

# TEST DATA OF TUHS25F24

Regulated DC Power Supply  
February 28, 2014

Approved by : Nobuyuki Shiraishi  
Nobuyuki Shiraishi Design Manager

Prepared by : Sakae Minamide  
Sakae Minamide Design Engineer

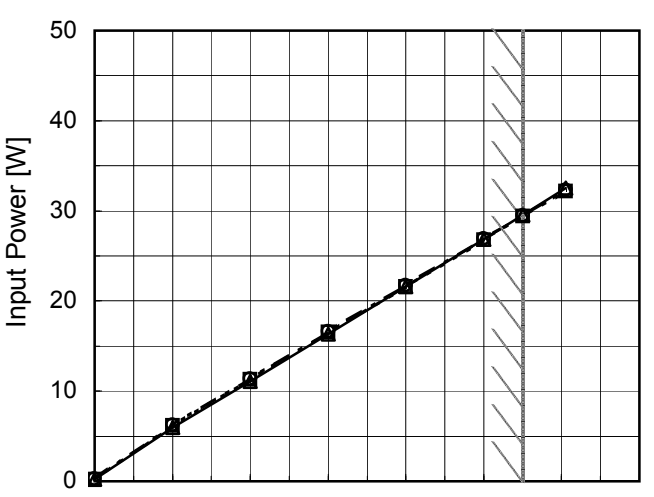
**COSEL CO.,LTD.**

## CONTENTS

1.Input Current (by Load Current) . . . . .	1
2.Input Power (by Load Current) . . . . .	2
3.Efficiency (by Input Voltage) . . . . .	3
4.Efficiency (by Load Current) . . . . .	4
5.Power Factor (by Input Voltage) . . . . .	5
6.Power Factor (by Load Current) . . . . .	6
7.Inrush Current . . . . .	7
8.Leakage Current . . . . .	8
9.Line Regulation . . . . .	9
10.Load Regulation . . . . .	10
11.Dynamic Load Response . . . . .	11
12.Ripple Voltage (by Load Current) . . . . .	12
13.Ripple-Noise . . . . .	13
14.Ripple Voltage (by Ambient Temperature) . . . . .	14
15.Ambient Temperature Drift . . . . .	15
16.Output Voltage Accuracy . . . . .	16
17.Time Lapse Drift . . . . .	17
18.Rise and Fall Time . . . . .	18
19.Hold-Up Time . . . . .	19
20.Instantaneous Interruption Compensation . . . . .	20
21.Minimum Input Voltage for Regulated Output Voltage . . . . .	21
22.Overcurrent Protection . . . . .	22
23.Overvoltage Protection . . . . .	23
24.Figure of Testing Circuitry . . . . .	24

(Final Page 25)

Model	TUHS25F24																																																					
Item	Input Current (by Load Current)	Temperature	25°C																																																			
		Testing Circuitry	Figure A																																																			
Object	_____																																																					
1.Graph		2.Values																																																				
<div><div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div>---□---</div><div>Input Volt.</div><div>200V</div></div><div><div>---○---</div><div>Input Volt.</div><div>230V</div></div></div> <p>Input Current [A]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Current [A]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>0.011</td><td>0.008</td><td>0.008</td></tr><tr><td>0.20</td><td>0.119</td><td>0.078</td><td>0.071</td></tr><tr><td>0.40</td><td>0.207</td><td>0.130</td><td>0.117</td></tr><tr><td>0.60</td><td>0.293</td><td>0.181</td><td>0.164</td></tr><tr><td>0.80</td><td>0.381</td><td>0.229</td><td>0.207</td></tr><tr><td>1.00</td><td>0.469</td><td>0.278</td><td>0.251</td></tr><tr><td>1.10</td><td>0.499</td><td>0.303</td><td>0.270</td></tr><tr><td>1.21</td><td>0.551</td><td>0.322</td><td>0.293</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Input Current [A]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.00	0.011	0.008	0.008	0.20	0.119	0.078	0.071	0.40	0.207	0.130	0.117	0.60	0.293	0.181	0.164	0.80	0.381	0.229	0.207	1.00	0.469	0.278	0.251	1.10	0.499	0.303	0.270	1.21	0.551	0.322	0.293	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Input Current [A]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
0.00	0.011	0.008	0.008																																																			
0.20	0.119	0.078	0.071																																																			
0.40	0.207	0.130	0.117																																																			
0.60	0.293	0.181	0.164																																																			
0.80	0.381	0.229	0.207																																																			
1.00	0.469	0.278	0.251																																																			
1.10	0.499	0.303	0.270																																																			
1.21	0.551	0.322	0.293																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			

