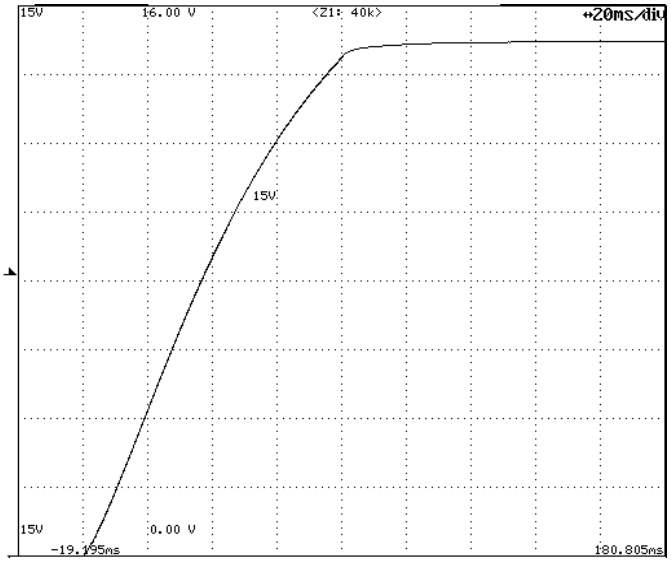
Input: 240V AC
Load: Rated Load

Timebase Range: 100ms/div



All Output Start-up Sequence

Vertical Sensitivity: 2V/div
Timebase Range: 20ms/div

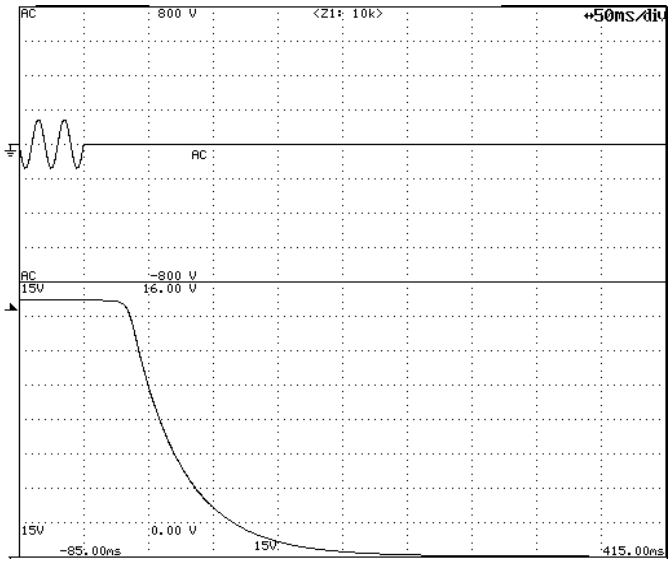


15V DC Output Rise Characteristics

Model	OZ-015-15	Temperature: 25℃
Item	Output Fall Characteristics (at AC Power OFF)	

