

**CHVM2-12-1500PW**

**EVALUATION DATA**

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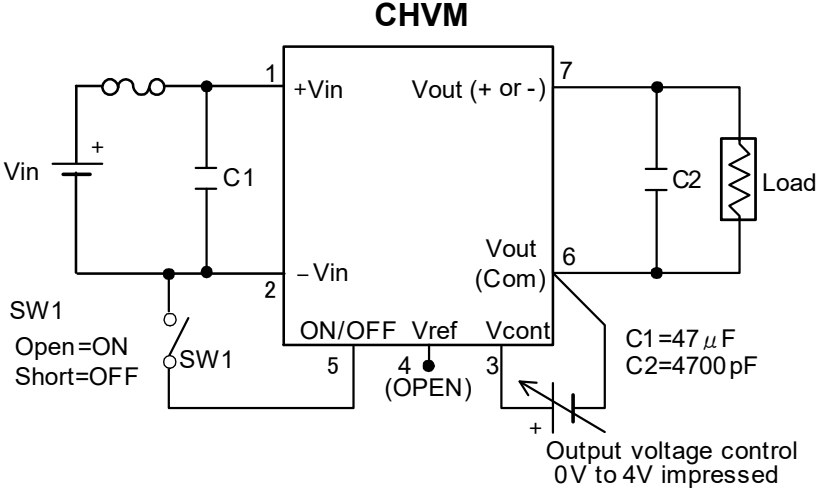
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## Definition

Vin	···Input voltage
Vout	···Output voltage
Iout	···Output current
Vcont	···Output voltage control
VON-OFF	···Output voltage ON/OFF control
Ta	···Ambient temperature
BW	···Bandwidth

Test results are reference data based on our measurement condition.

1. Test circuit



## 2. Steady State Characteristics

Condition Ta : -10°C

Test Item			Load : Open			Load : 1.125MΩ		
	Input Voltage	Vcont	Input Current	Output Voltage	Ripple/ Noise	Input Current	Output Voltage	Ripple/ Noise
	[V]	[V]	[mA]	[V]	[mV p-p]	[mA]	[V]	[mV p-p]
	10.8	4.0	75	1514.38	20	301	1514.58	20
		3.0	63	1137.21	15	234	1137.12	15
		2.0	52	760.46	10	168	760.35	10
		1.0	41	379.14	10	100	379.08	10
		0.0	30	3.91	5	30	1.10	5
	12.0	4.0	75	1514.21	20	301	1514.45	20
		3.0	63	1137.13	15	234	1137.06	15
		2.0	52	760.41	10	168	760.31	10
		1.0	41	379.11	10	100	379.04	10
		0.0	30	3.75	5	30	1.09	5
	16.5	4.0	75	1514.10	20	300	1514.19	20
		3.0	63	1136.97	15	234	1136.86	15
		2.0	52	760.31	10	167	760.19	10
	1.0	41	379.02	10	100	378.96	10	
	0.0	30	3.76	5	30	1.09	5	

	Spec	Data
Line reg.	-	0.39V
Load reg.	-	0.24V
Ripple/Noise	-	20mV p-p

## 2. Steady State Characteristics

Condition Ta : 25°C

Test Item			Load : Open			Load : 1.125MΩ		
	Input Voltage	Vcont	Input Current	Output Voltage	Ripple/ Noise	Input Current	Output Voltage	Ripple/ Noise
	[V]	[V]	[mA]	[V]	[mV p-p]	[mA]	[V]	[mV p-p]
	10.8	4.0	70	1511.69	15	296	1511.80	20
		3.0	60	1135.72	15	232	1135.60	15
		2.0	51	759.62	10	167	759.51	10
		1.0	42	377.73	10	101	377.66	10
		0.0	29	4.29	5	29	1.14	5
	12.0	4.0	70	1511.65	15	295	1511.72	20
		3.0	60	1135.69	15	232	1135.57	15
		2.0	51	759.60	10	167	759.48	10
		1.0	42	377.74	10	101	377.66	10
		0.0	29	3.98	5	29	1.12	5
	16.5	4.0	70	1511.53	15	295	1511.52	20
		3.0	60	1135.61	15	232	1135.46	15
		2.0	51	759.53	10	167	759.41	10
	1.0	42	377.67	10	101	377.61	10	
	0.0	30	3.97	5	30	1.12	5	

