参考資料

COSEL

TEST DATA OF LEB225F-0524

(200V INPUT)

Regulated DC Power Supply

Mar. 21, 2000

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Design Engineer

コーセル株式会社

COSEL CO., LTD.

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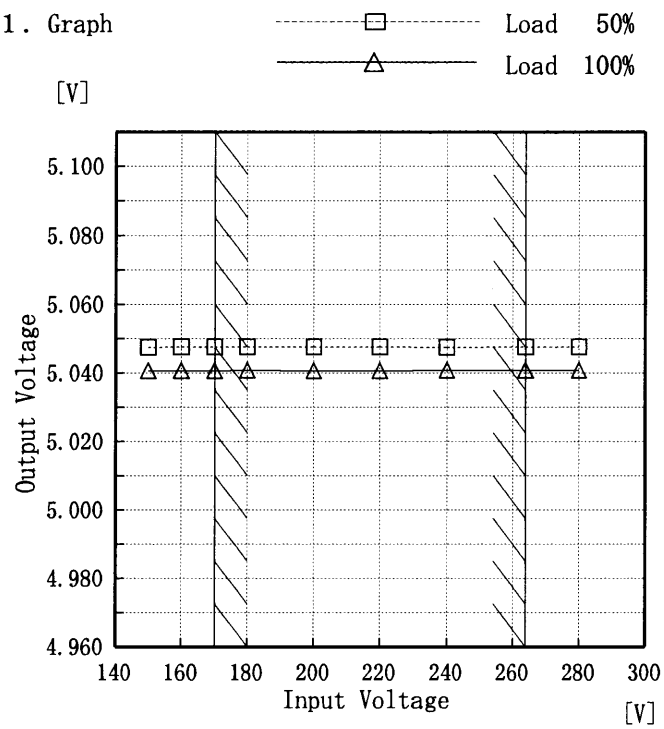
Model	LEB225F-0524
Item	Line Regulation 静的入力変動

Temperature 25℃
Testing Circuitry Figure A

Object V1:+5.0V5A

1. Graph

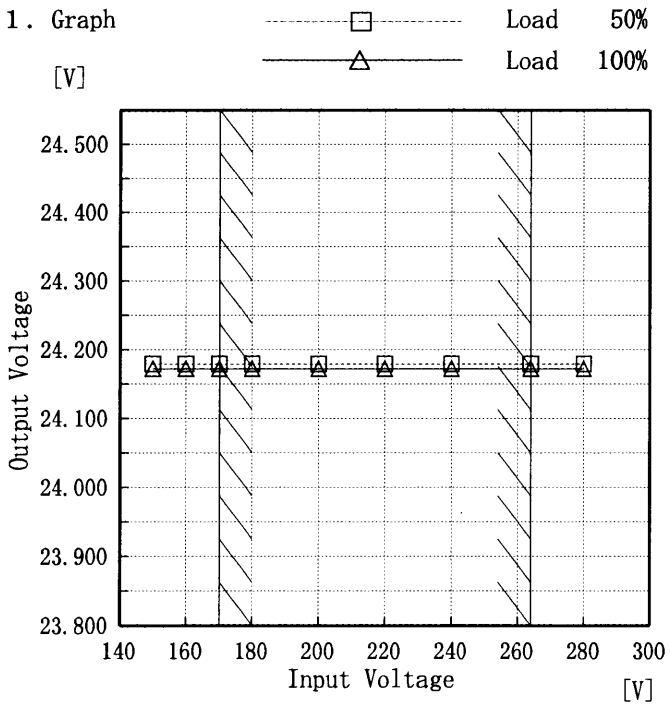


2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
150	5.048	5.041
160	5.048	5.041
170	5.048	5.041
180	5.048	5.041
200	5.048	5.041
220	5.048	5.041
240	5.048	5.041
264	5.048	5.041
280	5.048	5.041

Object V2:+24.0V9A

1. Graph



Note: Slanted line shows the range of the rated input voltage.
(注)斜線は定格入力電圧範囲を示す。

2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
150	24.180	24.173
160	24.180	24.173
170	24.180	24.173
180	24.180	24.172
200	24.180	24.173
220	24.180	24.173
240	24.180	24.173
264	24.180	24.173
280	24.180	24.173

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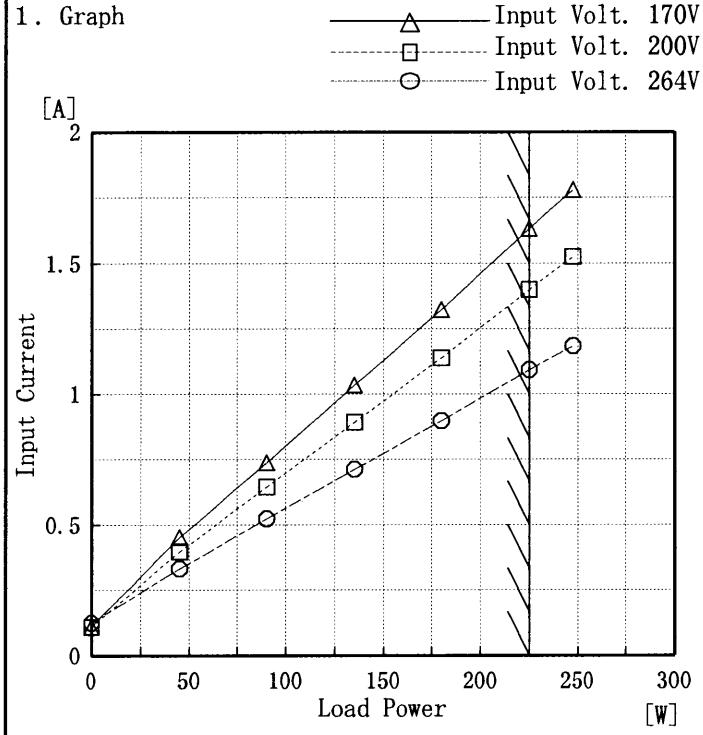
Model	LEB225F-0524
Item	Input Current (by Load Power) 入力電流（負荷特性）
Output	――――

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated load power.

(注)斜線は定格出力電力範囲を示す。

2. Values

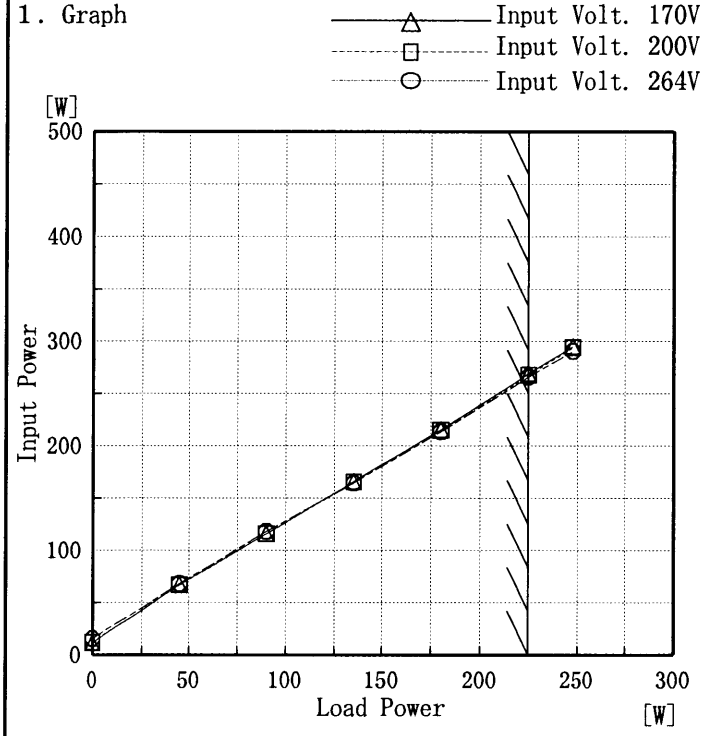
Load Power [W]	Input Current [A]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.00	0.111	0.108	0.124
45.00	0.452	0.398	0.332
90.00	0.739	0.645	0.524
135.00	1.035	0.894	0.712
180.00	1.322	1.138	0.898
225.00	1.632	1.399	1.093
247.50	1.780	1.524	1.185
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	LEB225F-0524
Item	Input Power (by Load Power) 入力電力 (負荷特性)
Output	————

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated load power.

(注)斜線は定格出力電力範囲を示す。

2. Values

Load Power [W]	Input Power [W]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.00	11.30	11.60	15.20
45.00	67.00	66.70	68.10
90.00	115.60	115.60	118.20
135.00	166.10	165.40	164.50
180.00	215.70	214.80	213.90
225.00	269.00	267.80	265.90
247.50	295.00	294.00	290.40
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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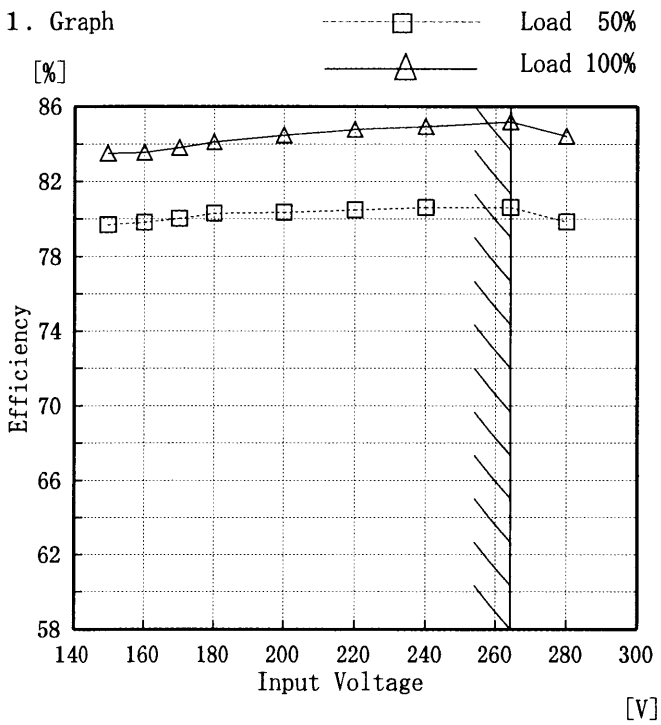
COSEL

Model	LEB225F-0524
Item	Efficiency (by Input Voltage) 効率（入力電圧特性）
Object	――――――――――

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated input voltage.

(注)斜線は定格入力電圧範囲を示す。

2. Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
150	79.7	83.5
160	79.8	83.6
170	80.0	83.8
180	80.3	84.1
200	80.4	84.5
220	80.5	84.8
240	80.6	84.9
264	80.6	85.2
280	79.9	84.4

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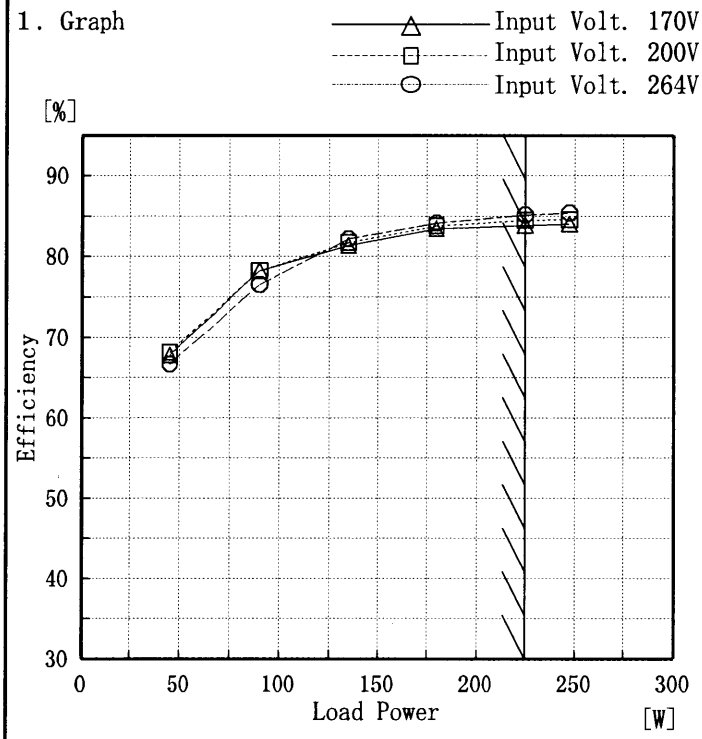
Model	LEB225F-0524
Item	Efficiency (by Load Power) 効率 (負荷特性)
Output	————

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated load power.

(注)斜線は定格出力電力範囲を示す。

2. Values

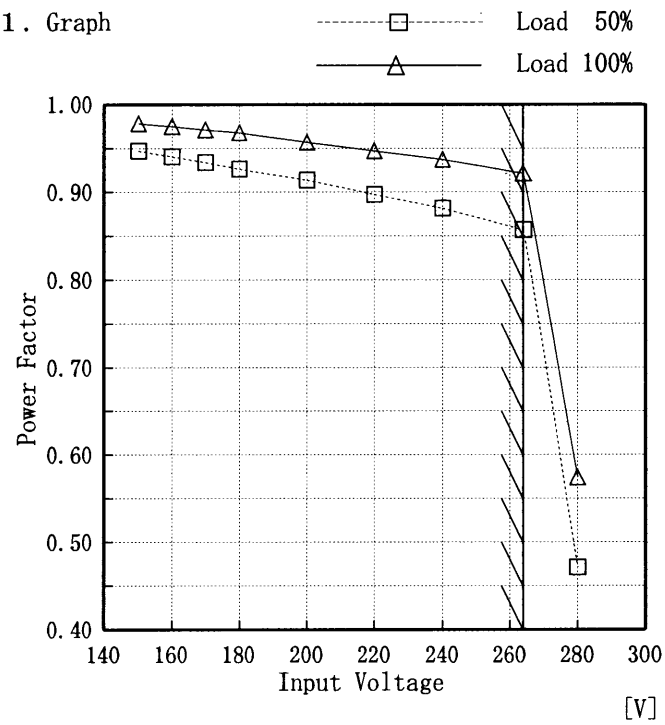
Load Power [W]	Efficiency [%] Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
45.00	67.8	68.1	66.7
90.00	78.2	78.3	76.5
135.00	81.4	81.7	82.2
180.00	83.5	83.8	84.2
225.00	83.8	84.5	85.2
247.50	84.1	84.6	85.4
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	LEB225F-0524
Item	Power Factor (by Input Voltage) 力率（入力電圧特性）
Object	――――――――――――――

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated input voltage.