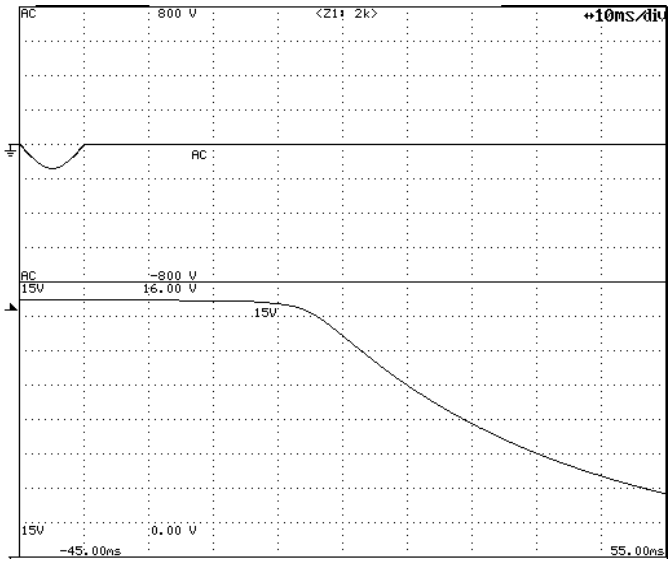
Input: 100V AC
Load: Rated Load

Timebase Range: 50ms/div



Output Fall Characteristics

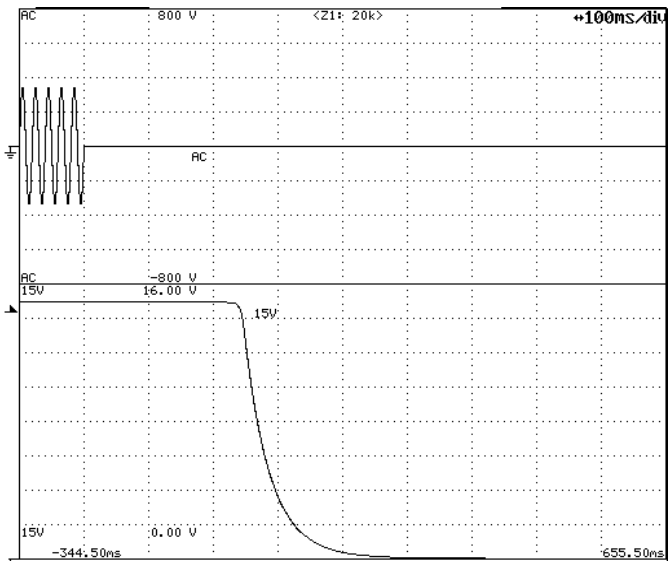
Timebase Range: 10ms/div



Output Fall Characteristics (magnification)

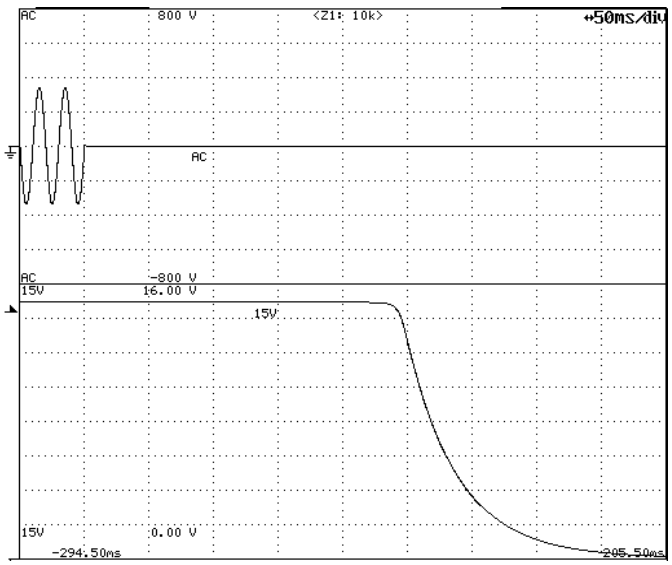
Input: 240V AC
Load: Rated Load

Timebase Range: 100ms/div



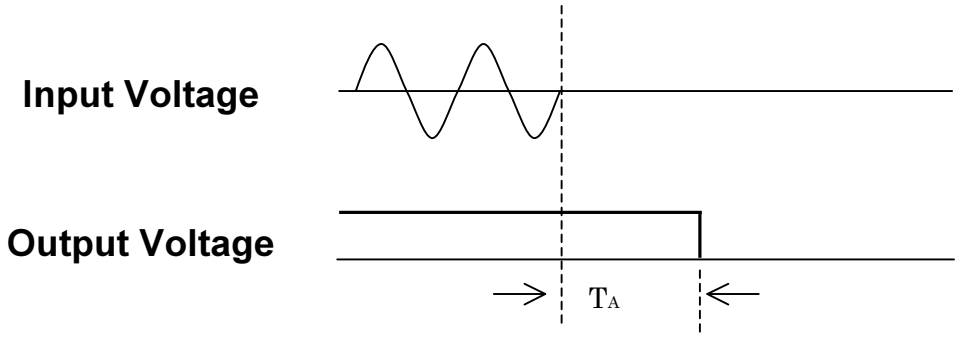
Output Fall Characteristics

Timebase Range: 50ms/div

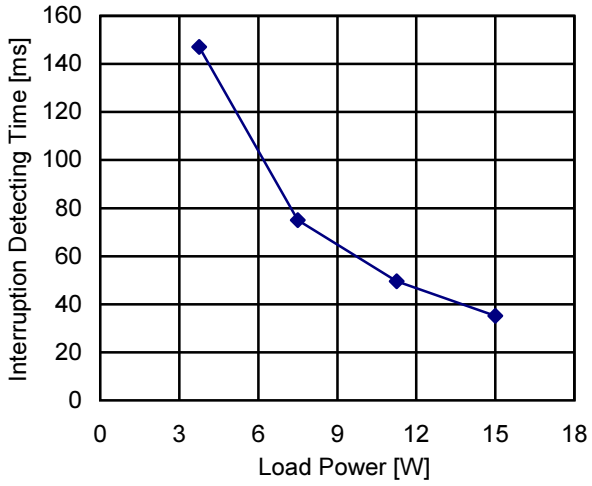


Output Fall Characteristics (magnification)