	Spec	Data
Line reg.	0.5V max	0.28V
Load reg.	0.5V max	0.07V
Ripple/Noise	100mV max	20mV p-p

## 2. Steady State Characteristics

Condition Ta : 50°C

Test Item			Load : Open			Load : 1.125MΩ		
	Input Voltage	Vcont	Input Current	Output Voltage	Ripple/ Noise	Input Current	Output Voltage	Ripple/ Noise
	[V]	[V]	[mA]	[V]	[mV p-p]	[mA]	[V]	[mV p-p]
	10.8	4.0	70	1515.40	15	295	1515.45	15
		3.0	61	1136.06	10	233	1135.80	10
		2.0	52	761.56	10	168	761.24	10
		1.0	42	378.26	10	102	378.21	10
		0.0	29	4.11	5	29	1.14	5
	12.0	4.0	70	1515.73	15	249	1515.48	15
		3.0	61	1136.01	10	232	1135.71	10
		2.0	51	761.33	10	169	761.22	10
		1.0	42	378.27	10	102	378.19	10
		0.0	29	3.95	5	29	1.13	5
	16.5	4.0	70	1515.66	15	294	1515.58	15
		3.0	61	1135.81	10	232	1135.56	10
		2.0	52	761.24	10	168	761.05	10
	1.0	42	378.18	10	102	378.10	10	
	0.0	29	3.96	5	29	1.12	5	