(注)斜線は定格入力電圧範囲を示す。

2. Values

Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
150	0.95	0.98
160	0.94	0.98
170	0.93	0.97
180	0.93	0.97
200	0.91	0.96
220	0.90	0.95
240	0.88	0.94
264	0.86	0.92
280	0.47	0.57

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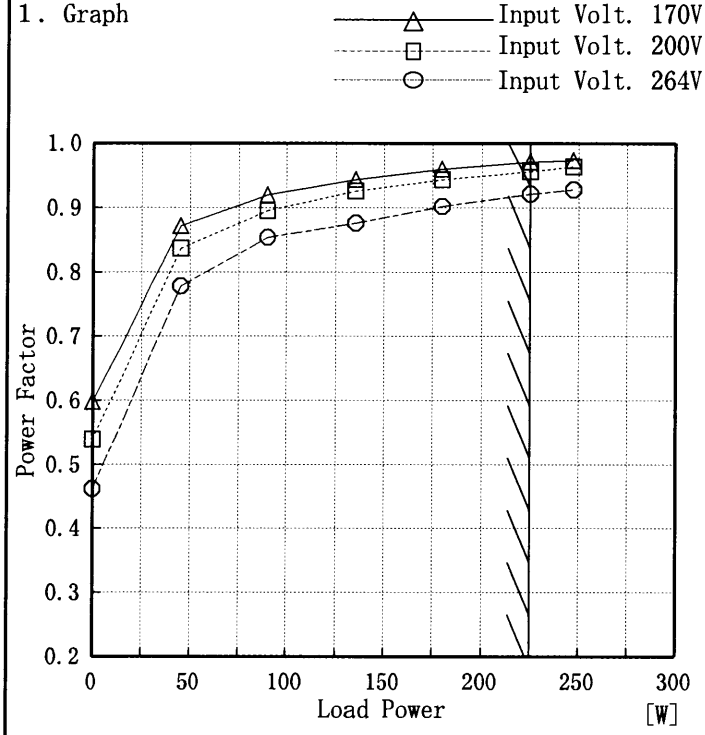
Model	LEB225F-0524
Item	Power Factor (by Load Power) 力率（負荷特性）
Output	――――

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated load power.

(注)斜線は定格出力電力範囲を示す。

2. Values

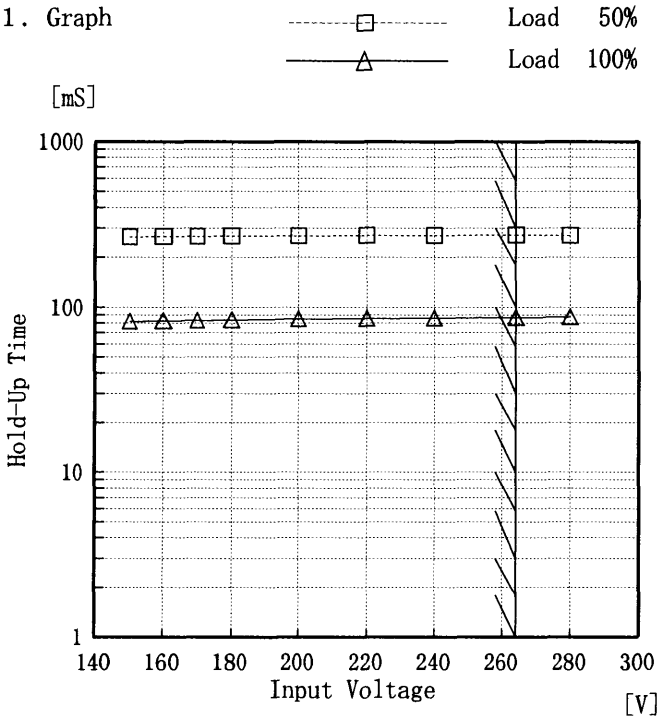
Load Power [W]	Power Factor Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.00	0.60	0.54	0.46
45.00	0.87	0.84	0.78
90.00	0.92	0.90	0.85
135.00	0.94	0.93	0.88
180.00	0.96	0.94	0.90
225.00	0.97	0.96	0.92
247.50	0.97	0.96	0.93
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	LEB225F-0524
Item	Hold-Up Time 出力保持時間
Object	V1:+5.0V5A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.

Note: Slanted line shows the range of the rated input voltage.

出力保持時間とは、入力電圧断から出力電圧が、定電圧精度の規格範囲を保持しているところまでの時間。

(注)斜線は定格入力電圧範囲を示す。

2. Values

Input Voltage [V]	Hold-Up Time [mS]	
	Load 50%	Load 100%
150	267	82
160	268	83
170	269	83
180	269	84
200	270	85
220	272	86
240	272	86
264	273	87
280	272	87

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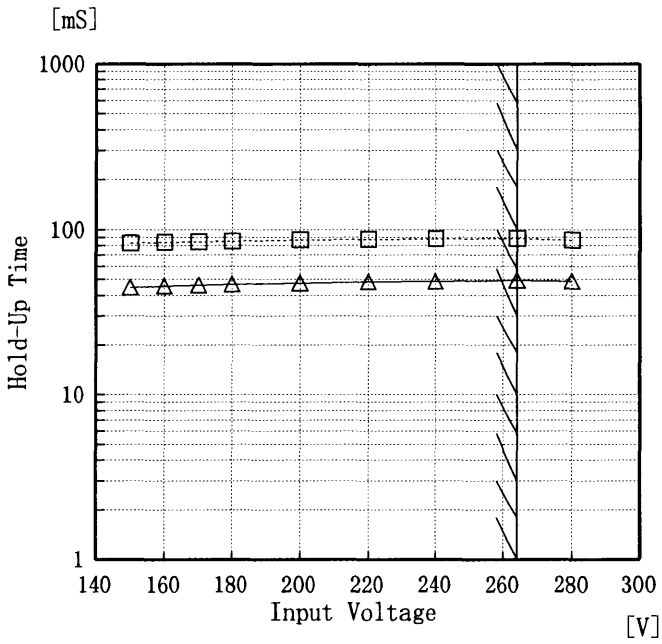
Model	LEB225F-0524
Item	Hold-Up Time 出力保持時間
Object	V2:+24.0V9A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.

Note: Slanted line shows the range of the rated input voltage.

出力保持時間とは、入力電圧断から出力電圧が、定電圧精度の規格範囲を保持しているところまでの時間。

(注)斜線は定格入力電圧範囲を示す。

2. Values

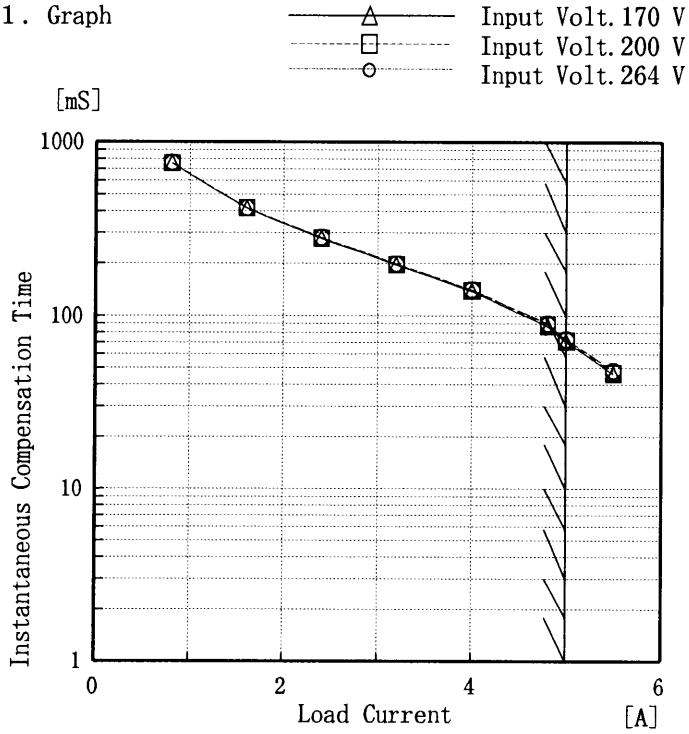
Input Voltage [V]	Hold-Up Time [mS]	
	Load 50%	Load 100%
150	83	45
160	84	45
170	85	46
180	85	47
200	87	48
220	87	48
240	88	49
264	89	49
280	86	49

COSEL

Model	LEB225F-0524
Item	Instantaneous Interruption Compensation 瞬時停電保障
Object	V1:+5.0V5A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.
Note:Slanted line shows the range of the rated load current.

瞬時停電保障時間とは、出力電圧が定電圧精度の規格範囲を保持している瞬時停電時間をいう。
(注)斜線は定格負荷電流範囲を示す。

2. Values

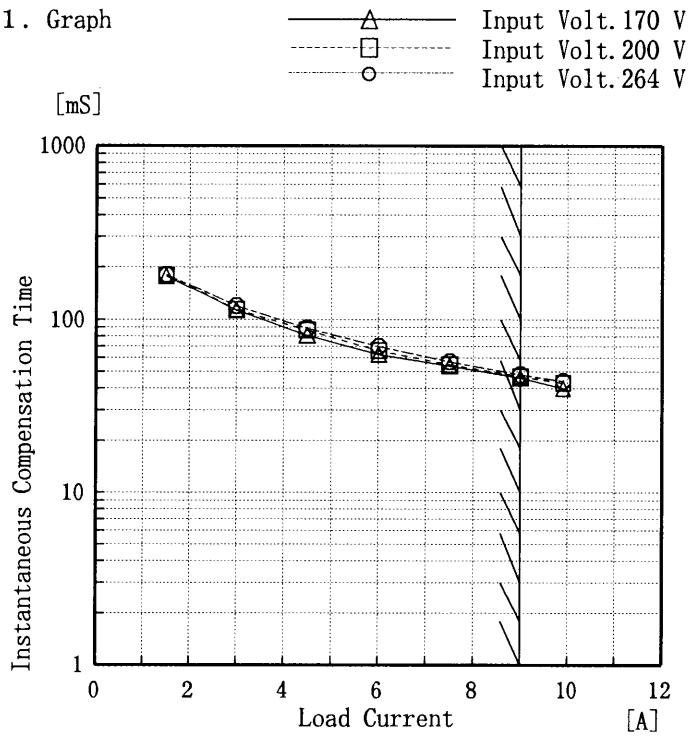
Load Current [A]	Time [mS]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	—	—	—
0.8	753	755	758
1.6	415	417	419
2.4	279	281	282
3.2	197	198	199
4.0	139	140	141
4.8	87	89	90
5.0	71	72	73
5.5	46	47	48
—	—	—	—
—	—	—	—

COSEL

Model	LEB225F-0524
Item	Instantaneous Interruption Compensation 瞬時停電保障
Object	V2:+24.0V9A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.
Note:Slanted line shows the range of the rated load current.

瞬時停電保障時間とは、出力電圧が定電圧精度の規格範囲を保持している瞬時停電時間をいう。
(注)斜線は定格負荷電流範囲を示す。

2. Values

Load Current [A]	Time [mS]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	—	—	—
1.5	178	180	181
3.0	113	114	120
4.5	81	87	89
6.0	63	66	70
7.5	54	55	57
9.0	46	47	48
9.9	40	43	44
—	—	—	—
—	—	—	—
—	—	—	—

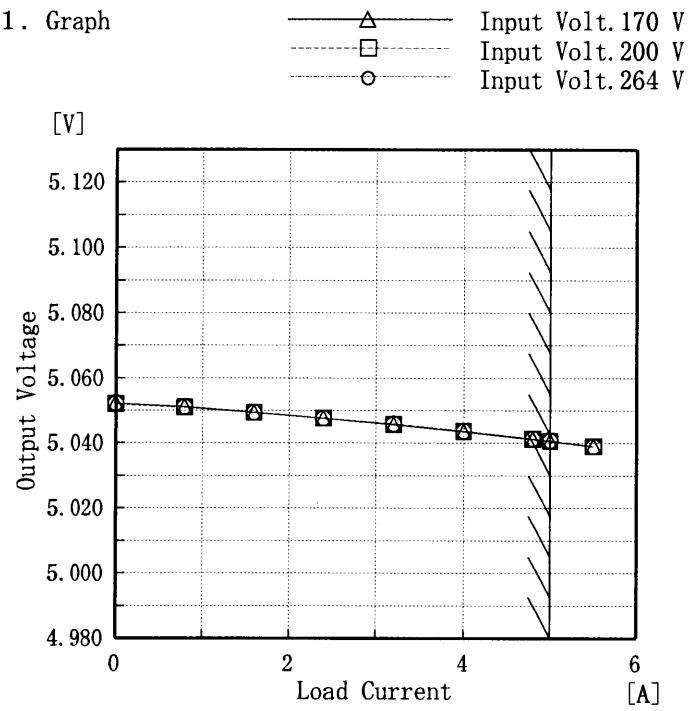
COSEL

Model	LEB225F-0524
Item	Load Regulation 静的負荷変動

Temperature 25℃
Testing Circuitry Figure A

Object V1:+5.0V5A

1. Graph

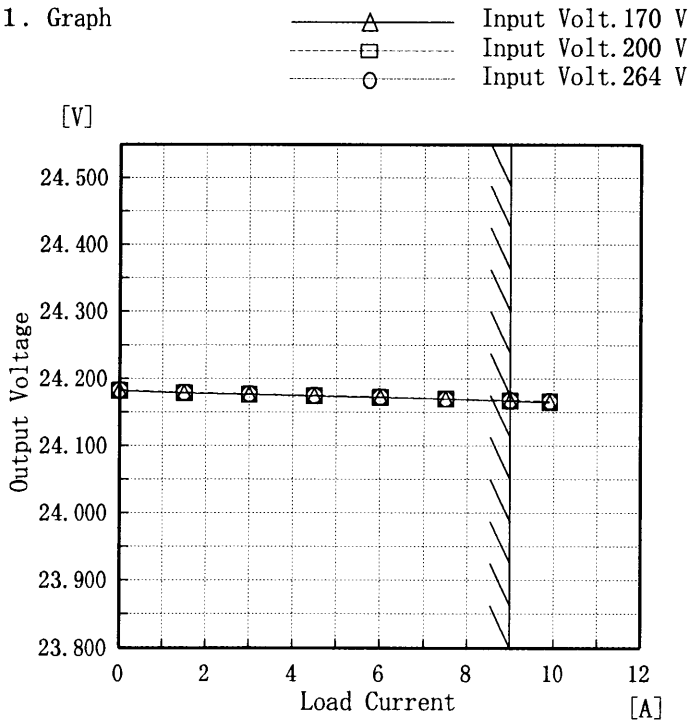


2. Values

Load Current [A]	Output Voltage [V] Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	5.052	5.052	5.052
0.8	5.051	5.051	5.051
1.6	5.049	5.049	5.049
2.4	5.048	5.048	5.048
3.2	5.046	5.046	5.046
4.0	5.044	5.044	5.044
4.8	5.041	5.041	5.041
5.0	5.041	5.041	5.041
5.5	5.039	5.039	5.039
—	—	—	—