Model		TUHS25F24		Temperature 25°C																																																				
Item		Input Power (by Load Current)		Testing Circuitry Figure A																																																				
Object																																																								
1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div>---□---</div><div>Input Volt.</div><div>200V</div></div><div><div>---○---</div><div>Input Volt.</div><div>230V</div></div></div>  <div>Input Power [W]</div> <div>Load Current [A]</div>		2.Values																																																				
		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Power [W]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>0.19</td><td>0.24</td><td>0.25</td></tr><tr><td>0.20</td><td>5.96</td><td>6.16</td><td>6.25</td></tr><tr><td>0.40</td><td>11.10</td><td>11.28</td><td>11.36</td></tr><tr><td>0.60</td><td>16.30</td><td>16.52</td><td>16.63</td></tr><tr><td>0.80</td><td>21.58</td><td>21.62</td><td>21.71</td></tr><tr><td>1.00</td><td>26.85</td><td>26.81</td><td>26.89</td></tr><tr><td>1.10</td><td>29.55</td><td>29.40</td><td>29.49</td></tr><tr><td>1.21</td><td>32.54</td><td>32.20</td><td>32.29</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>				Load Current [A]	Input Power [W]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.00	0.19	0.24	0.25	0.20	5.96	6.16	6.25	0.40	11.10	11.28	11.36	0.60	16.30	16.52	16.63	0.80	21.58	21.62	21.71	1.00	26.85	26.81	26.89	1.10	29.55	29.40	29.49	1.21	32.54	32.20	32.29	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Input Power [W]																																																							
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																					
0.00	0.19	0.24	0.25																																																					
0.20	5.96	6.16	6.25																																																					
0.40	11.10	11.28	11.36																																																					
0.60	16.30	16.52	16.63																																																					
0.80	21.58	21.62	21.71																																																					
1.00	26.85	26.81	26.89																																																					
1.10	29.55	29.40	29.49																																																					
1.21	32.54	32.20	32.29																																																					
--	-	-	-																																																					
--	-	-	-																																																					
--	-	-	-																																																					
Note: Slanted line shows the range of the rated load current.																																																								

Model	TUHS25F24																																		
Item	Efficiency (by Input Voltage)	Temperature	25°C																																
		Testing Circuitry	Figure A																																
Object																																			
1.Graph		2.Values																																	
<div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div></div> <div><div>—</div><div>△</div><div>—</div></div> <div>Load 100%</div> <table><thead><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Efficiency [%]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>75</td><td>88.1</td><td>88.2</td></tr><tr><td>85</td><td>88.2</td><td>89.0</td></tr><tr><td>100</td><td>88.2</td><td>89.6</td></tr><tr><td>120</td><td>87.9</td><td>89.9</td></tr><tr><td>200</td><td>86.2</td><td>89.5</td></tr><tr><td>230</td><td>85.8</td><td>89.1</td></tr><tr><td>264</td><td>84.6</td><td>88.7</td></tr><tr><td>280</td><td>84.3</td><td>88.7</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table>		Input Voltage [V]	Efficiency [%]		Load 50%	Load 100%	75	88.1	88.2	85	88.2	89.0	100	88.2	89.6	120	87.9	89.9	200	86.2	89.5	230	85.8	89.1	264	84.6	88.7	280	84.3	88.7	--	-	-		
Input Voltage [V]	Efficiency [%]																																		
	Load 50%	Load 100%																																	
75	88.1	88.2																																	
85	88.2	89.0																																	
100	88.2	89.6																																	
120	87.9	89.9																																	
200	86.2	89.5																																	
230	85.8	89.1																																	
264	84.6	88.7																																	
280	84.3	88.7																																	
--	-	-																																	
Note: Slanted line shows the range of the rated input voltage.																																			