	Spec	Data
Line reg.	-	0.13V
Load reg.	-	0.25V
Ripple/Noise	-	15mV p-p

## 2. Steady State Characteristics

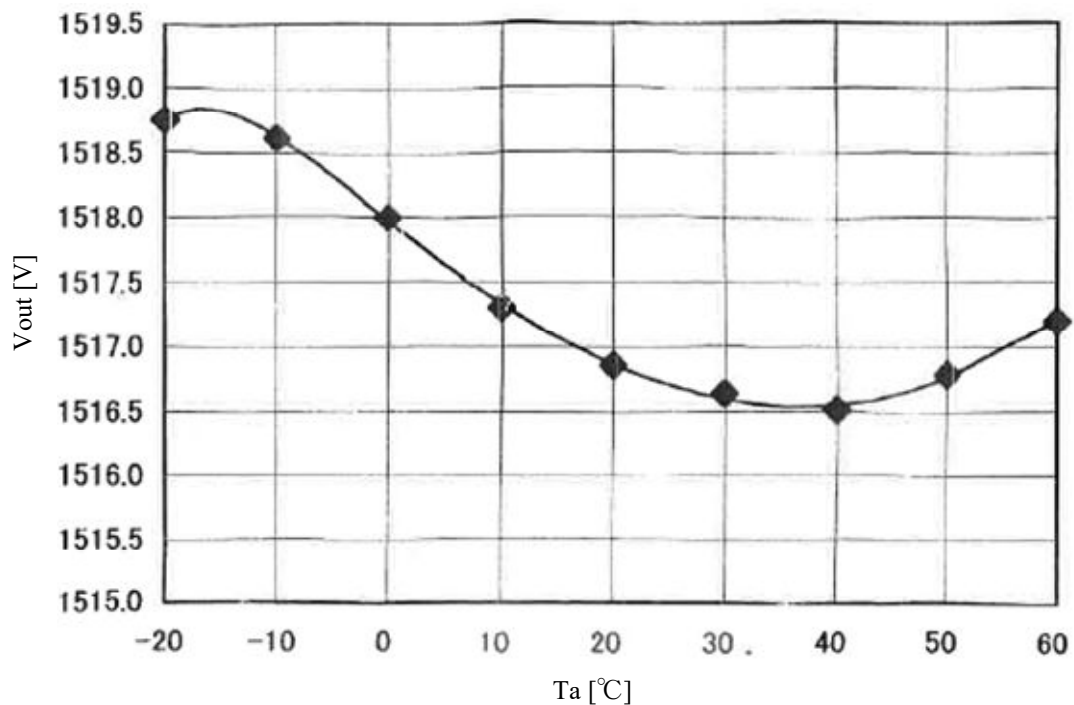
Condition Ta : 60°C

Test Item			Load : Open			Load : 1.125MΩ		
	Input Voltage	Vcont	Input Current	Output Voltage	Ripple/ Noise	Input Current	Output Voltage	Ripple/ Noise
	[V]	[V]	[mA]	[V]	[mV p-p]	[mA]	[V]	[mV p-p]
	10.8	4.0	70	1520.98	15	296	1521.21	15
		3.0	61	1139.66	15	232	1139.49	15
		2.0	52	760.34	10	168	760.15	10
		1.0	42	379.65	10	102	379.51	10
		0.0	29	3.89	5	29	1.13	5
	12.0	4.0	70	1520.97	15	295	1521.35	15
		3.0	61	1139.82	15	232	1139.51	15
		2.0	52	760.56	10	168	760.13	10
		1.0	42	379.53	10	102	379.47	10
		0.0	29	3.91	5	29	1.13	5
	16.5	4.0	70	1520.90	15	295	1521.17	15
		3.0	61	1139.74	15	232	1139.50	15
		2.0	52	760.86	10	168	760.74	10
	1.0	42	379.44	10	102	379.34	10	
	0.0	29	3.99	5	29	1.15	5	

	Spec	Data
Line reg.	-	0.04V
Load reg.	-	0.38V
Ripple/Noise	-	15mV p-p

### 3. Temperature Regulation

Conditions      Vin      : 12V  
 Load            : 1.125MΩ  
 Vcont            : 4V



Ta [°C]	Vout [V]
-20	1518.75
-10	1518.62
0	1518.00
10	1517.30
20	1516.86
30	1516.64
40	1516.51
50	1516.79
60	1517.20

\* Ta=-20°C is out of specification range.