Object V2:+24.0V9A

1. Graph



Note: Slanted line shows the range of the rated load current.
(注)斜線は定格負荷電流範囲を示す。

2. Values

Load Current [A]	Output Voltage [V] Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	24.182	24.182	24.182
1.5	24.178	24.178	24.179
3.0	24.176	24.176	24.177
4.5	24.174	24.174	24.175
6.0	24.172	24.172	24.172
7.5	24.170	24.170	24.170
9.0	24.167	24.167	24.168
9.9	24.165	24.165	24.166
—	—	—	—
—	—	—	—

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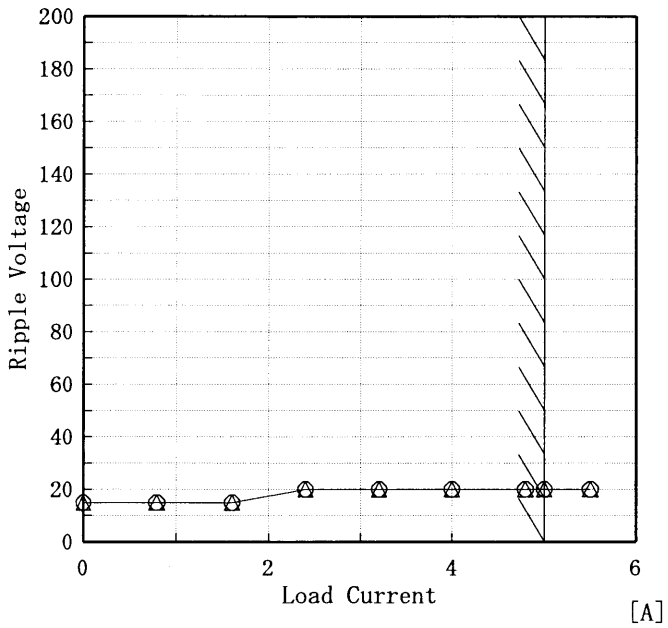
COSEL

Model	LEB225F-0524
Item	Ripple Voltage(by Load Current) リップル電圧(負荷特性)
Object	V1:+5.0V5A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Ripple Voltage is shown as p-p in the figure below.

Note: Slanted line shows the range of the rated load current.

リップル電圧は、下図ｐ－ｐ値で示される。
(注)斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line
入力商用周期
T2: Due to Switching
ｽｲｯﾁﾝｸﾞ周期

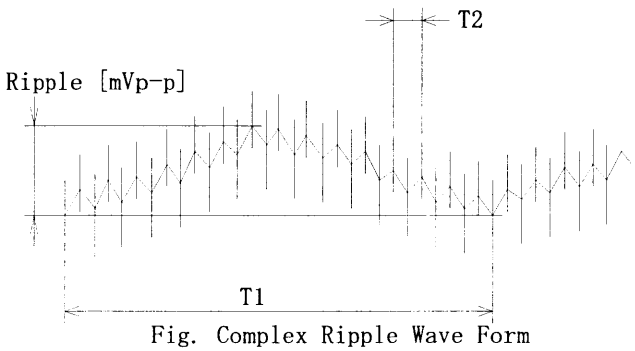


Fig. Complex Ripple Wave Form
図　リップル波形詳細図

2. Values

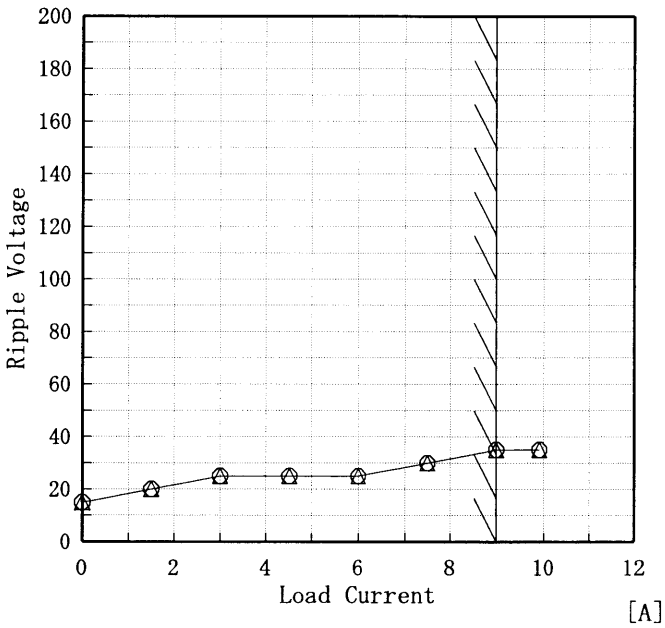
Load Current [A]	Ripple Output Voltage [mV]	
	Input Volt. 170 [V]	Input Volt. 264 [V]
0.0	15	15
0.8	15	15
1.6	15	15
2.4	20	20
3.2	20	20
4.0	20	20
4.8	20	20
5.0	20	20
5.5	20	20
—	—	—
—	—	—

COSEL

Model	LEB225F-0524
Item	Ripple Voltage(by Load Current) リップル電圧(負荷特性)
Object	V2:+24.0V9A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Ripple Voltage is shown as p-p in the figure below.

Note: Slanted line shows the range of the rated load current.

リップル電圧は、下図ｐ－ｐ値で示される。
(注)斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line
入力商用周期
T2: Due to Switching
ｽｲｯﾁﾝｸﾞ周期

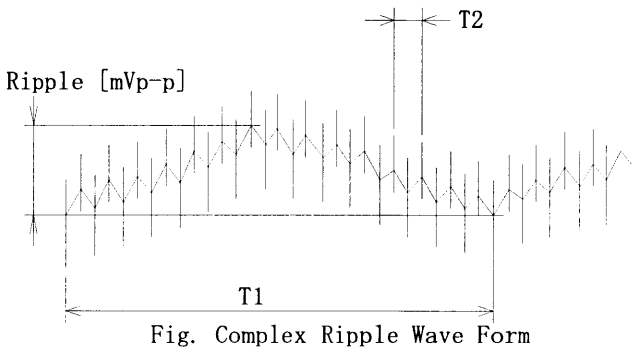


Fig. Complex Ripple Wave Form
図　リップル波形詳細図

2. Values

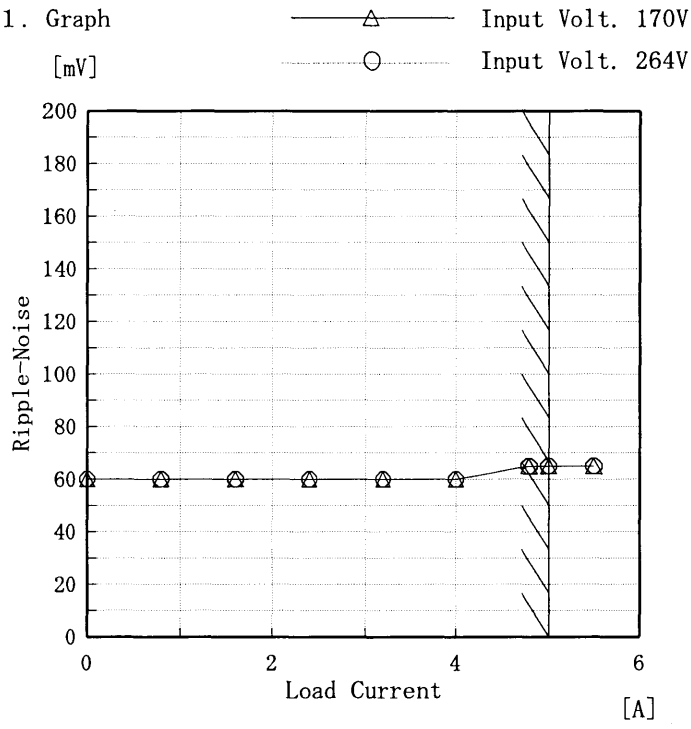
Load Current [A]	Ripple Output Voltage [mV]	
	Input Volt. 170 [V]	Input Volt. 264 [V]
0.0	15	15
1.5	20	20
3.0	25	25
4.5	25	25
6.0	25	25
7.5	30	30
9.0	35	35
9.9	35	35
—	—	—
—	—	—
—	—	—

COSEL

Model	LEB225F-0524
Item	Ripple-Noise リップルノイズ
Object	V1:+5.0V5A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

リップルノイズは、下図ｐ－ｐ値で示される。
(注)斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line
入力商用周期
T2: Due to Switching
ｽｲｯﾁﾝｸﾞ周期

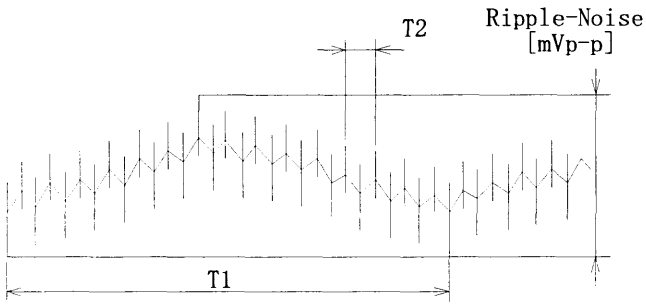


Fig. Complex Ripple Wave Form
図　リップル波形詳細図

2. Values

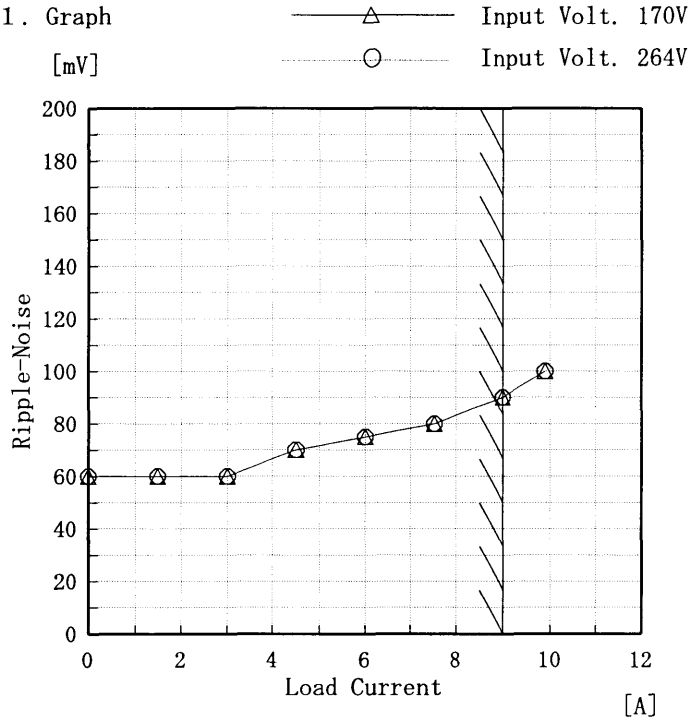
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 170 [V]	Input Volt. 264 [V]
0.0	60	60
0.8	60	60
1.6	60	60
2.4	60	60
3.2	60	60
4.0	60	60
4.8	65	65
5.0	65	65
5.5	65	65
—	—	—
—	—	—

COSEL

Model	LEB225F-0524
Item	Ripple-Noise リップルノイズ
Object	V2:+24.0V9A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

リップルノイズは、下図ｐ－ｐ値で示される。
(注)斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line
入力商用周期
T2: Due to Switching
ｽｲｯﾁﾝｸﾞ周期

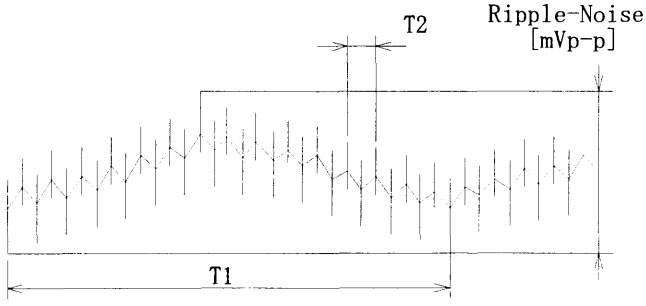


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 170 [V]	Input Volt. 264 [V]
0.0	60	60
1.5	60	60
3.0	60	60
4.5	70	70
6.0	75	75
7.5	80	80
9.0	90	90
9.9	100	100
—	—	—
—	—	—
—	—	—