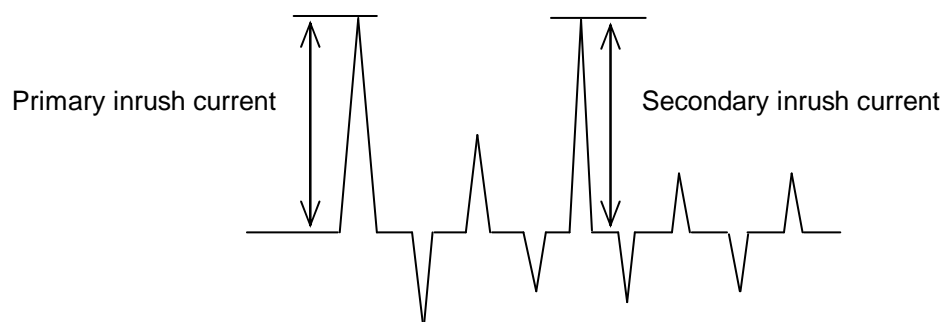
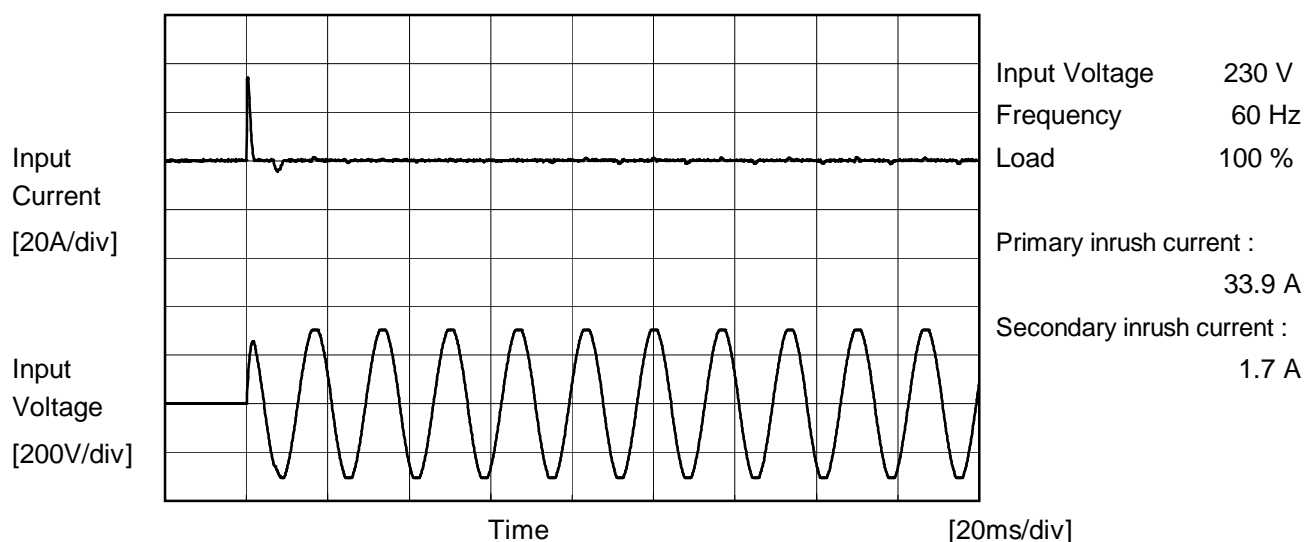
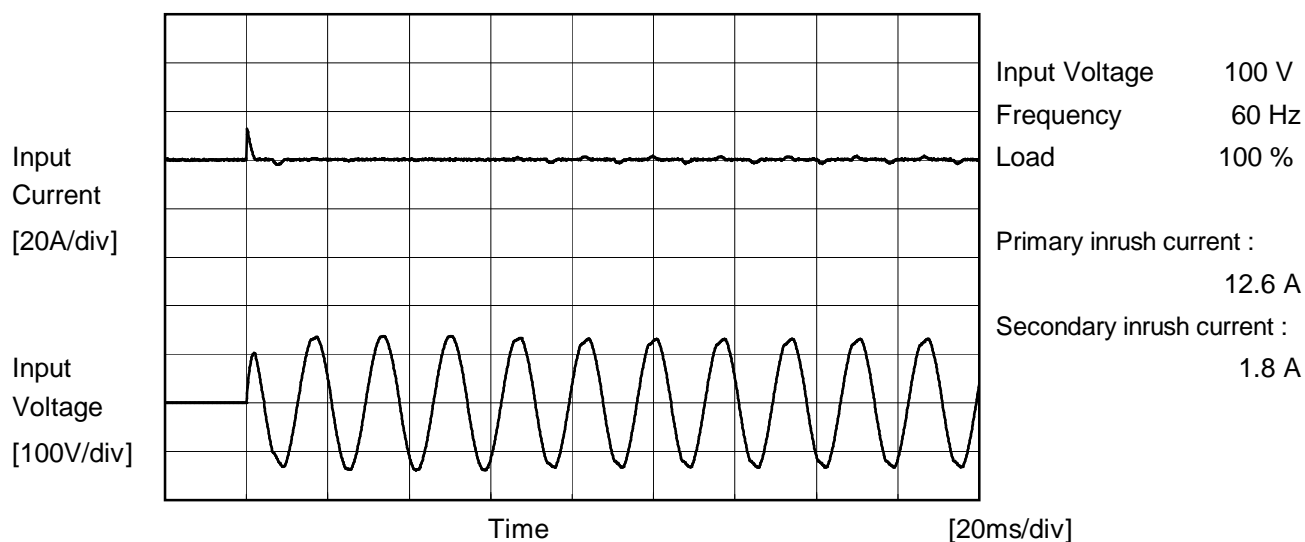
Model	TUHS25F24																																																					
Item	Efficiency (by Load Current)	Temperature	25°C																																																			
		Testing Circuitry	Figure A																																																			
Object	_____																																																					
1.Graph		2.Values																																																				
<div><div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div>---□---</div><div>Input Volt.</div><div>200V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>230V</div></div></div> <p>Efficiency [%]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Efficiency [%]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.20</td><td>80.9</td><td>77.9</td><td>76.9</td></tr><tr><td>0.40</td><td>86.7</td><td>85.2</td><td>84.1</td></tr><tr><td>0.60</td><td>88.6</td><td>87.1</td><td>86.2</td></tr><tr><td>0.80</td><td>89.2</td><td>88.7</td><td>88.1</td></tr><tr><td>1.00</td><td>89.6</td><td>89.3</td><td>88.9</td></tr><tr><td>1.10</td><td>89.6</td><td>89.5</td><td>88.7</td></tr><tr><td>1.21</td><td>89.5</td><td>90.0</td><td>89.7</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Efficiency [%]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.00	-	-	-	0.20	80.9	77.9	76.9	0.40	86.7	85.2	84.1	0.60	88.6	87.1	86.2	0.80	89.2	88.7	88.1	1.00	89.6	89.3	88.9	1.10	89.6	89.5	88.7	1.21	89.5	90.0	89.7	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Efficiency [%]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
0.00	-	-	-																																																			
0.20	80.9	77.9	76.9																																																			
0.40	86.7	85.2	84.1																																																			
0.60	88.6	87.1	86.2																																																			
0.80	89.2	88.7	88.1																																																			
1.00	89.6	89.3	88.9																																																			
1.10	89.6	89.5	88.7																																																			
1.21	89.5	90.0	89.7																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			