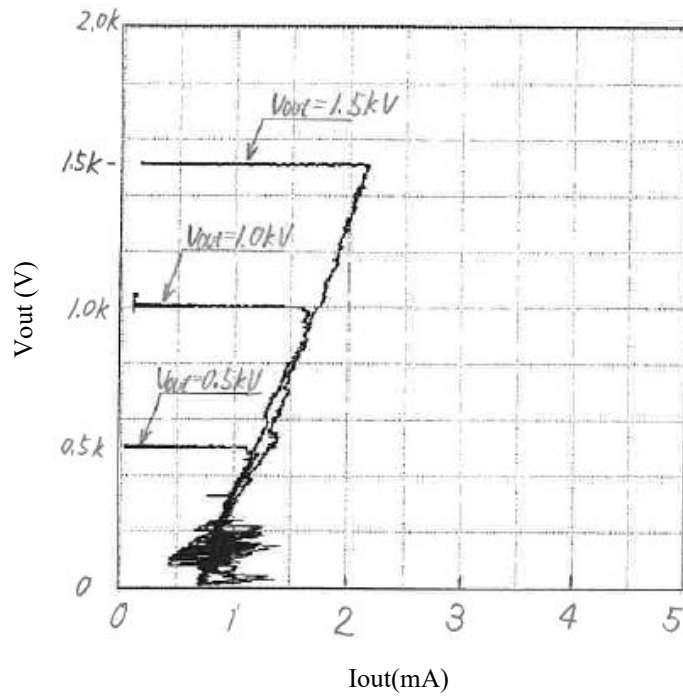
#### 4. Over Current Characteristics

Conditions

Ta : 25°C

Vin : 12V

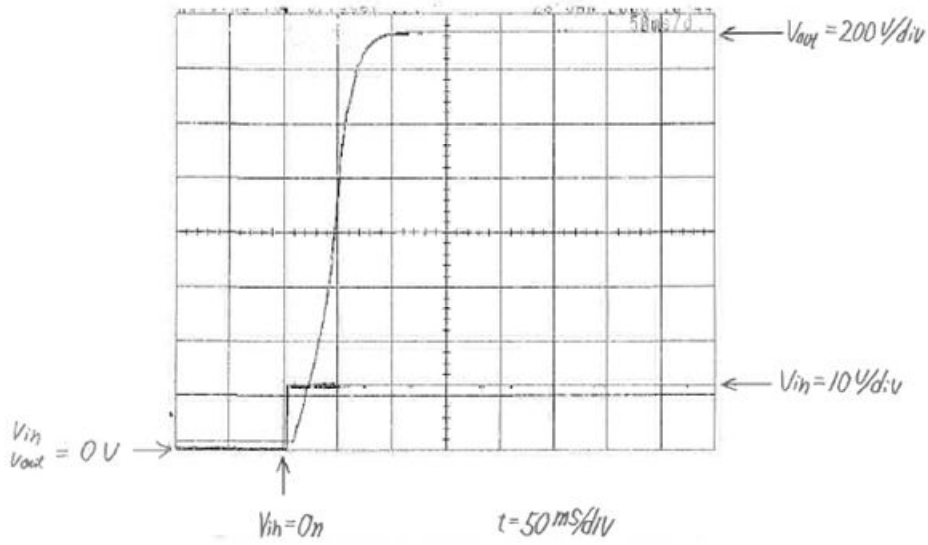
Vout : 500V , 1000V , 1500V



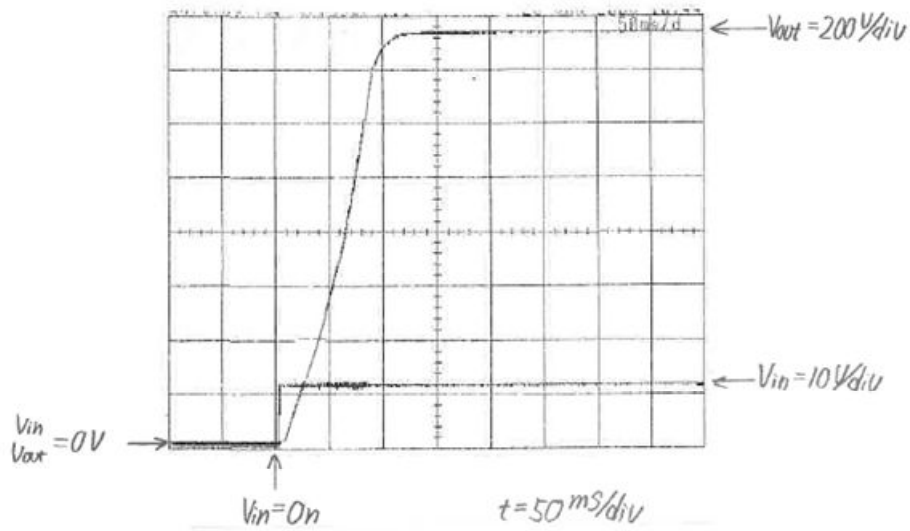
## 5. Output Rise Time Characteristics

Conditions	Ta	: 25°C
	Vin	: 12V
	Vout	: 1500V
	Vcont	: 4V

(1) Load condition : 0.0mA



(2) Load condition : 1.3mA

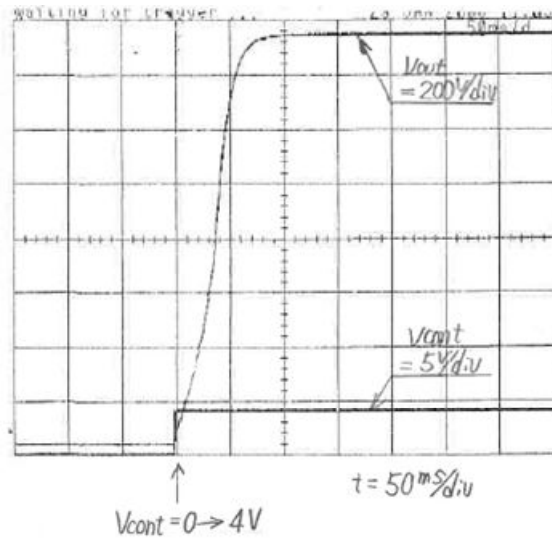