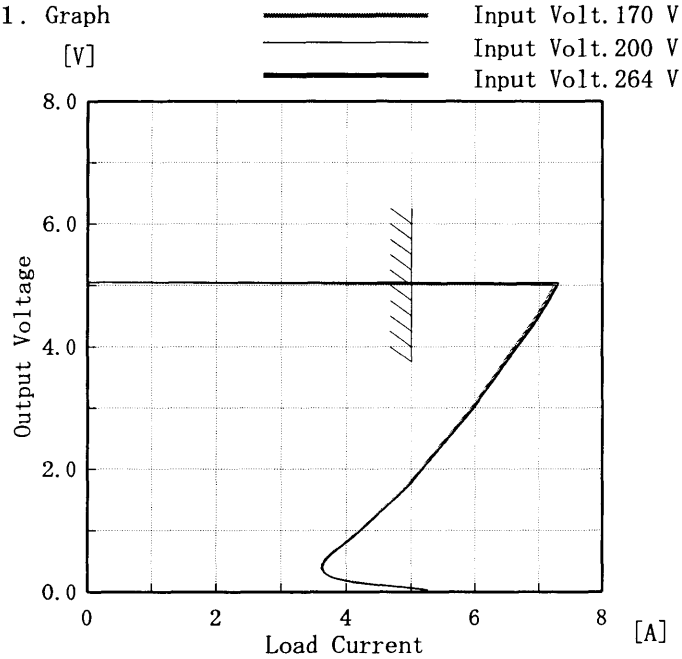
COSEL

Model	LEB225F-0524
Item	Overcurrent Protection 過電流保護

Temperature 25℃
Testing Circuitry Figure A

Object V1:+5.0V5A

1. Graph



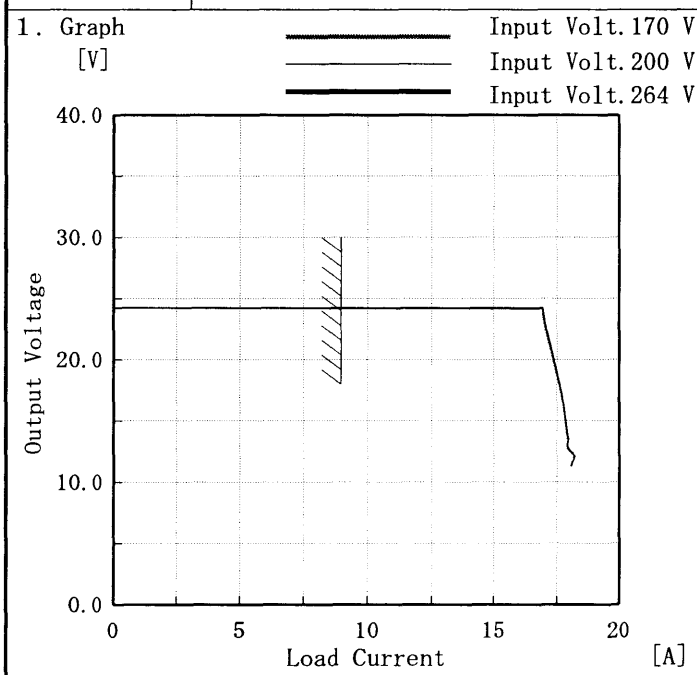
Note: Slanted line shows the range of the rated load current.

2. Values

Output Voltage [V]	Load Current [A] Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
5.00	7.25	7.28	7.29
4.75	7.10	7.13	7.16
4.50	6.98	7.01	7.04
4.00	6.64	6.67	6.70
3.50	6.33	6.35	6.35
3.00	5.94	5.96	5.99
2.50	5.59	5.61	5.64
2.00	5.17	5.19	5.19
1.50	4.73	4.75	4.77
1.00	4.20	4.22	4.24
0.50	3.70	3.71	3.73
0.00	5.28	5.29	5.23

Object V2:+24.0V9A

1. Graph



Note: Slanted line shows the range of the rated load current.

Intermittent operation occurs when the output voltage is from 11.1V to 0V.

2. Values

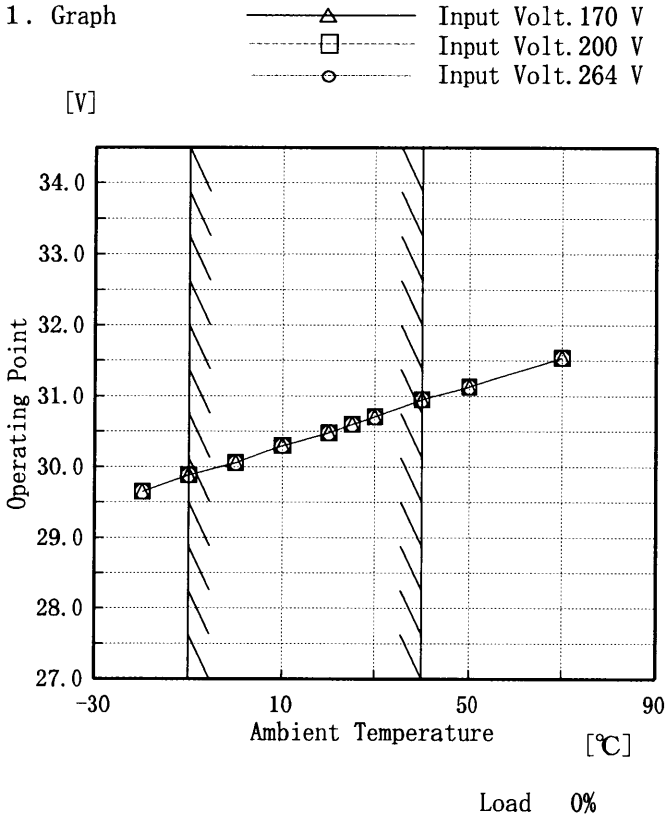
Output Voltage [V]	Load Current [A] Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
24.00	16.97	16.98	16.98
22.80	17.06	17.08	17.08
21.60	17.16	17.17	17.18
19.20	17.43	17.45	17.46
16.80	17.70	17.72	17.73
14.40	17.88	17.90	17.91
12.00	18.21	18.23	18.25
9.60	—	—	—
7.20	—	—	—
4.80	—	—	—
2.40	—	—	—
0.00	—	—	—

COSEL

Model	LEB225F-0524
Item	Overvoltage Protection 過電圧保護
Object	V2:+24.0V9A

Testing Circuitry Figure A

1. Graph



Load 0%

Note: Slanted line shows the range of the rated ambient temperature.

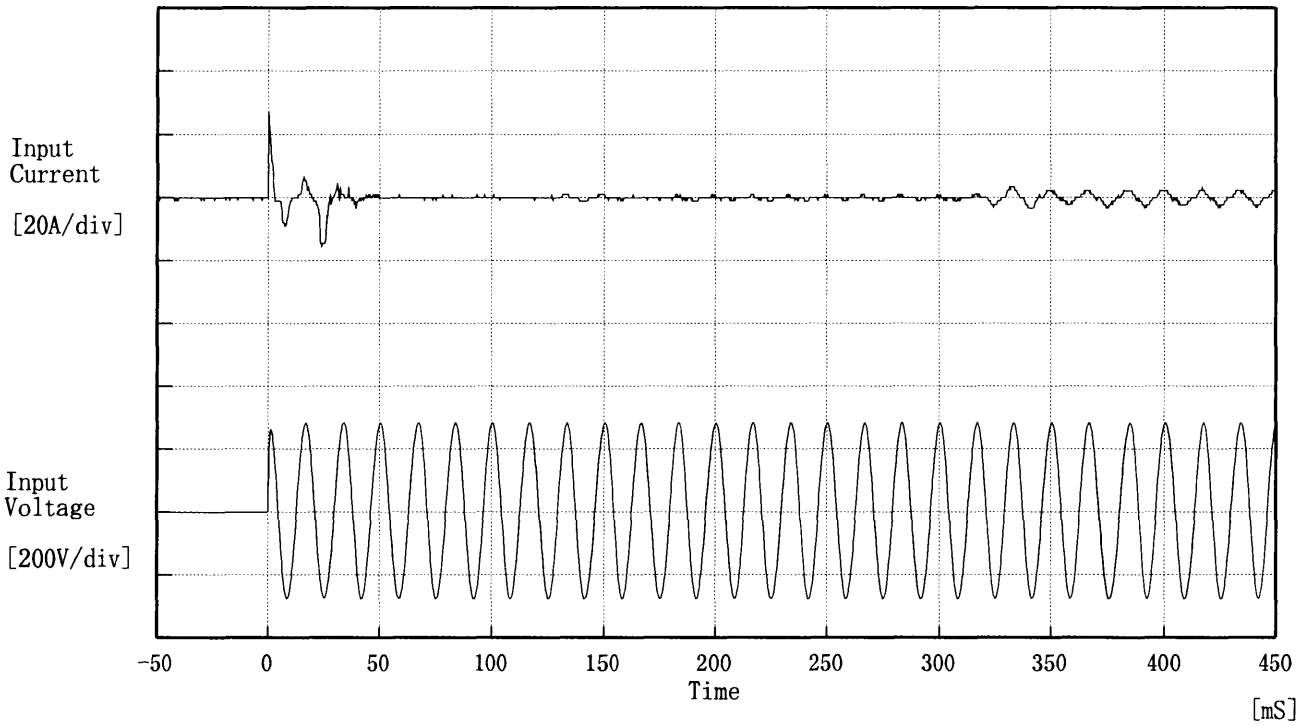
(注)斜線は定格周囲温度範囲を示す。

2. Values

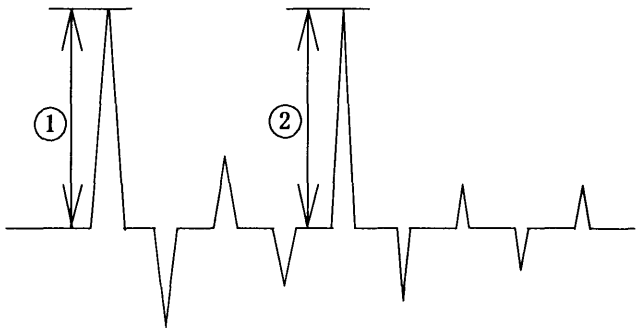
Ambient Temperature [℃]	Operating Point [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-20	29.7	29.7	29.7
-10	29.9	29.9	29.9
0	30.1	30.1	30.1
10	30.3	30.3	30.3
20	30.5	30.5	30.5
25	30.6	30.6	30.6
30	30.7	30.7	30.7
40	31.0	31.0	31.0
50	31.1	31.1	31.1
70	31.5	31.5	31.5
—	—	—	—

COSEL

Model	LEB225F-0524		
Item	Inrush Current 突入電流	Temperature Testing Circuitry	25℃ Figure A
Object	――――――		



Input Voltage 200 V
Frequency 60 Hz
Load 100 %
Inrush Current
① 26.92 [A]
② 3.37 [A]



BC－3275

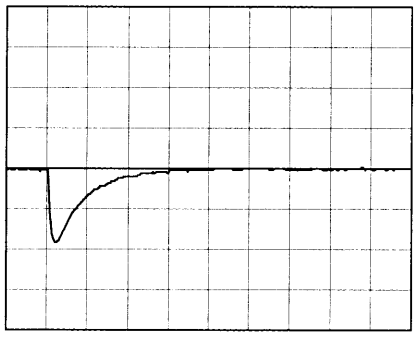
COSEL

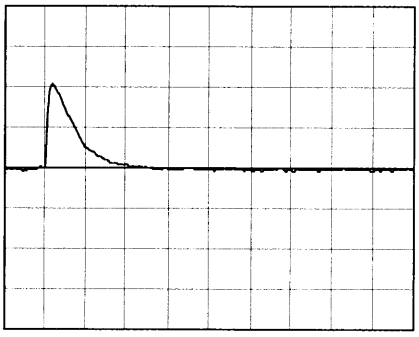
Model	LEB225F-0524		
Item	Dynamic Load Responce 動的負荷変動	Temperature Testing Circuitry	25℃ Figure A
Object	V1:+5V5A		

Input Volt. 200 V
Cycle 1000 mS

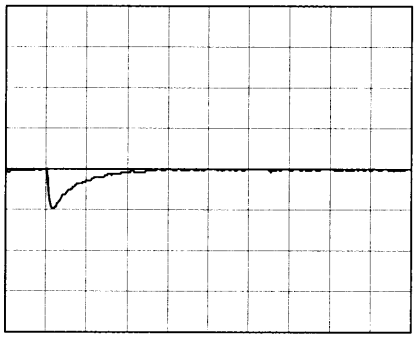
Load Current

Min. Load ←→
Load 100 %

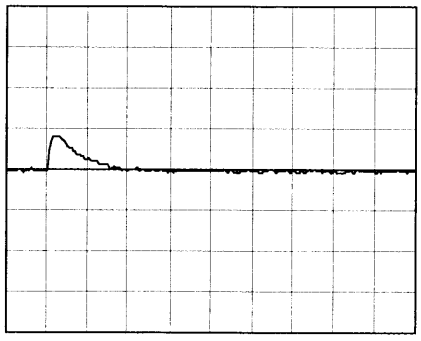




Min. Load ←→
Load 50 %



100 mV/div



10 ms/div

COSEL

Model	LEB225F-0524		
Item	Dynamic Load Responce 動的負荷変動	Temperature Testing Circuitry	25℃ Figure A
Object	V2:+24V9A		