Model	OZ-015-15	Temperature: 25℃
Item	Instantaneous Interruption Compensation (by Load Power)	

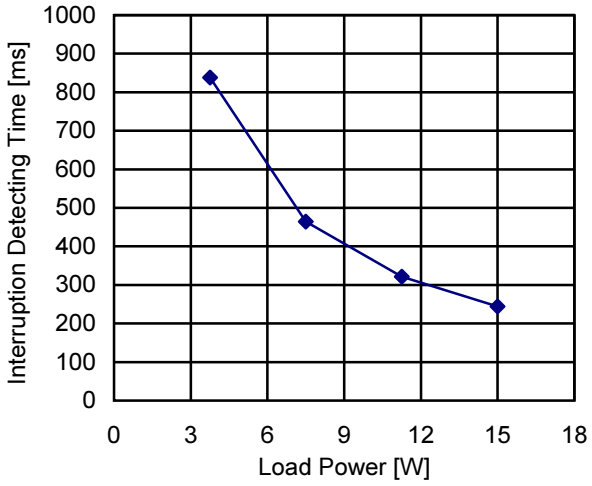


Input Voltage:100V AC



Load Power [W]	Interruption Detecting Time [ms]
	Ouput Voltage
	TA
3.75	147.0
7.5	75.0
11.25	49.5
15.0	35.2

Input Voltage:240V AC



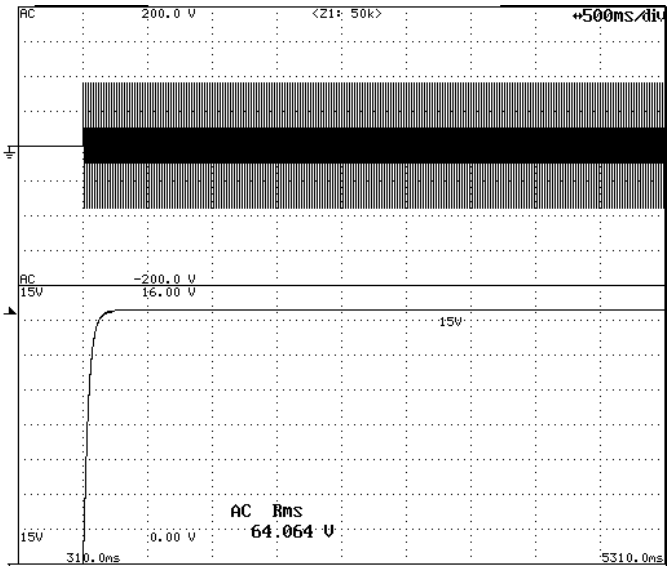
Load Power [W]	Interruption Detecting Time [ms]
	Ouput Voltage
	TA
3.75	838.4
7.5	464.1
11.25	321.7
15.0	243.9