## 5. Output Rise Time Characteristics (with Vcont)

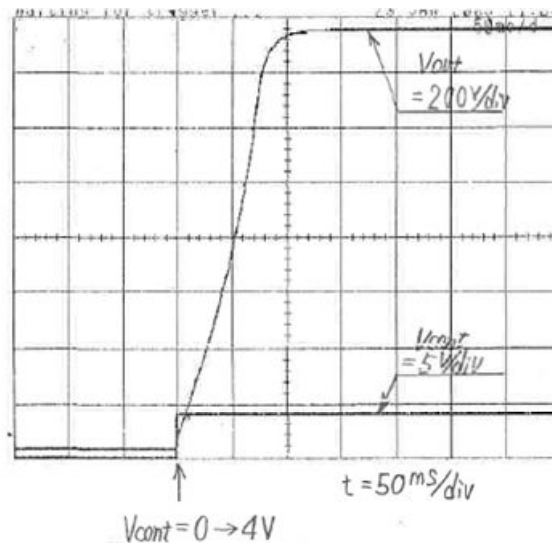
Conditions

Ta : 25°C  
Vin : 12V  
Vout : 1500V  
Vcont : 4V

(1) Load condition : 0.0mA



(2) Load condition : 1.3mA

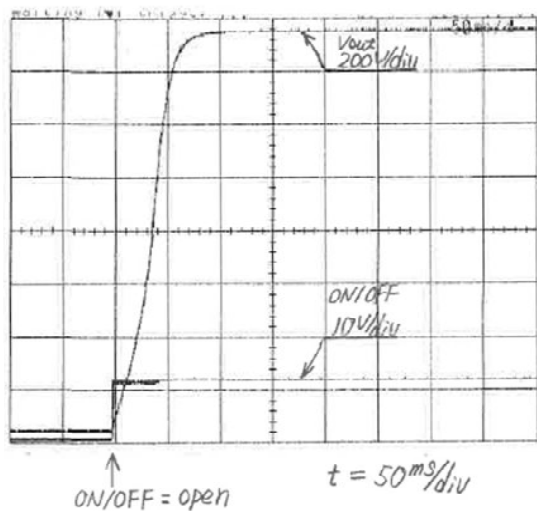


## 5. Output Rise Time Characteristics (with ON/OFF Control)

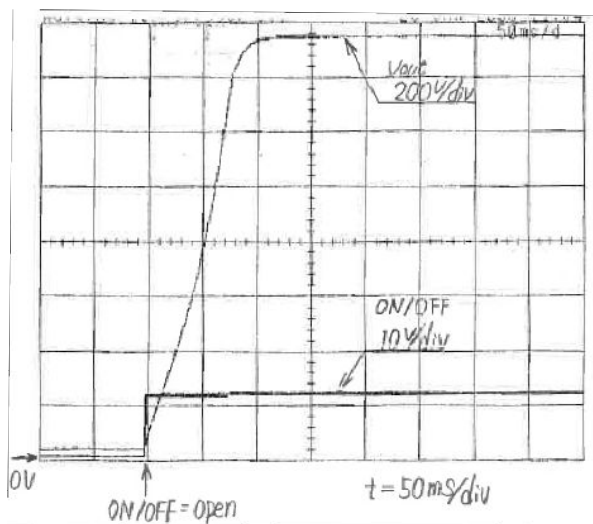
Conditions

Ta : 25°C  
 Vin : 12V  
 Vout : 1500V  
 Vcont : 4V

(1) Load condition : 0.0mA



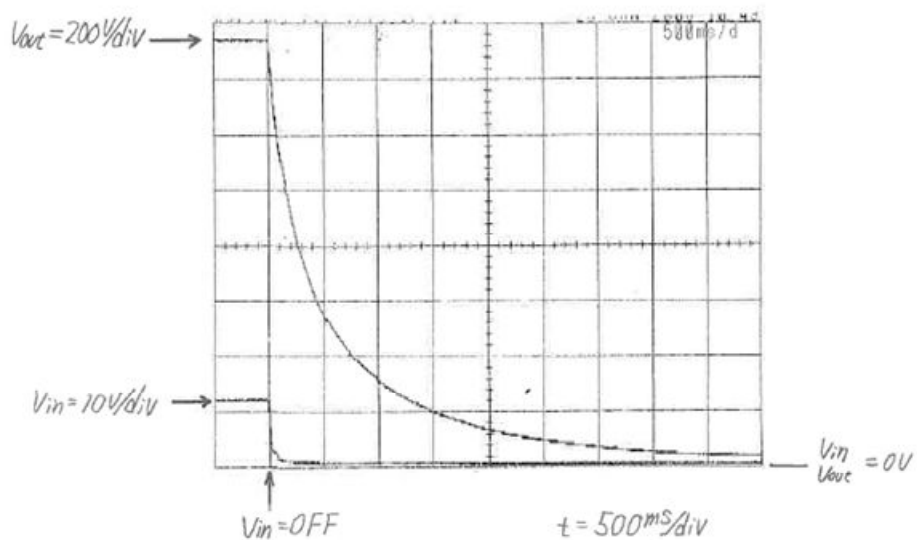