Model	TUHS25F24																																		
Item	Power Factor (by Input Voltage)	Temperature	25°C																																
		Testing Circuitry	Figure A																																
Object																																			
1.Graph		2.Values																																	
<div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div></div> <div><div>—</div><div>△</div><div>—</div></div> <div>Load 100%</div> <table><thead><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Power Factor</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>75</td><td>0.580</td><td>0.596</td></tr><tr><td>85</td><td>0.562</td><td>0.581</td></tr><tr><td>100</td><td>0.539</td><td>0.563</td></tr><tr><td>120</td><td>0.515</td><td>0.539</td></tr><tr><td>200</td><td>0.444</td><td>0.481</td></tr><tr><td>230</td><td>0.429</td><td>0.464</td></tr><tr><td>264</td><td>0.413</td><td>0.445</td></tr><tr><td>280</td><td>0.407</td><td>0.439</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table>		Input Voltage [V]	Power Factor		Load 50%	Load 100%	75	0.580	0.596	85	0.562	0.581	100	0.539	0.563	120	0.515	0.539	200	0.444	0.481	230	0.429	0.464	264	0.413	0.445	280	0.407	0.439	--	-	-		
Input Voltage [V]	Power Factor																																		
	Load 50%	Load 100%																																	
75	0.580	0.596																																	
85	0.562	0.581																																	
100	0.539	0.563																																	
120	0.515	0.539																																	
200	0.444	0.481																																	
230	0.429	0.464																																	
264	0.413	0.445																																	
280	0.407	0.439																																	
--	-	-																																	
Note: Slanted line shows the range of the rated input voltage.																																			