Model	OZ-015-15	Temperature: 25℃
Item	Start-Up Voltage	

Timebase Range: 500ms/div
Load: Rated Load

AC Input

+15V

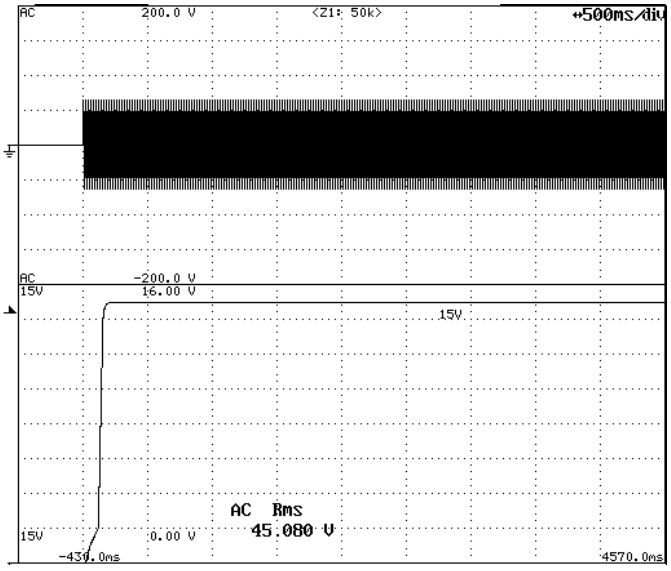


Start-up Voltage: 64.064V AC

Timebase Range: 500ms/div
Load: Minimum Load

AC Input

+15V



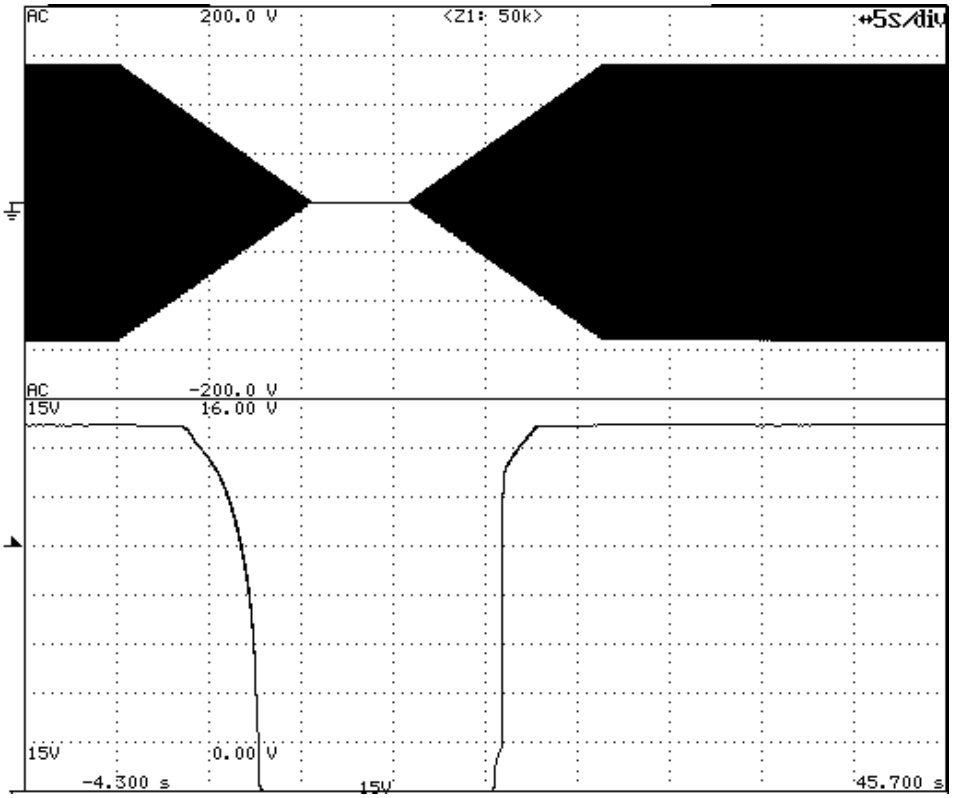
Start-up Voltage: 45.080V AC

Model	OZ-015-15	Temperature: 25℃
Item	Input Voltage Sweep Up/Down	

Timebase Range: 5s/div
Load: Rated Load

AC Input

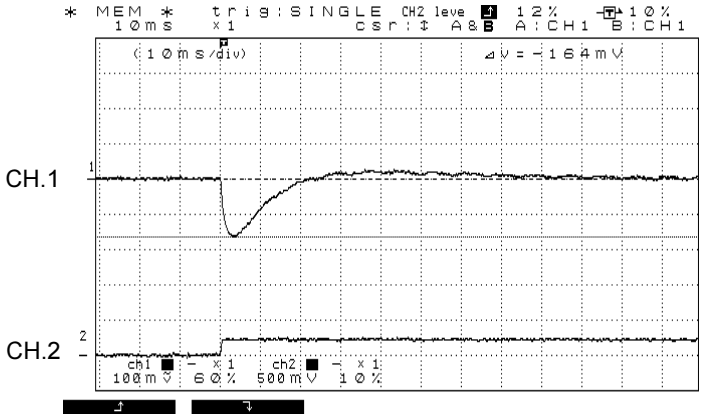
+15V

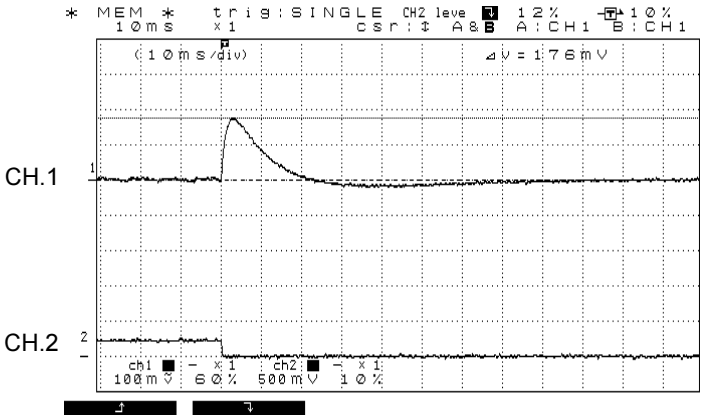


Sweep Rate: 10Vave/sec

Model	OZ-015-15	Temperature: 25℃
Item	Dynamic Load Response	