(2) Load condition : 1.3mA



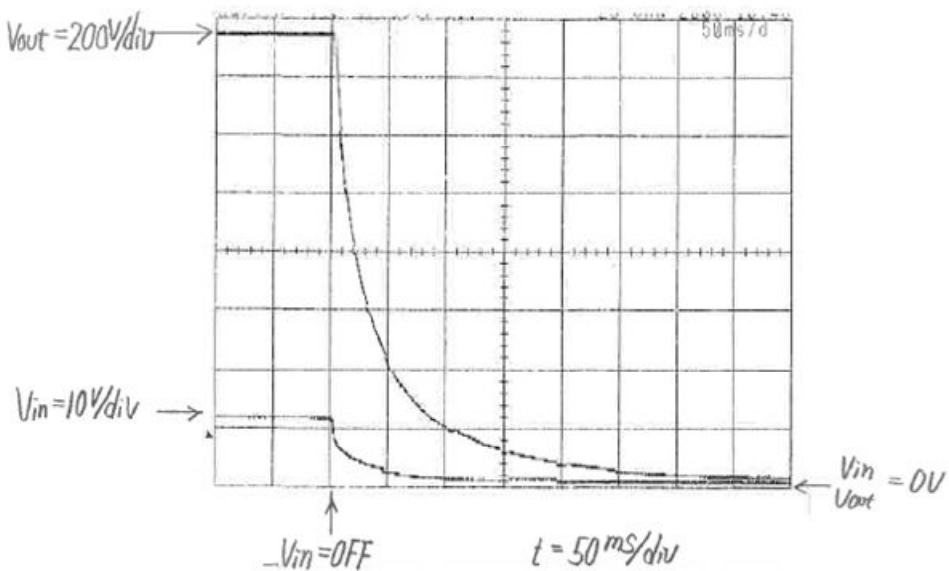
## 6. Output Fall Time Characteristics

Conditions	Ta	: 25°C
	Vin	: 12V
	Vout	: 1500V
	Vcont	: 4V

(1) Load condition : 0.0mA



(2) Load condition : 1.3mA

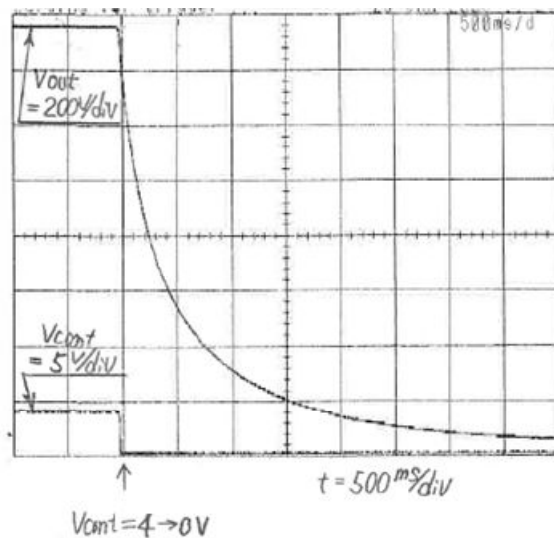


## 6. Output Fall Time Characteristics (with Vcont)

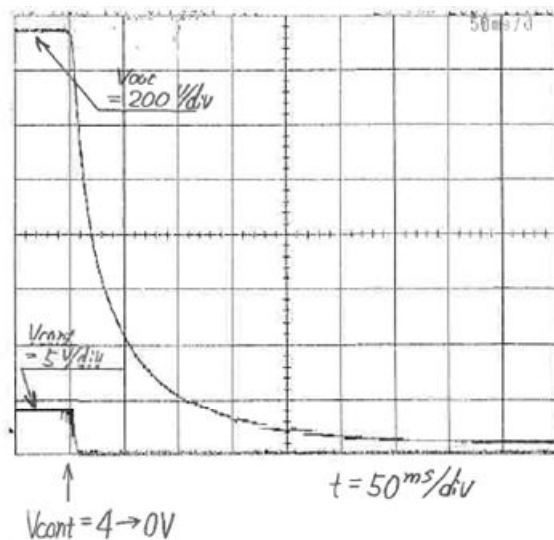
Conditions

Ta : 25°C  
Vin : 12V  
Vout : 1500V  
Vcont : 4V

(1) Load condition : 0.0mA