Model	TUHS25F24																																																					
Item	Power Factor (by Load Current)	Temperature	25°C																																																			
		Testing Circuitry	Figure A																																																			
Object	_____																																																					
1.Graph		2.Values																																																				
<div><div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div>---□---</div><div>Input Volt.</div><div>200V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>230V</div></div></div> <div>Power Factor</div> <div>Load Current [A]</div> <div>Note: Slanted line shows the range of the rated load current.</div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Power Factor</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>0.300</td><td>0.258</td><td>0.253</td></tr><tr><td>0.20</td><td>0.488</td><td>0.393</td><td>0.378</td></tr><tr><td>0.40</td><td>0.527</td><td>0.432</td><td>0.415</td></tr><tr><td>0.60</td><td>0.546</td><td>0.454</td><td>0.436</td></tr><tr><td>0.80</td><td>0.556</td><td>0.467</td><td>0.450</td></tr><tr><td>1.00</td><td>0.561</td><td>0.478</td><td>0.460</td></tr><tr><td>1.10</td><td>0.563</td><td>0.481</td><td>0.464</td></tr><tr><td>1.21</td><td>0.565</td><td>0.484</td><td>0.467</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Power Factor			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.00	0.300	0.258	0.253	0.20	0.488	0.393	0.378	0.40	0.527	0.432	0.415	0.60	0.546	0.454	0.436	0.80	0.556	0.467	0.450	1.00	0.561	0.478	0.460	1.10	0.563	0.481	0.464	1.21	0.565	0.484	0.467	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Power Factor																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
0.00	0.300	0.258	0.253																																																			
0.20	0.488	0.393	0.378																																																			
0.40	0.527	0.432	0.415																																																			
0.60	0.546	0.454	0.436																																																			
0.80	0.556	0.467	0.450																																																			
1.00	0.561	0.478	0.460																																																			
1.10	0.563	0.481	0.464																																																			
1.21	0.565	0.484	0.467																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			



Model	TUHS25F24	Temperature Testing Circuitry	25°C Figure A
Item	Inrush Current		
Object	_____		



		Temperature 25°C Testing Circuitry Figure B
Model	TUHS25F24	
Item	Leakage Current	
Object	_____	

## 1.Results

[mA]

Standards		Input Volt.			Note
		100 [V]	200 [V]	230 [V]	
DEN-AN	Both phases	0.008	0.009	0.010	Operation
	One of phases	0.008	0.017	0.020	Stand by
IEC60950-1	Both phases	0.006	0.011	0.014	Operation
	One of phases	0.008	0.016	0.020	Stand by

The value for "One of phases" is the reference value only.