+15V DC Output Transient Response Waveforms

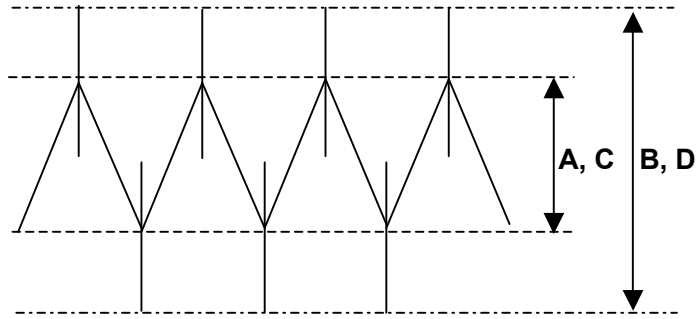




Waveform 1	
CH1	Measuring Point: DC Output Voltage
	Vertical Sensitivity: 100mV/div
CH2	Measuring Point: DC Output Current
	Vertical Sensitivity: 2.5A/div
Timebase Range	10ms/div
Condition	Input: 100V AC

Note:
Rated Load(1.0A) ⇌ Minimum load(0A)

Model	OZ-15-15	Load: Rated Load
Item	Ambient Temperature Drift	



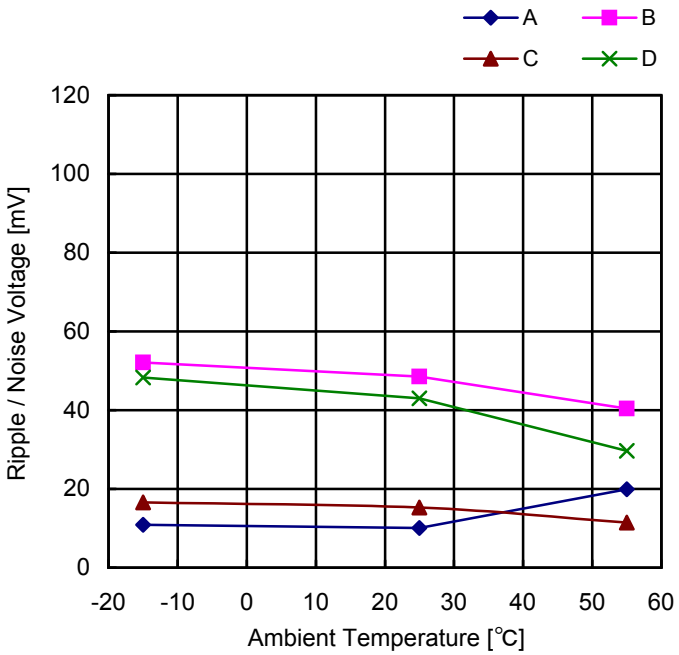
at 100V AC

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

at 240V AC

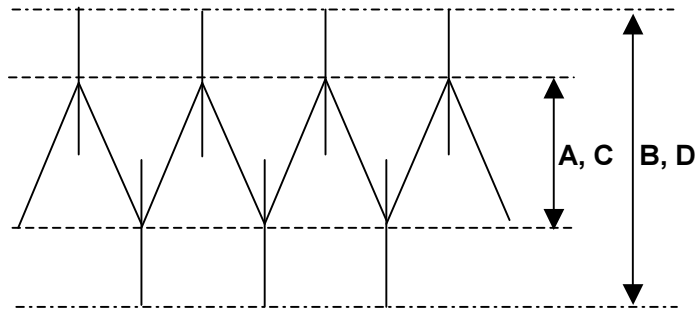
C: Ripple Voltage (mV_{P-P})
D: Noise Voltage (mV_{P-P})