(2) Load condition : 1.3mA

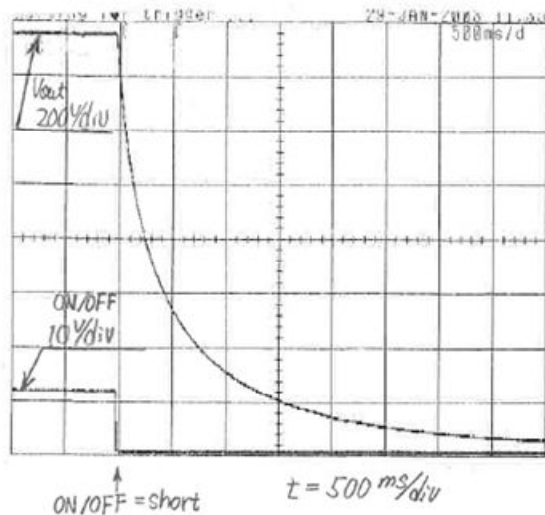


## 6. Output Fall Time Characteristics (with ON/OFF Control)

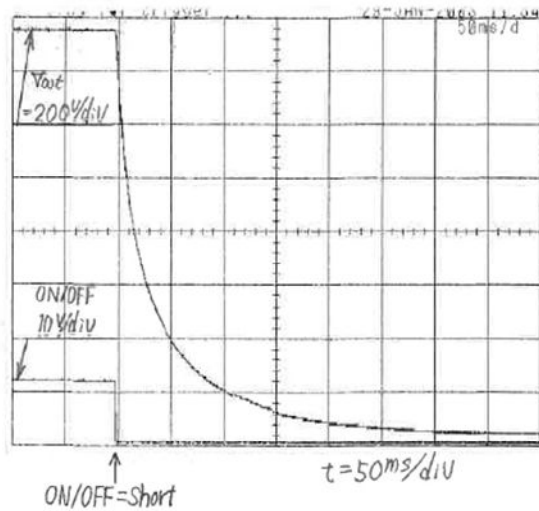
Conditions

Ta : 25°C  
Vin : 12V  
Vout : 1500V  
Vcont : 4V

(1) Load condition : 0.0mA



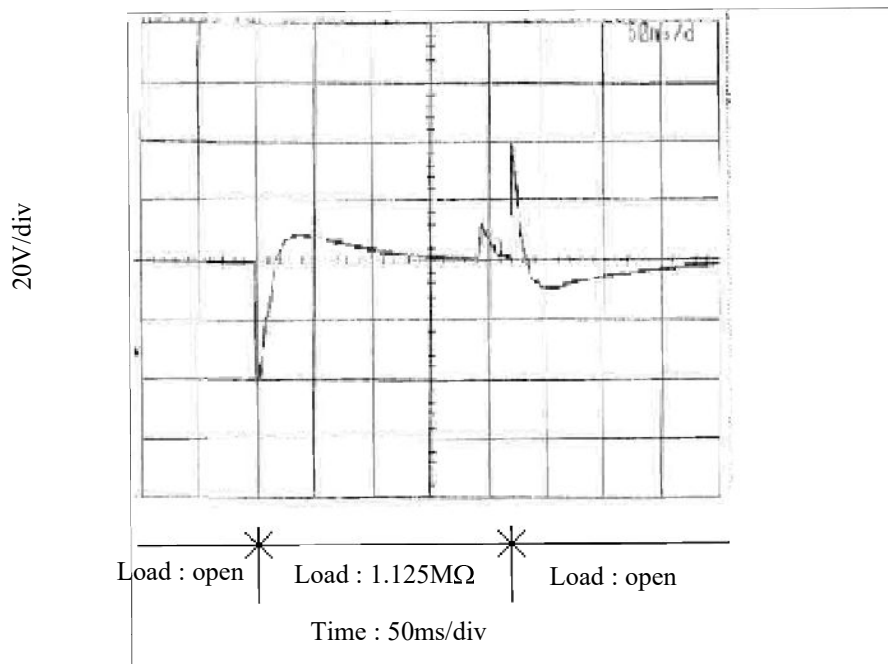
(2) Load condition : 1.3mA



## 7. Dynamic Load Regulation

Conditions	Ta	: 25°C
	Vin	: 12V
	Vout	: 1500V
	Vcont	: 4V

- (1) Load : open  $\Leftrightarrow$  1.125M $\Omega$   