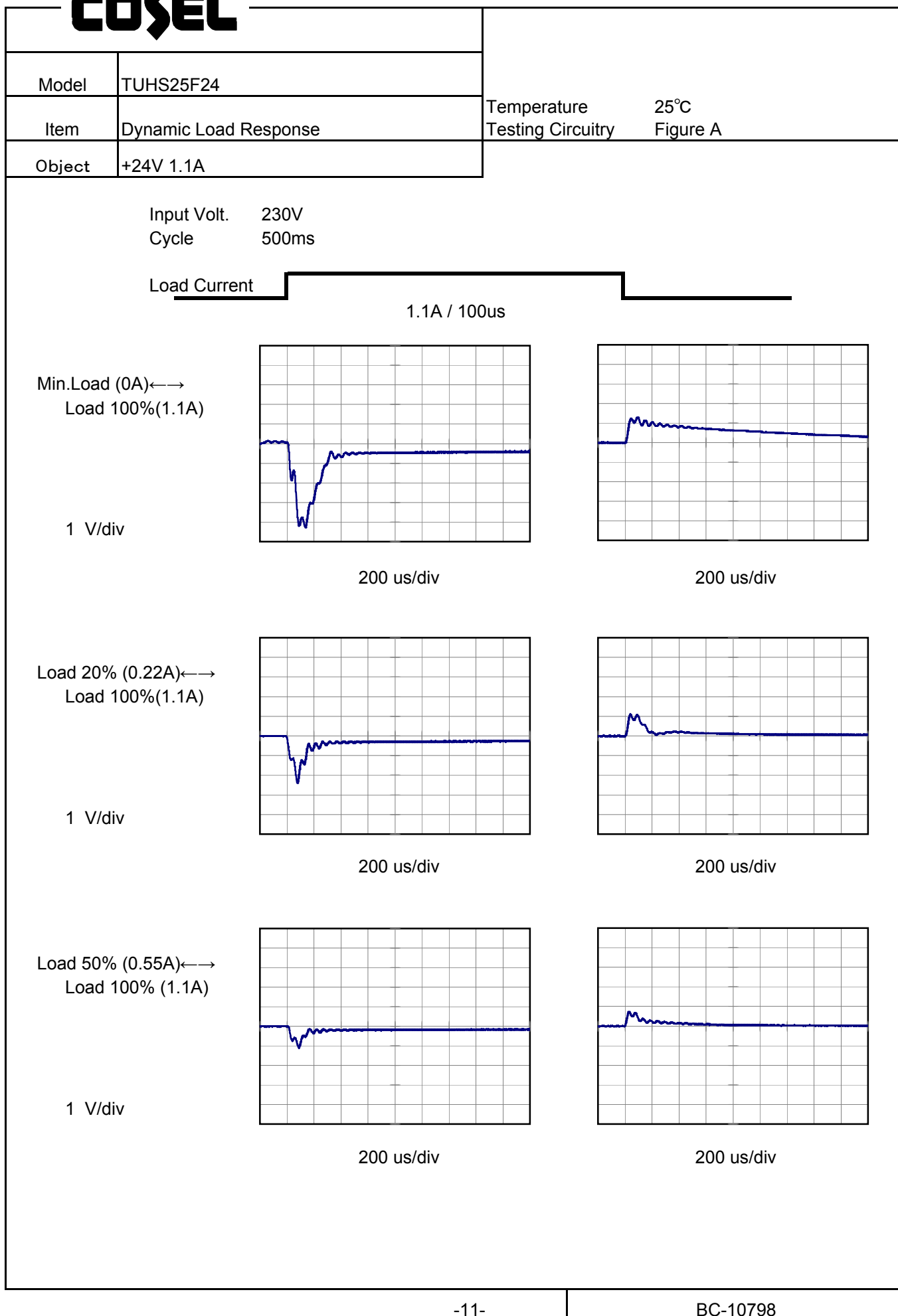
## 2.Condition

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

There is no FG in TUHS series and it is a reinforced insulation power supply of the class 2.

Model	TUHS25F24																																		
Item	Line Regulation	Temperature	25°C																																
		Testing Circuitry	Figure A																																
Object	+24V1.1A																																		
1.Graph		2.Values																																	
<div><div>---□---</div><div>Load 50%</div></div> <div><div>—△—</div><div>Load 100%</div></div> <p>Note: Slanted line shows the range of the rated input voltage.</p>		<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Output Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>75</td><td>24.068</td><td>24.060</td></tr><tr><td>85</td><td>24.067</td><td>24.059</td></tr><tr><td>100</td><td>24.065</td><td>24.056</td></tr><tr><td>120</td><td>24.063</td><td>24.053</td></tr><tr><td>200</td><td>24.054</td><td>24.044</td></tr><tr><td>230</td><td>24.049</td><td>24.040</td></tr><tr><td>264</td><td>24.046</td><td>24.036</td></tr><tr><td>280</td><td>24.043</td><td>24.034</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	75	24.068	24.060	85	24.067	24.059	100	24.065	24.056	120	24.063	24.053	200	24.054	24.044	230	24.049	24.040	264	24.046	24.036	280	24.043	24.034	--	-	-
Input Voltage [V]	Output Voltage [V]																																		
	Load 50%	Load 100%																																	
75	24.068	24.060																																	
85	24.067	24.059																																	
100	24.065	24.056																																	
120	24.063	24.053																																	
200	24.054	24.044																																	
230	24.049	24.040																																	
264	24.046	24.036																																	
280	24.043	24.034																																	
--	-	-																																	

Model	TUHS25F24																																																					
Item	Load Regulation	Temperature	25°C																																																			
		Testing Circuitry	Figure A																																																			
Object	+24V1.1A																																																					
1.Graph		2.Values																																																				
<div><div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div>---□---</div><div>Input Volt.</div><div>200V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>230V</div></div></div> <p>Output Voltage [V]</p> <p>Load Current [A]</p>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>24.084</td><td>24.081</td><td>24.081</td></tr><tr><td>0.20</td><td>24.069</td><td>24.060</td><td>24.055</td></tr><tr><td>0.40</td><td>24.068</td><td>24.056</td><td>24.051</td></tr><tr><td>0.60</td><td>24.064</td><td>24.054</td><td>24.049</td></tr><tr><td>0.80</td><td>24.061</td><td>24.051</td><td>24.046</td></tr><tr><td>1.00</td><td>24.058</td><td>24.046</td><td>24.043</td></tr><tr><td>1.10</td><td>24.056</td><td>24.044</td><td>24.040</td></tr><tr><td>1.21</td><td>24.054</td><td>24.040</td><td>24.038</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Output Voltage [V]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.00	24.084	24.081	24.081	0.20	24.069	24.060	24.055	0.40	24.068	24.056	24.051	0.60	24.064	24.054	24.049	0.80	24.061	24.051	24.046	1.00	24.058	24.046	24.043	1.10	24.056	24.044	24.040	1.21	24.054	24.040	24.038	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Output Voltage [V]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
0.00	24.084	24.081	24.081																																																			
0.20	24.069	24.060	24.055																																																			
0.40	24.068	24.056	24.051																																																			
0.60	24.064	24.054	24.049																																																			
0.80	24.061	24.051	24.046																																																			
1.00	24.058	24.046	24.043																																																			
1.10	24.056	24.044	24.040																																																			
1.21	24.054	24.040	24.038																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
Note: Slanted line shows the range of the rated load current.																																																						