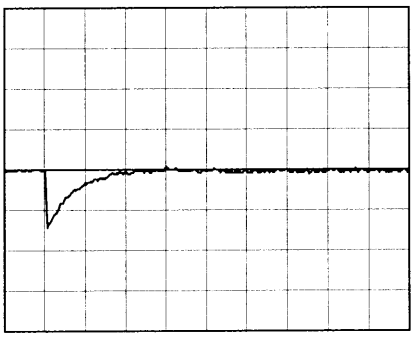
Input Volt. 200 V

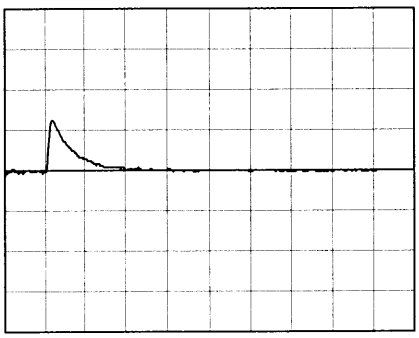
Cycle 1000 mS

Load Current

Min. Load ←→

Load 100 %

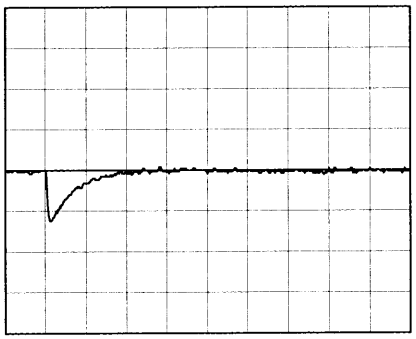


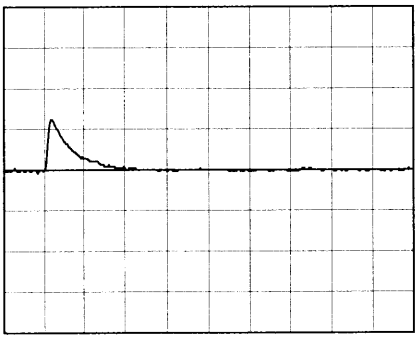


Min. Load ←→

Load 50 %

100 mV/div





10 ms/div

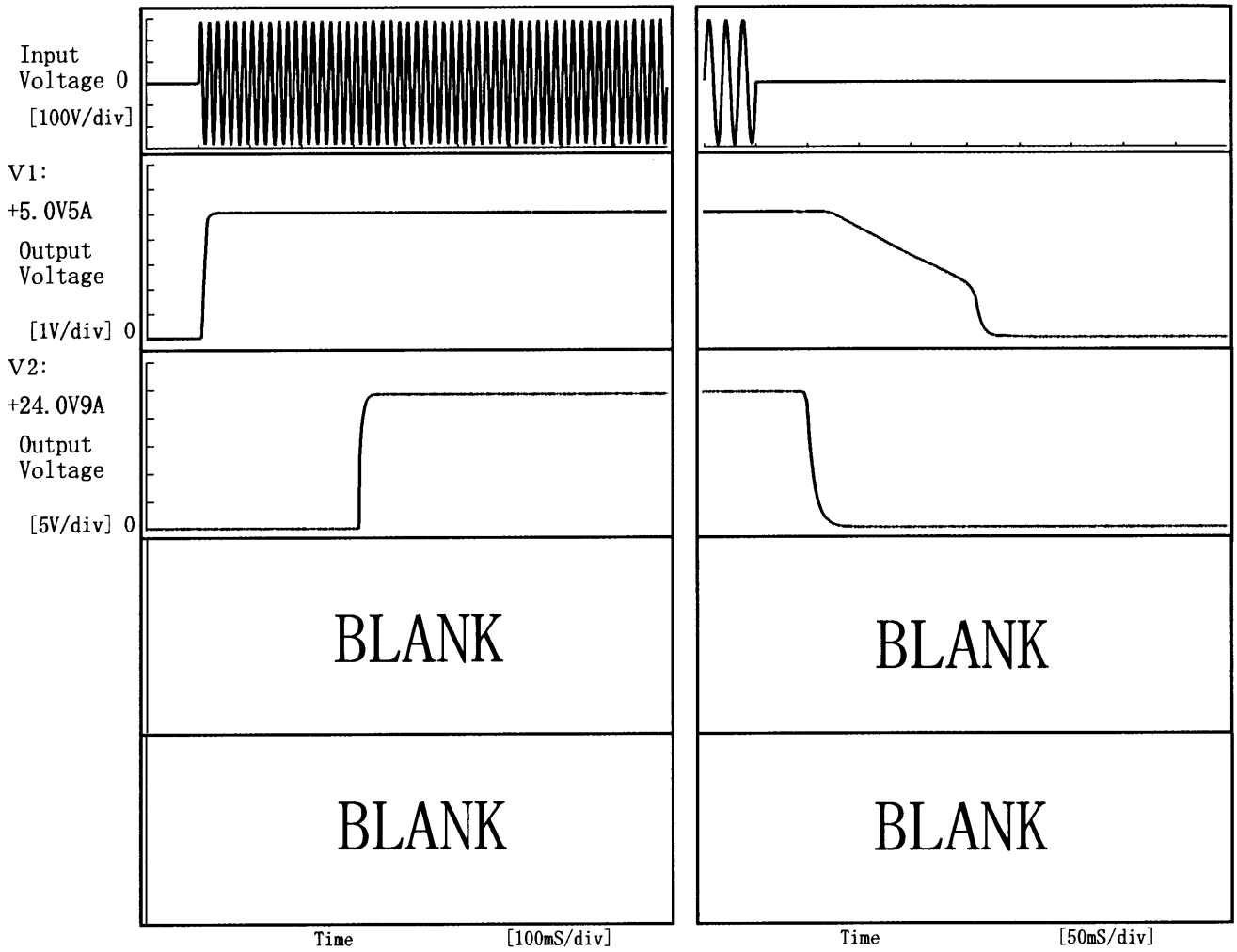
COSEL

Model	LEB225F-0524
Item	Rise and Fall Time 立上り、立下り時間
Object	————

Temperature 25℃
Testing Circuitry Figure A

Load Power 100 %
Input Volt. 200 V

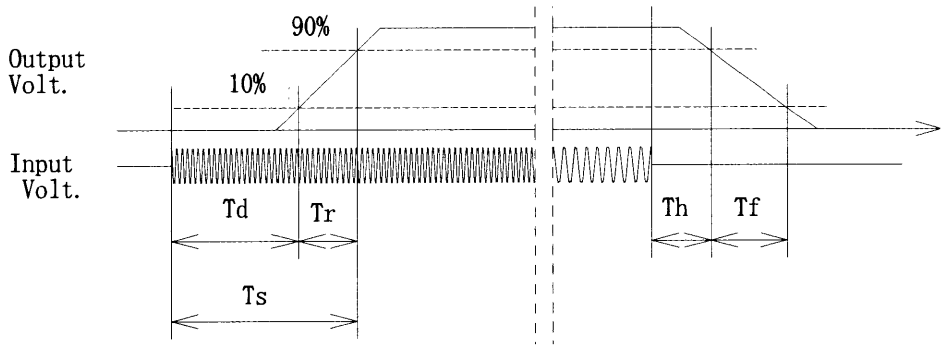
1. Graph



2. Values

[mS]

Output \ Time	T d	T r	T s	T h	T f
V1	5.0	10.0	15.0	95.5	119.3
V2	308.5	10.5	319.0	50.5	14.5
—	—	—	—	—	—
—	—	—	—	—	—



BC－3275

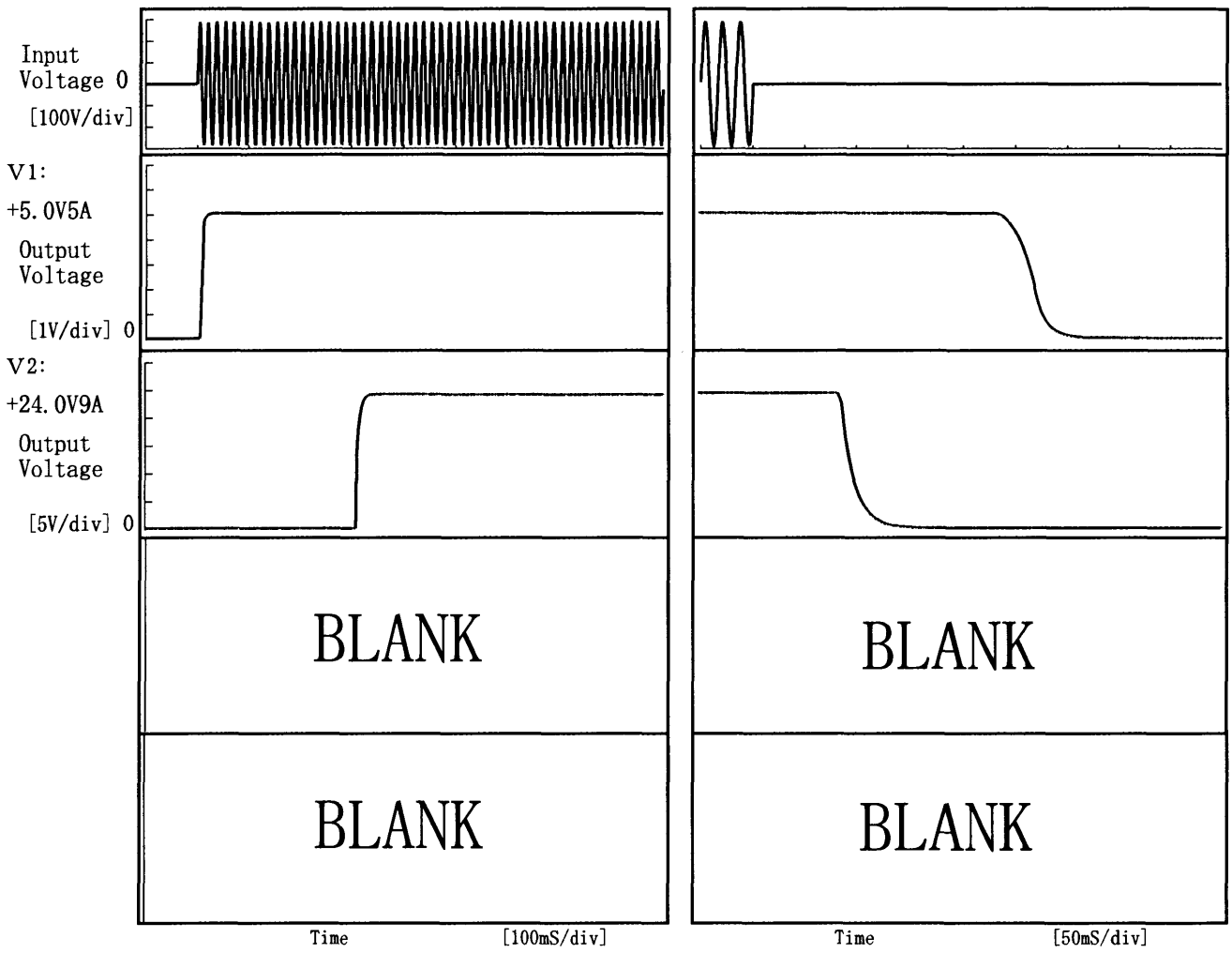
COSEL

Model	LEB225F-0524
Item	Rise and Fall Time 立上り、立下り時間
Object	————

Temperature 25℃
Testing Circuitry Figure A

Load Power 50 %
Input Volt. 200 V

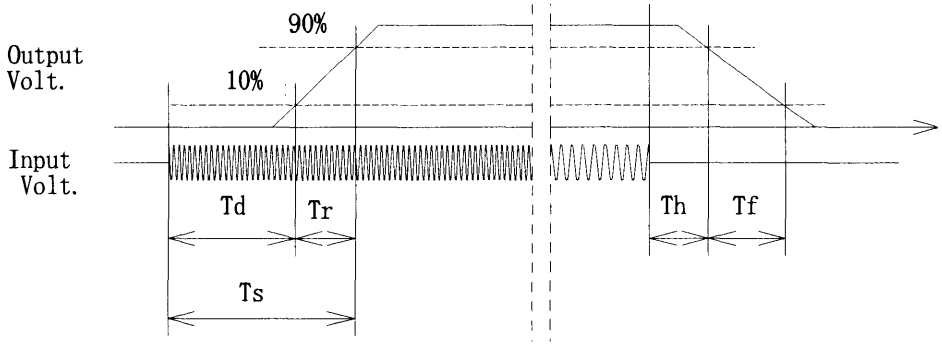
1. Graph



2. Values

[mS]

Output \ Time	T d	T r	T s	T h	T f
V1	5.0	6.5	11.5	246.8	38.3
V2	308.5	10.5	319.0	88.0	28.0
—	—	—	—	—	—
—	—	—	—	—	—