15V



Ambient Temp. [℃]	Ripple / Noise Voltage [mV]			
	A	B	C	D
-15	10.9	52.1	16.6	48.3
25	10.1	48.5	15.3	43.0
55	19.9	40.4	11.5	29.7

Model	OZ-15-15	Temperature : 25℃
Item	Ambient Temperature Drift	



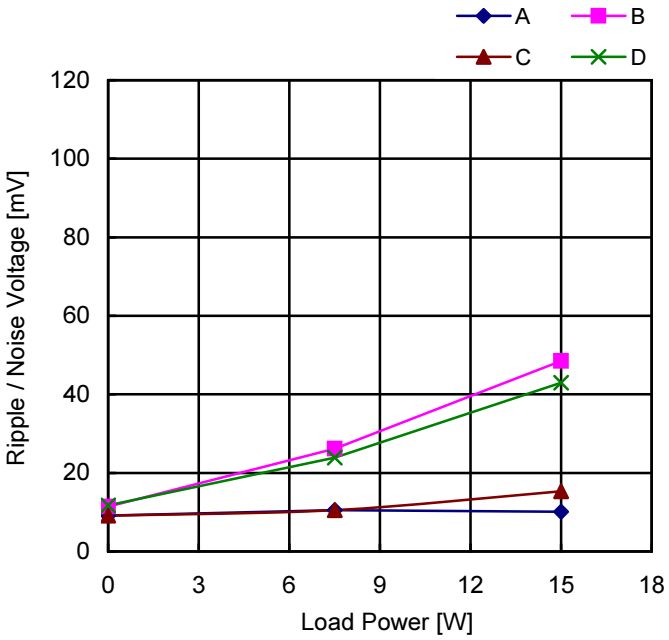
at 100V AC

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})

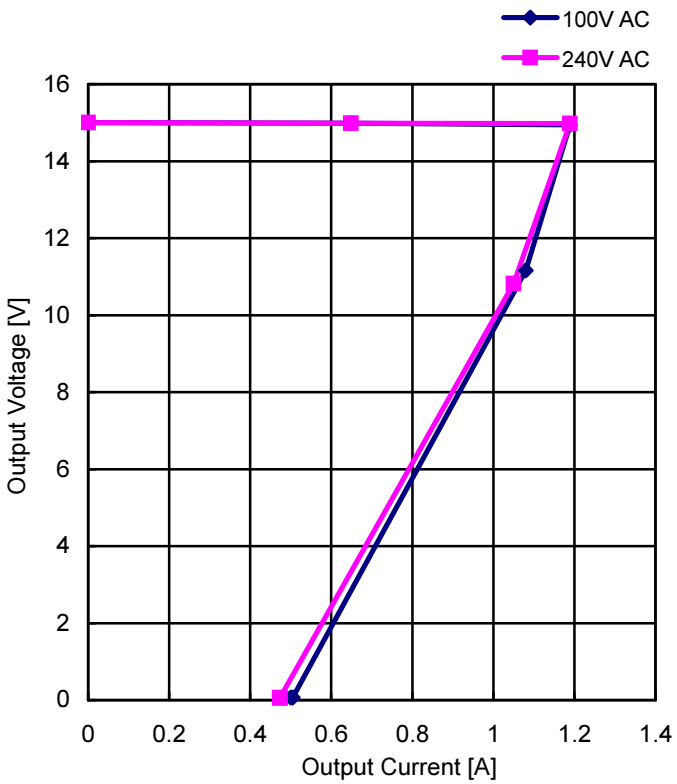
15V



Load Power [W]	Ripple / Noise Voltage [mV]			
	A	B	C	D
0	9.1	11.4	9.1	11.7
7.5	10.5	26.2	10.5	23.9
15.0	10.1	48.5	15.3	43.0