**COSEL**

Model	TUHS25F24																																								
Item	Ripple Voltage (by Load Current)	Temperature	25°C																																						
Object	+24V1.1A	Testing Circuitry	Figure C																																						
1.Graph		2.Values																																							
<div><div><div><div></div><div>Input Volt. 100V</div></div><div><div></div><div>Input Volt. 230V</div></div></div><div><p>Ripple Voltage [mV]</p><p>Load Current [A]</p></div></div> <table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 100 [V]</th><th>Input Volt. 230 [V]</th></tr><tr><td>0.00</td><td>115</td><td>210</td></tr><tr><td>0.20</td><td>10</td><td>20</td></tr><tr><td>0.40</td><td>10</td><td>20</td></tr><tr><td>0.60</td><td>10</td><td>20</td></tr><tr><td>0.80</td><td>15</td><td>20</td></tr><tr><td>1.00</td><td>15</td><td>20</td></tr><tr><td>1.10</td><td>15</td><td>20</td></tr><tr><td>1.21</td><td>15</td><td>20</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 100 [V]	Input Volt. 230 [V]	0.00	115	210	0.20	10	20	0.40	10	20	0.60	10	20	0.80	15	20	1.00	15	20	1.10	15	20	1.21	15	20	--	-	-	--	-	-	--	-	-		
Load Current [A]	Ripple Voltage [mV]																																								
	Input Volt. 100 [V]	Input Volt. 230 [V]																																							
0.00	115	210																																							
0.20	10	20																																							
0.40	10	20																																							
0.60	10	20																																							
0.80	15	20																																							
1.00	15	20																																							
1.10	15	20																																							
1.21	15	20																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
<p>Measured by 100 MHz Oscilloscope.</p> <p>Ripple Voltage is shown as p-p in the figure below.</p> <p>Note: Slanted line shows the range of the rated load current.</p>																																									
<div><div><div></div><div>T1: Due to AC Input Line</div></div><div><div></div><div>T2: Due to Switching</div></div></div> <div><p>Ripple [mVp-p]</p><p>T1</p><p>T2</p></div> <p>Fig. Complex Ripple Wave Form</p>																																									

Model	TUHS25F24		
Item	Ripple-Noise	Temperature	25°C
Object	+24V1.1A	Testing Circuitry	Figure C
1.Graph		2.Values	
<div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div>			

Model		TUHS25F24	Testing Circuitry    Figure C																																					
Item		Ripple Voltage (by Ambient Temp.)																																						
Object		+24V1.1A																																						
1.Graph		<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>Input Volt. 100V</div><div>Input Volt. 200V</div></div></div><table><thead><tr><th>Ambient Temperature [°C]</th><th>Input Volt. 100V [mV]</th><th>Input Volt. 200V [mV]</th></tr></thead><tbody><tr><td>-45</td><td>25</td><td>25</td></tr><tr><td>-40</td><td>25</td><td>25</td></tr><tr><td>-20</td><td>15</td><td>20</td></tr><tr><td>0</td><td>15</td><td>20</td></tr><tr><td>25</td><td>15</td><td>20</td></tr><tr><td>50</td><td>10</td><td>20</td></tr><tr><td>55</td><td>10</td><td>20</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table></div>	Ambient Temperature [°C]	Input Volt. 100V [mV]	Input Volt. 200V [mV]	-45	25	25	-40	25	25	-20	15	20	0	15	20	25	15	20	50	10	20	55	10	20	--	-	-	--	-	-	--	-	-	--	-	-	2.Values	
Ambient Temperature [°C]	Input Volt. 100V [mV]	Input Volt. 200V [mV]																																						
-45	25	25																																						
-40	25	25																																						
-20	15	20																																						
0	15	20																																						
25	15	20																																						
50	10	20																																						
55	10	20																																						
--	-	-																																						
--	-	-																																						
--	-	-																																						
--	-	-																																						
		<table><thead><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 100V</th><th>Input Volt. 230V</th></tr></thead><tbody><tr><td>-45</td><td>25</td><td>25</td></tr><tr><td>-40</td><td>25</td><td>25</td></tr><tr><td>-20</td><td>15</td><td>20</td></tr><tr><td>0</td><td>15</td><td>20</td></tr><tr><td>25</td><td>15</td><td>20</td></tr><tr><td>50</td><td>10</td><td>20</td></tr><tr><td>55</td><td>10</td><td>20</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table>	Ambient Temperature [°C]	Ripple Voltage [mV]		Input Volt. 100V	Input Volt. 230V	-45	25	25	-40	25	25	-20	15	20	0	15	20	25	15	20	50	10	20	55	10	20	--	-	-	--	-	-	--	-	-	--	-	-
Ambient Temperature [°C]	Ripple Voltage [mV]																																							
	Input Volt. 100V	Input Volt. 230V																																						
-45	25	25																																						
-40	25	25																																						
-20	15	20																																						
0	15	20																																						
25	15	20																																						
50	10	20																																						
55	10	20																																						
--	-	-																																						
--	-	-																																						
--	-	-																																						
--	-	-																																						