BC－3275

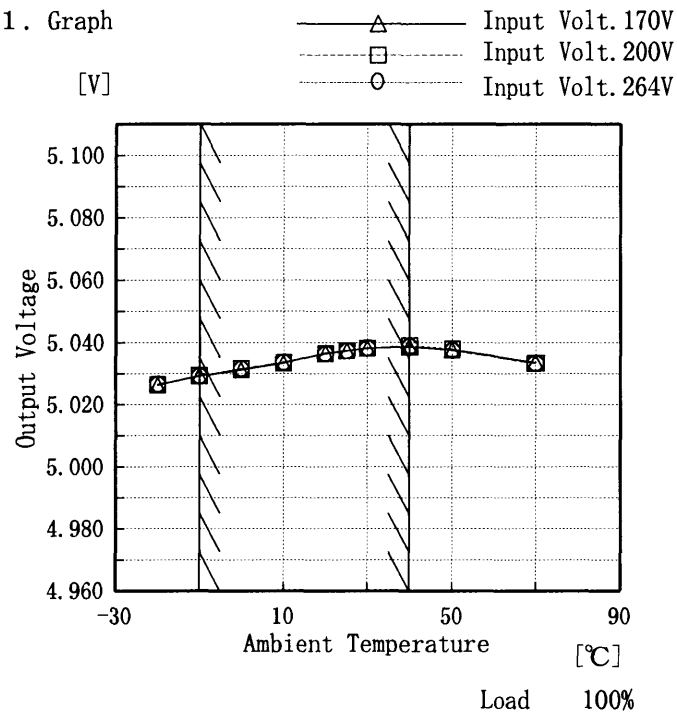
COSEL

Model	LEB225F-0524
Item	Ambient Temperature Drift 周囲温度変動

Testing Circuitry Figure A

Object V1:+5.0V5A

1. Graph

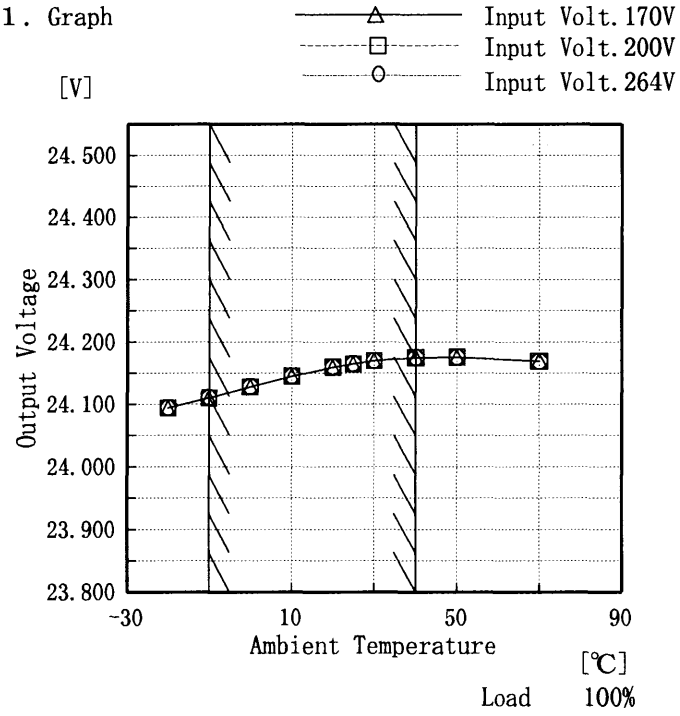


2. Values

Ambient Temperature [℃]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-20	5.026	5.026	5.027
-10	5.029	5.029	5.029
0	5.031	5.032	5.032
10	5.033	5.033	5.034
20	5.036	5.036	5.036
25	5.037	5.037	5.037
30	5.038	5.038	5.038
40	5.038	5.039	5.039
50	5.038	5.038	5.037
70	5.034	5.033	5.033
—	—	—	—

Object V2:+24.0V9A

1. Graph



Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

2. Values

Ambient Temperature [℃]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-20	24.094	24.094	24.095
-10	24.110	24.110	24.111
0	24.127	24.128	24.128
10	24.145	24.145	24.146
20	24.159	24.160	24.160
25	24.164	24.165	24.165
30	24.169	24.170	24.170
40	24.174	24.175	24.175
50	24.175	24.176	24.176
70	24.169	24.169	24.169
—	—	—	—

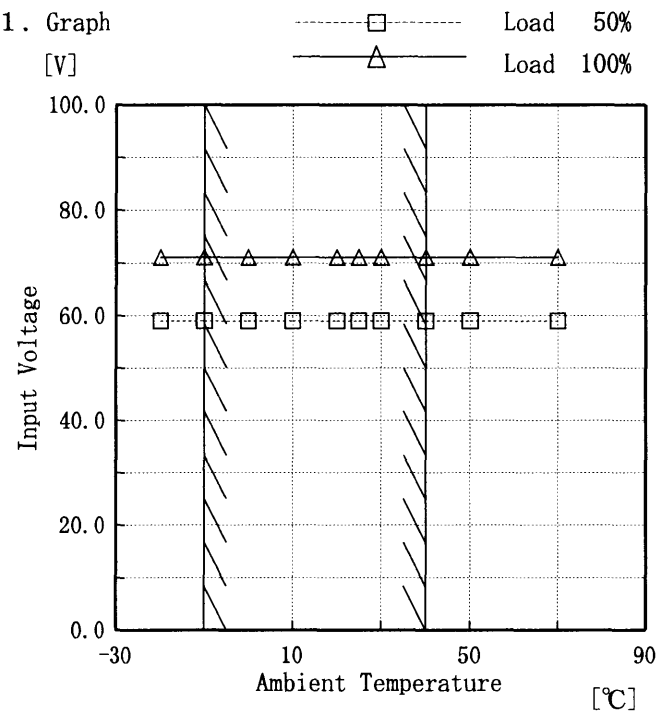
COSEL

Model	LEB225F-0524
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧

Testing Circuitry Figure A

Object V1:+5.0V5A

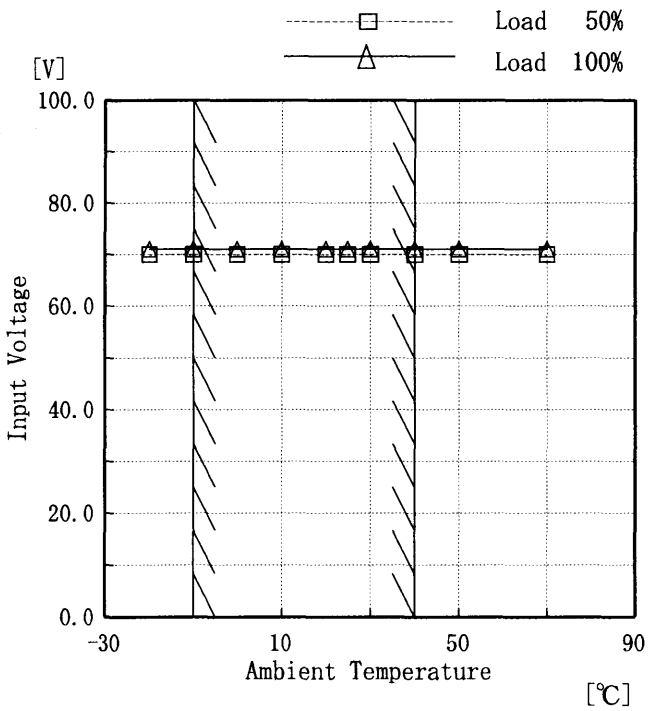
1. Graph



2. Values

Ambient Temperature [℃]	Input Voltage [V]	
	Load 50%	Load 100%
-20	59	71
-10	59	71
0	59	71
10	59	71
20	59	71
25	59	71
30	59	71
40	59	71
50	59	71
70	59	71
—	—	—

Object V2:+24.0V9A



Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

2. Values

Ambient Temperature [℃]	Input Voltage [V]	
	Load 50%	Load 100%
-20	70	71
-10	70	71
0	70	71
10	70	71
20	70	71
25	70	71
30	70	71
40	70	71
50	70	71
70	70	71
—	—	—

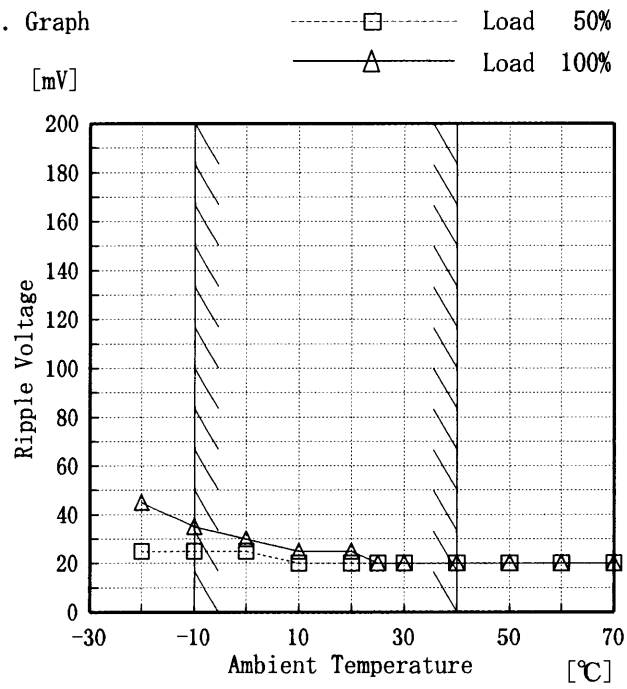
COSEL

Model	LEB225F-0524
Item	Ripple Voltage (by Ambient Temp.) リップル電圧（周囲温度特性）

Testing Circuitry　Figure A

Object　V1:+5.0V5A

1. Graph



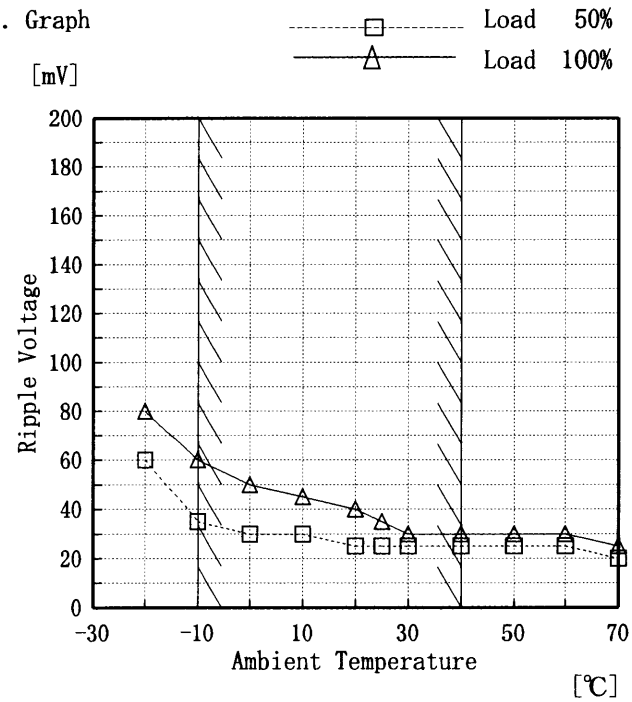
Input Volt.　200 V

2. Values

Ambient Temperature [℃]	Ripple Output Voltage [mV]	
	Load 50%	Load 100%
-20	25	45
-10	25	35
0	25	30
10	20	25
20	20	25
25	20	20
30	20	20
40	20	20
50	20	20
60	20	20
70	20	20

Object　V2:+24.0V9A

1. Graph



Input Volt.　200 V

Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

2. Values

Ambient Temperature [℃]	Ripple Output Voltage [mV]	
	Load 50%	Load 100%
-20	60	80
-10	35	60
0	30	50
10	30	45
20	25	40
25	25	35
30	25	30
40	25	30
50	25	30
60	25	30
70	20	25

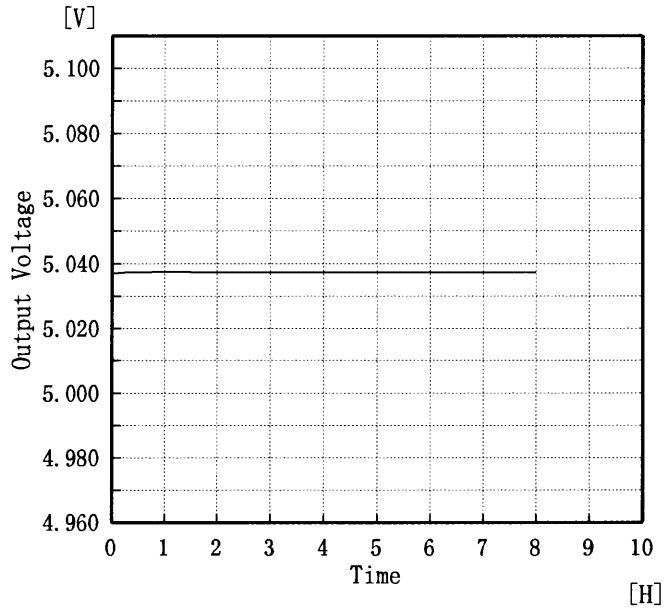
COSEL

Model	LEB225F-0524
Item	Time Lapse Drift 経時ドリフト

Temperature 25℃
Testing Circuitry Figure A

Object V1:+5.0V5A

1. Graph



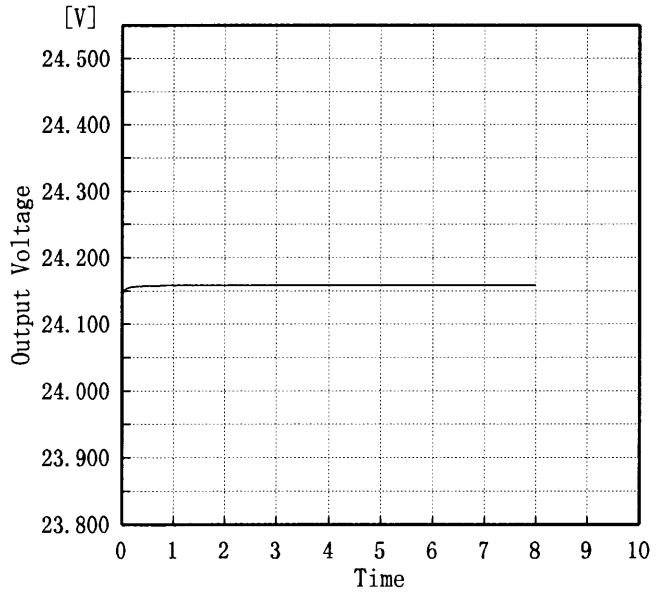
Input Volt. 200V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	5.037
0.5	5.037
1.0	5.037
2.0	5.037
3.0	5.037
4.0	5.037
5.0	5.037
6.0	5.037
7.0	5.037
8.0	5.037

Object V2:+24.0V9A

1. Graph



Input Volt. 200V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	24.137
0.5	24.158
1.0	24.158
2.0	24.158
3.0	24.158
4.0	24.158
5.0	24.158
6.0	24.158
7.0	24.158
8.0	24.158

BC－3275

COSEL

Model	LEB225F-0524
Item	Output Voltage Accuracy 定電圧精度

Testing Circuitry　Figure A

1. Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -10～40 ℃
Input Voltage : 170～264 V
Load Current (V1) : 0～5 A
(V2) : 0～9 A

* Output Voltage Accuracy = ±(Maximum of Output Voltage − Minimum of Output Voltage)／2

* Output Voltage Accuracy (Ration) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}}$ ×１００