Model	OZ-15-15	Temperature: 25℃
Item	Over-Current Protection	

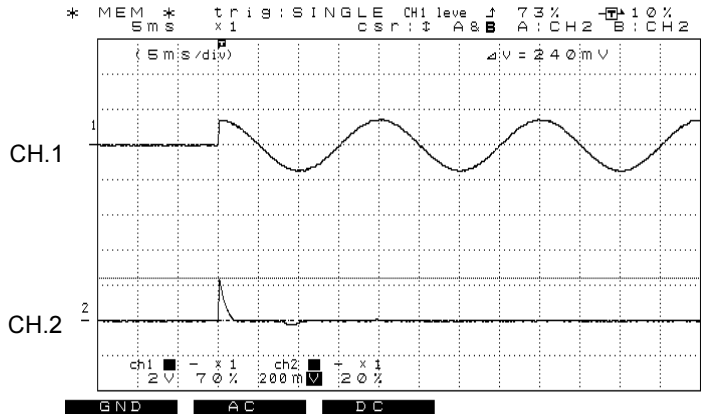
V-I Characteristics of 15V O.C.P



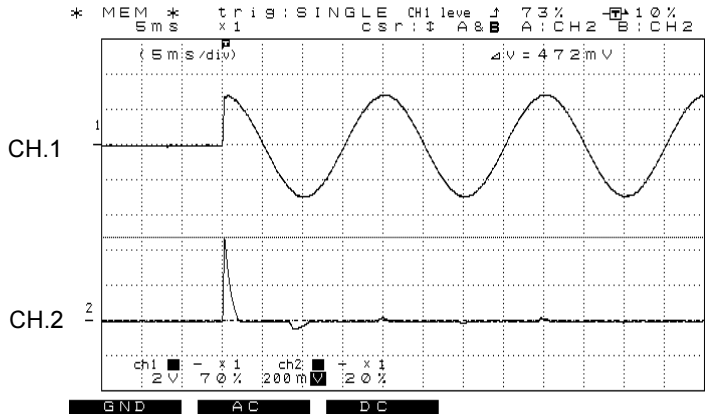
Input Voltage: 100V AC		Input Voltage: 240V AC	
Output Current [A]	Output Voltage [V]	Output Current [A]	Output Voltage [V]
0.00	15.00	0.00	15.00
0.65	14.98	0.65	14.98
1.19	14.94	1.19	14.97
1.08	11.16	1.05	10.82
0.51	0.06	0.47	0.06
0.50	0.06	0.47	0.06

Model	OZ-015-15	Temperature: 25℃
Item	Inrush Current	Load: Rated Load

Inrush Current Waveforms

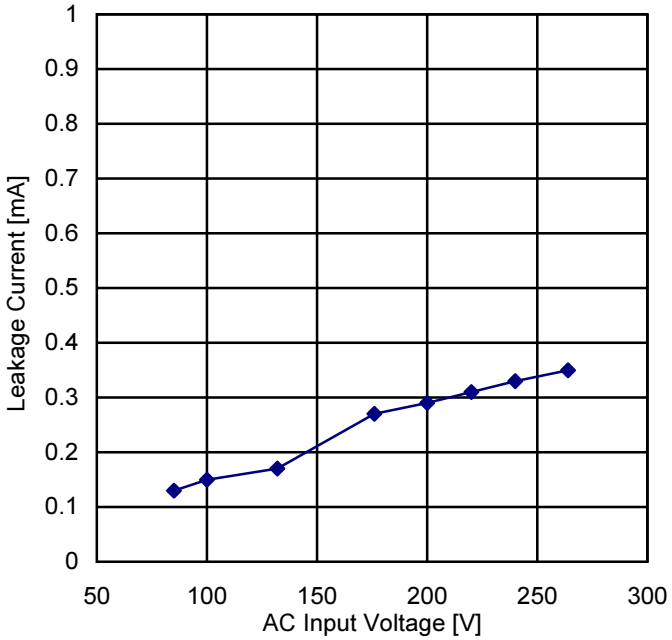


DATA 1	
CH1	Measuring Point: AC Input Voltage
	Range: 200V/div
CH2	Measuring Point: AC Input Current
	Range: 10A/div
Temporal Axis	5ms/div
Conditions	Input: 100V AC Load: Rated Load
Note: Inrush Current: 12.0A	



DATA 2	
CH1	Measuring Point: AC Input Voltage
	Range: 200V/div
CH2	Measuring Point: AC Input Current
	Range: 10A/div
Temporal Axis	5ms/div
Conditions	Input: 200V AC Load: Rated Load
Note: Inrush Current: 23.6A	

Model	OZ-015-15	Load: Rated Load
Item	Leakage Current	



AC Input Voltage [V]	Leakage Current [mA]
85	0.13
100	0.15
132	0.17
176	0.27
200	0.29
220	0.31
240	0.33
264	0.35