Condition : Load input and Load disconnection



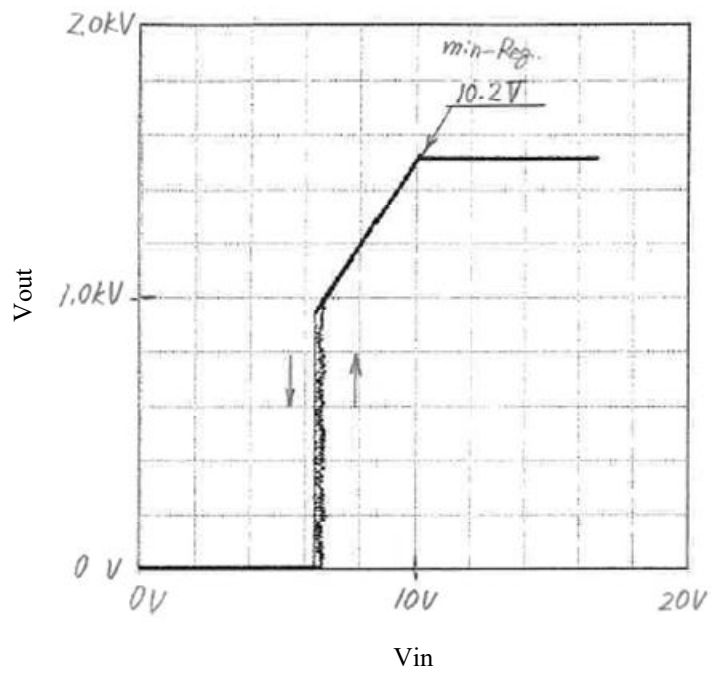


## 8. Vout-Vin Characteristics

Conditions

Ta : 25°C  
Vout : 1500V  
Vcont : 4V

(1) Load condition : 1.3mA

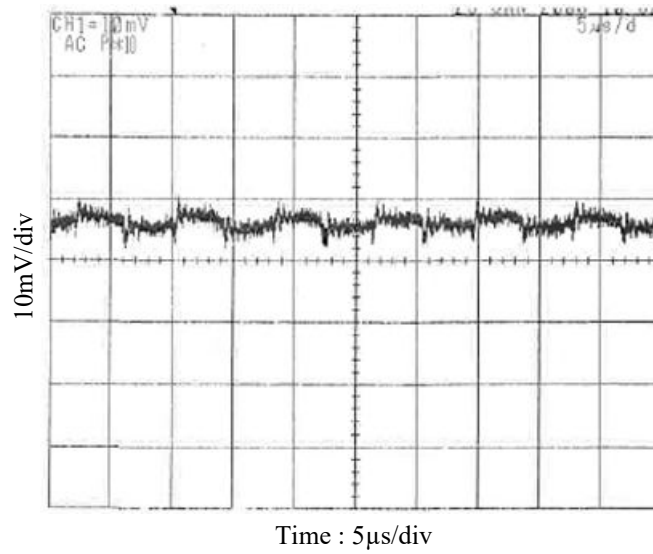


## 9. Output Ripple/Noise waveform

Conditions

Ta : 25°C  
Vin : 12V  
Vout : 1500V  
Vcont : 4V

(1) Load condition : Output Current = 0.0mA



(2) Load condition : Output Current = 1.3mA