1. 定電圧精度

周囲温度、入力電圧、負荷電流を下記仕様内で、任意に変動させたときの出力電圧の変動をいう。

周囲温度　-10～40 ℃
入力電圧　170～264 V
負荷電流 (V1)　0～5 A
(V2)　0～9 A

* 定電圧精度(変動値) ＝ ±(出力電圧の最高値－出力電圧の最低値)／2

* 定電圧精度(変動率) ＝ $\frac{\text{変動値}}{\text{定格出力電圧}}$ ×１００

2. Values

Object	V1:+5.0V5A

Item	Temperature [℃]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy (Ration) [%]
Maximum Voltage	40	170	0	5.053	±11	±0.3
Minimum Voltage	-10	170	5	5.032		

Object	V2:+24.0V9A

Item	Temperature [℃]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy (Ration) [%]
Maximum Voltage	40	264	0	24.204	±40	±0.2
Minimum Voltage	-10	200	9	24.124		

COSEL

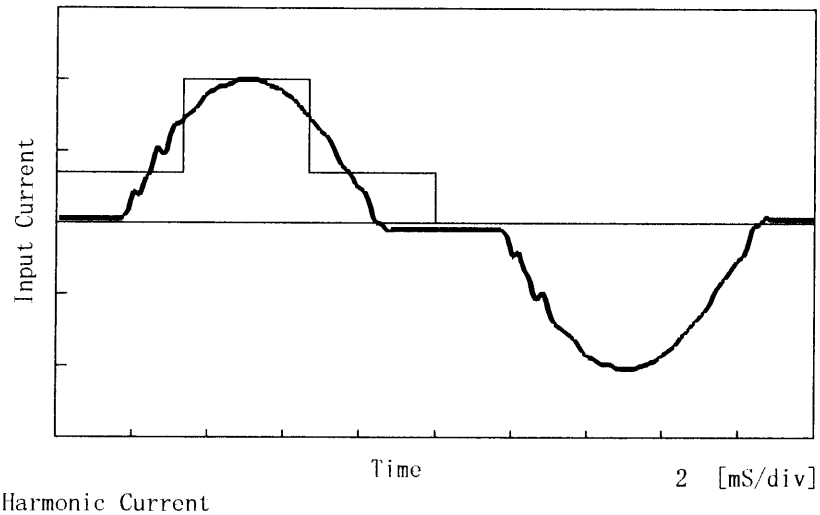
Model	LEB225F-0524		
Item	Harmonic Current 高調波電流	Temperature Testing Circuitry	25℃ Figure E
Object	――――		

1. Input Current Waveform

―― Input Current

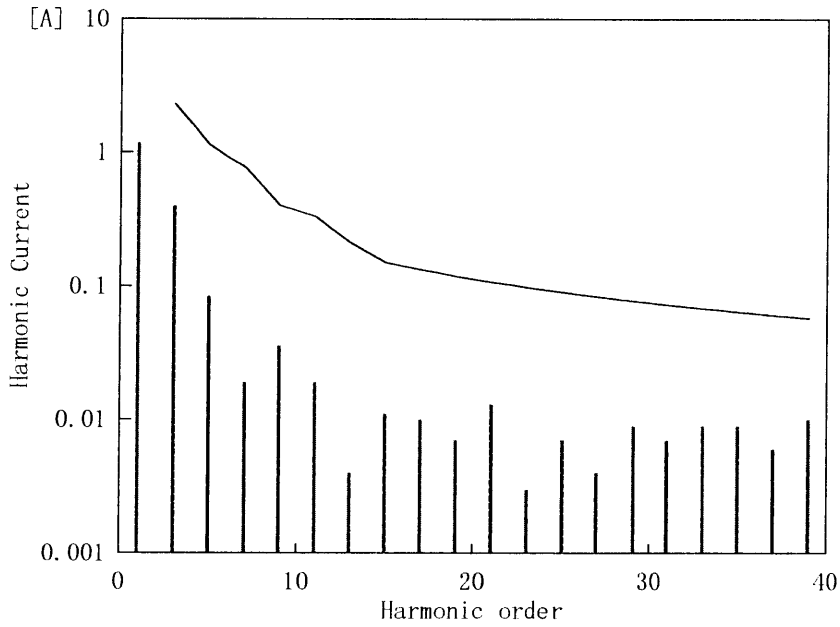
―― Envelope of the input current to classify equipment as Class D
ｸﾗｽDの機器を決定するための入力電流包絡線

1 A/div



Conditions	Values
Input Voltage [V]	230.4
Input Current [A]	1.253
Active Power [W]	270.9
Apparent Power[VA]	288.7
Frequency [Hz]	50
Power Factor	0.938
Output Power [W]	225

2. Harmonic Current



―― Harmonic Current
高調波電流

―― Limits for Class A equipment
ｸﾗｽAの機器に対する限度値

Harmonics order 高調波次数	Limits 限度値 [A]	Values 測定値 [A]
1	—	1.18300
2	—	0.00100
3	2.29601	0.39800
4	—	0.00000
5	1.13802	0.08400
6	—	0.00000
7	0.76866	0.01900
8	—	0.00000
9	0.39931	0.03600
10	—	0.00000
11	0.32943	0.01900
12	—	0.00000
13	0.20964	0.00400
14	—	0.00000
15	0.14974	0.01100
16	—	0.00000
17	0.13212	0.01000
18	—	0.00000
19	0.11822	0.00700
20	—	0.00000
21	0.10696	0.01300
22	—	0.00000
23	0.09766	0.00300
24	—	0.00000
25	0.08984	0.00700
26	—	0.00000
27	0.08319	0.00400
28	—	0.00000
29	0.07745	0.00900
30	—	0.00000
31	0.07245	0.00700
32	—	0.00000
33	0.06806	0.00900
34	—	0.00000
35	0.06417	0.00900
36	—	0.00000
37	0.06071	0.00600
38	—	0.00000
39	0.05759	0.01000
40	—	0.00000

COSEL

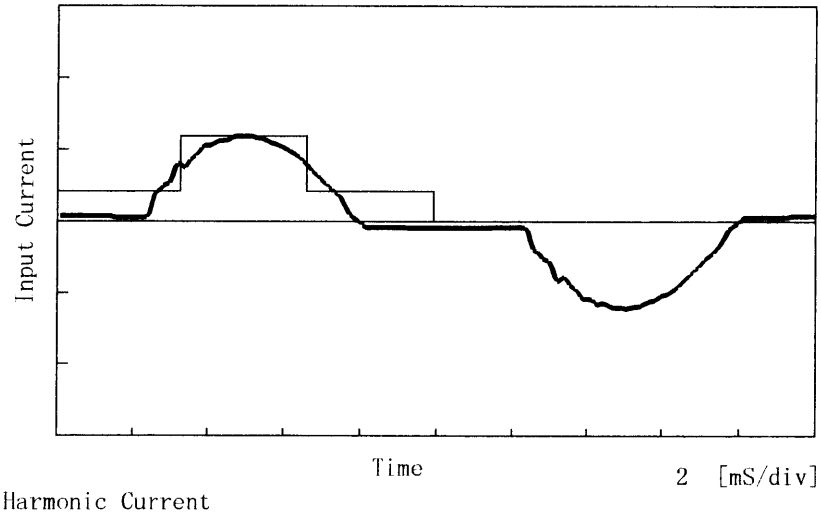
Model	LEB225F-0524		
Item	Harmonic Current 高調波電流	Temperature Testing Circuitry	25℃ Figure E
Object	――――		

1. Input Current Waveform

―― Input Current

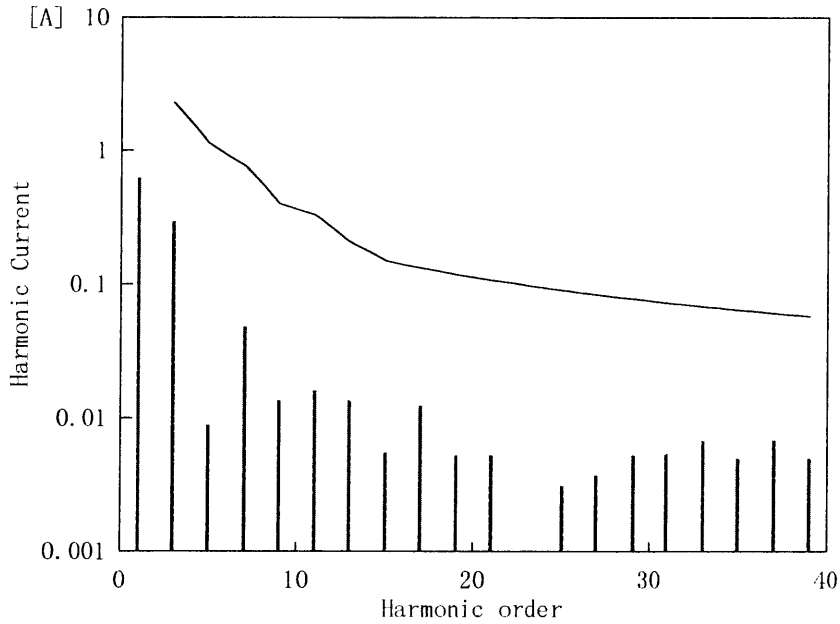
―― Envelope of the input current to classify equipment as Class D
ｸﾗｽDの機器を決定するための入力電流包絡線

1 A/div



Conditions	Values
Input Voltage [V]	230.6
Input Current [A]	0.695
Active Power [W]	142.6
Apparent Power[VA]	160.3
Frequency [Hz]	50
Power Factor	0.890
Output Power [W]	112.5

2. Harmonic Current



―― Harmonic Current
高調波電流

―― Limits for Class A equipment
ｸﾗｽAの機器に対する限度値

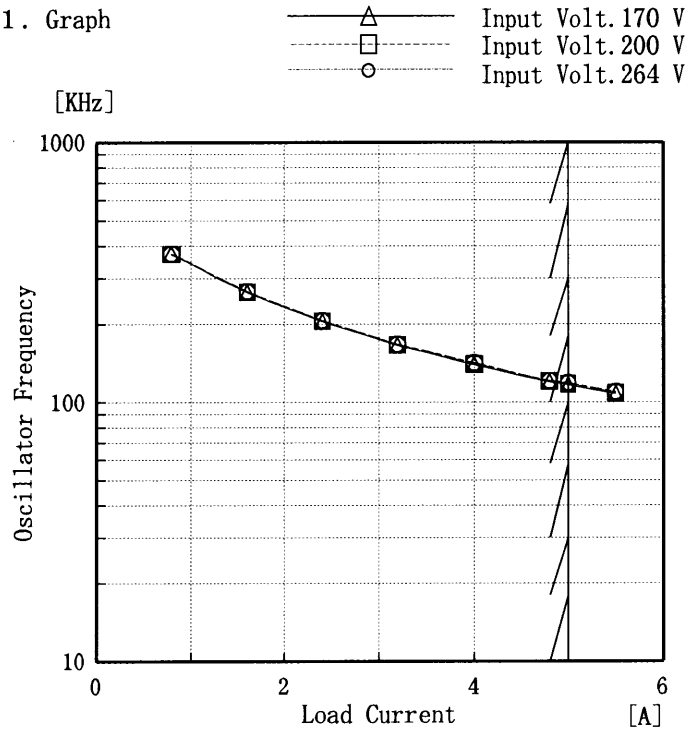
Harmonics order 高調波次数	Limits 限度値 [A]	Values 測定値 [A]
1	—	0.62670
2	—	0.00050
3	2.29402	0.29410
4	—	0.00000
5	1.13703	0.00890
6	—	0.00000
7	0.76800	0.04820
8	—	0.00010
9	0.39896	0.01350
10	—	0.00010
11	0.32914	0.01610
12	—	0.00010
13	0.20945	0.01350
14	—	0.00010
15	0.14961	0.00550
16	—	0.00000
17	0.13201	0.01250
18	—	0.00010
19	0.11811	0.00530
20	—	0.00010
21	0.10686	0.00530
22	—	0.00010
23	0.09757	0.00080
24	—	0.00010
25	0.08977	0.00310
26	—	0.00010
27	0.08312	0.00370
28	—	0.00000
29	0.07738	0.00530
30	—	0.00010
31	0.07239	0.00540
32	—	0.00010
33	0.06800	0.00680
34	—	0.00000
35	0.06412	0.00500
36	—	0.00000
37	0.06065	0.00690
38	—	0.00000
39	0.05754	0.00500
40	—	0.00010

COSEL

Model	LEB225F-0524
Item	Oscillator Frequency 発振周波数
Object	V1:+5.0V5A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Note:Slanted line shows the range of the rated load current.

(注)斜線は定格負荷電流範囲を示す。

2. Values

Load Current [A]	Oscillator Frequency [KHz]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.8	372	373	374
1.6	266	267	268
2.4	205	206	207
3.2	166	167	168
4.0	140	141	142
4.8	120	121	121
5.0	117	118	119
5.5	108	109	110
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	LEB225F-0524
Item	Condensation 結露特性

Testing Circuitry　Figure A

1. Condensation test

Testing procedure is as follows.

① Keeping and cooling the unit in a tank at -10℃ for an hour with the input off.

② Taking it out of the tank and dewing itself in a room where the temperature is 25℃ and the humidity is 40%RH.

③ Testing electrical characteristics of the unit to confirm there be no fault.

1．結露特性試験

入力を切った状態で、恒温槽で－１０℃に冷却しておき、約１時間後に恒温槽から取り出し、室温２５℃、湿度４０%RHの状態におき結露させ、その電気的特性の測定を行い、異常のないことを確認する。

2．Values

Object	V1:＋5.0V5A

Item	Data	Testing Conditions
Output Voltage [V]	5.041	Input Volt.: 200V, Load Current:5A
Line Regulation [mV]	1	Input Volt.: 170～264V, Load Current:5A
Load Regulation [mV]	11	Input Volt.: 200V, Load Current:0～5A

Object	V2:＋24.0V9A

Item	Data	Testing Conditions
Output Voltage [V]	24.173	Input Volt.: 200V, Load Current:9A
Line Regulation [mV]	1	Input Volt.: 170～264V, Load Current:9A
Load Regulation [mV]	15	Input Volt.: 200V, Load Current:0～9A

COSEL

Model	LEB225F-0524		
Item	Leakage Current 漏洩電流	Temperature Testing Circuitry	25℃ Figure B
Object	――――――		

1. Results

Standards	Leakage Current [mA]		
	Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]
(A) DENTORI	—	—	—
(B) IEC60950	—	—	—

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 230 [V]	Input Volt. 264 [V]
(B) IEC60950	0.31	0.43	0.51

2. Condition

Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

交流入力の両相について測定し、その大きい方を漏洩電流測定値とする。

COSEL

Model	LEB225F-0524		
Item	Line Noise Tolerance 入力雑音耐量	Temperature Testing Circuitry	25℃ Figure C
Object	V1:+5.0V5A		

1. Results

Conditions

Input Voltage :200 V
Pulse Voltage :2000 V
Pulse Cycle :10 mS
Pulse Input Duration:1 min. or more
Load :100 %

Pulse Width [nS]	MODE	POLARITY	No protection failure should occur 保護回路の誤動作がない	DC-like Regulation of Output Voltage 出力電圧の直流的変動
50	COMMON	+	OK	no fluctuation
		−	OK	no fluctuation
	NORMAL	+	OK	no fluctuation
		−	OK	no fluctuation
1000	COMMON	+	OK	no fluctuation
		−	OK	no fluctuation
	NORMAL	+	OK	no fluctuation
		−	OK	no fluctuation

Object	V2:+24.0V9A

1. Results

Conditions

Input Voltage :200 V
Pulse Voltage :2000 V
Pulse Cycle :10 mS
Pulse Input Duration:1 min. or more
Load :100 %

Pulse Width [nS]	MODE	POLARITY	No protection failure should occur 保護回路の誤動作がない	DC-like Regulation of Output Voltage 出力電圧の直流的変動
50	COMMON	+	OK	no fluctuation
		−	OK	no fluctuation
	NORMAL	+	OK	no fluctuation
		−	OK	no fluctuation
1000	COMMON	+	OK	no fluctuation
		−	OK	no fluctuation
	NORMAL	+	OK	no fluctuation
		−	OK	no fluctuation

COSEL

Model	LEB225F-0524		
Item	Conducted Emission 雑音端子電圧	Temperature Testing Circuitry	25℃ Figure D
Object	――――――――		

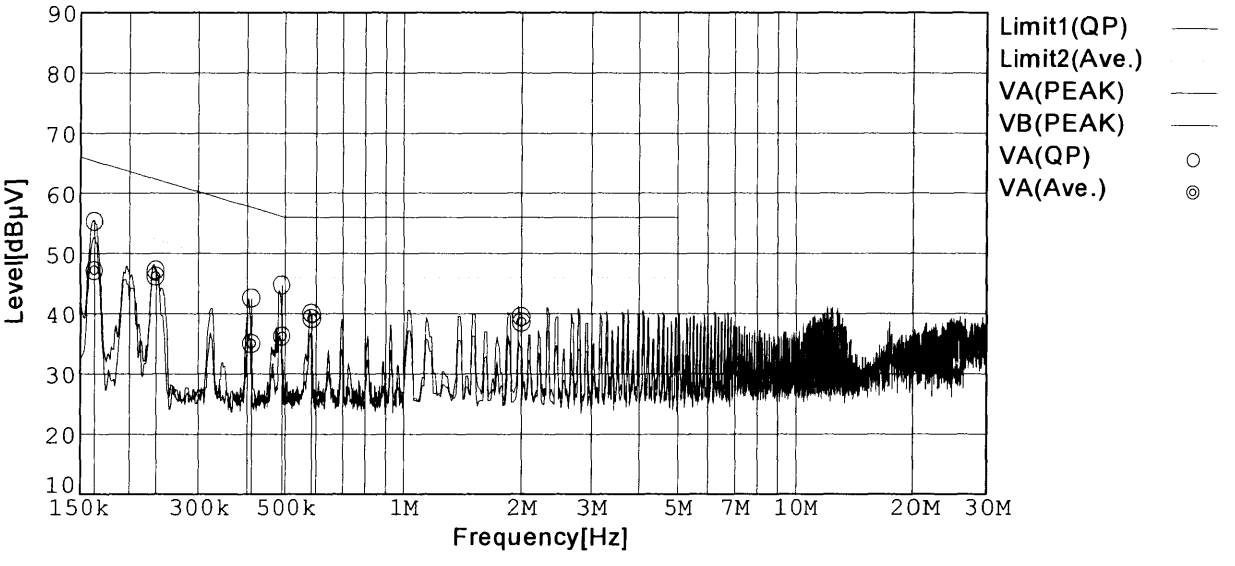
1. Graph

Remarks

Input Volt. 230 V (CISPR Pub22 Class B)

Load 100 %

Limit1: [CISPR Pub22] Class B(QP)
Limit2: [CISPR Pub22] Class B(Ave.)



COSEL

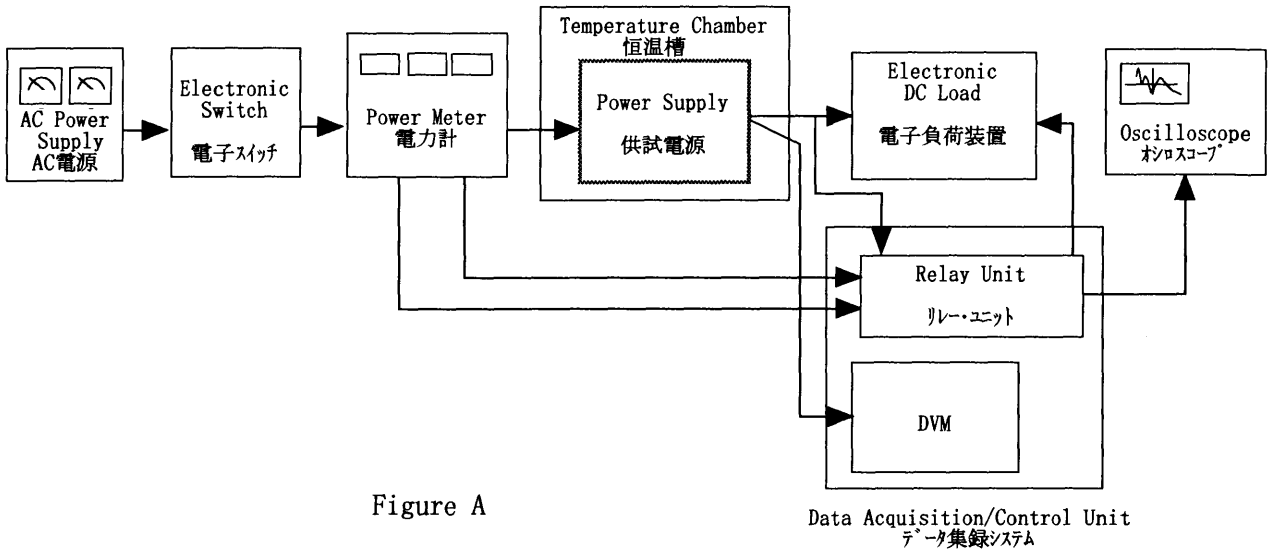


Figure A

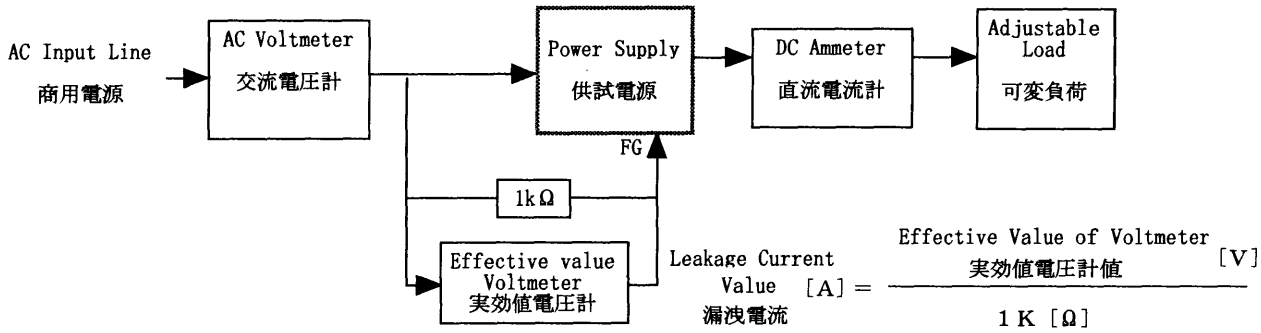


Figure B(DENTORI)

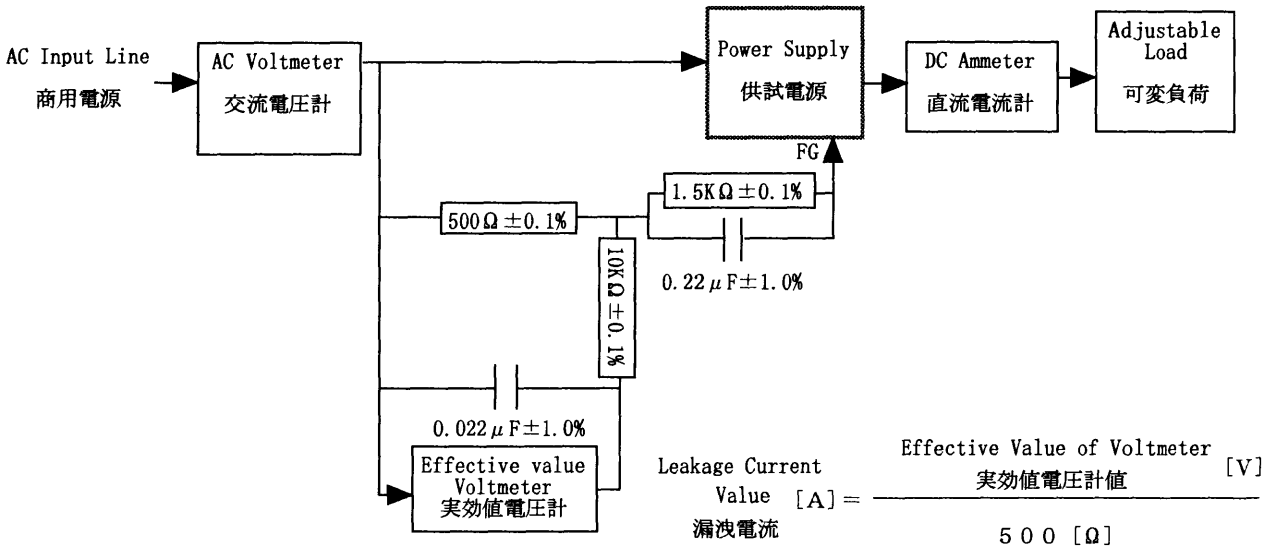


Figure B (IEC60950)

COSEL

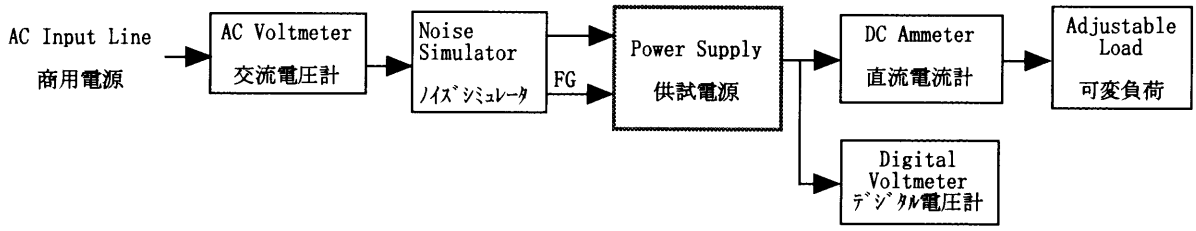


Figure C

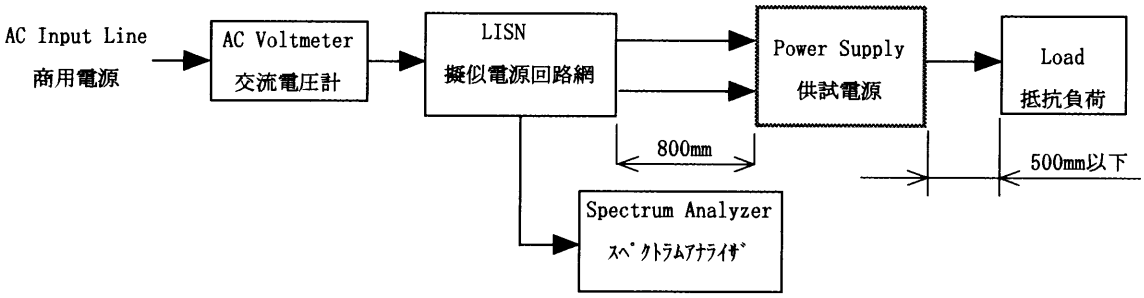


Figure D

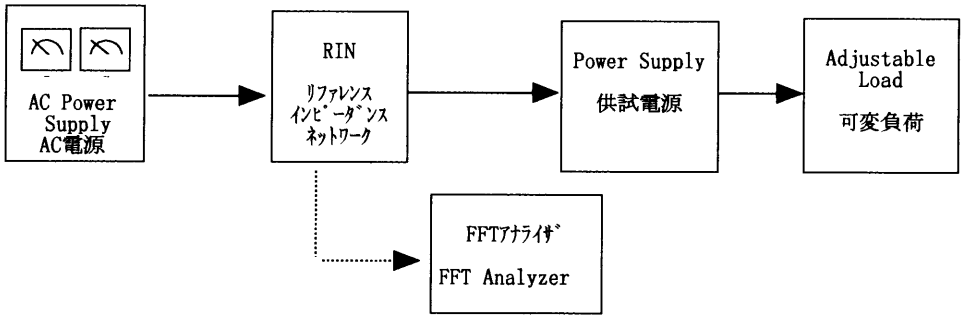


Figure E