Model	TUHS25F24																																																						
Item	Ambient Temperature Drift	Testing Circuitry    Figure A																																																					
Object	+24V1.1A																																																						
1.Graph		2.Values																																																					
<div><div>—△—    Input Volt.    100V</div><div>---□---    Input Volt.    200V</div><div>-·-○-·-    Input Volt.    230V</div></div> <p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p>		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>-45</td><td>24.091</td><td>24.074</td><td>24.071</td></tr><tr><td>-40</td><td>24.094</td><td>24.078</td><td>24.074</td></tr><tr><td>-20</td><td>24.097</td><td>24.081</td><td>24.078</td></tr><tr><td>0</td><td>24.085</td><td>24.072</td><td>24.068</td></tr><tr><td>25</td><td>24.056</td><td>24.044</td><td>24.040</td></tr><tr><td>50</td><td>24.006</td><td>23.996</td><td>23.992</td></tr><tr><td>55</td><td>23.996</td><td>23.986</td><td>23.982</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>			Ambient Temperature [°C]	Output Voltage [V]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	-45	24.091	24.074	24.071	-40	24.094	24.078	24.074	-20	24.097	24.081	24.078	0	24.085	24.072	24.068	25	24.056	24.044	24.040	50	24.006	23.996	23.992	55	23.996	23.986	23.982	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Ambient Temperature [°C]	Output Voltage [V]																																																						
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																				
-45	24.091	24.074	24.071																																																				
-40	24.094	24.078	24.074																																																				
-20	24.097	24.081	24.078																																																				
0	24.085	24.072	24.068																																																				
25	24.056	24.044	24.040																																																				
50	24.006	23.996	23.992																																																				
55	23.996	23.986	23.982																																																				
--	-	-	-																																																				
--	-	-	-																																																				
--	-	-	-																																																				
--	-	-	-																																																				
Note: Slanted line shows the range of the rated ambient temperature.																																																							



Model		TUHS25F24	Testing Circuitry Figure A
Item		Output Voltage Accuracy	
Object		+24V1.1A	

### 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 : -40 - 50°C

Input Voltage : 85 - 264V

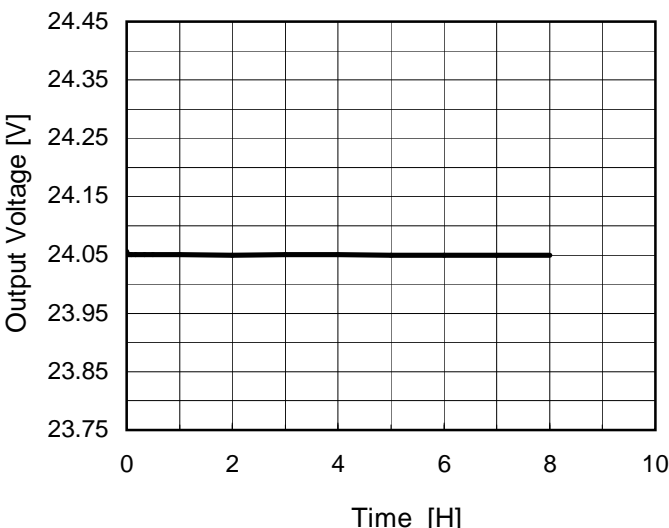
Load Current : 0 - 1.1A

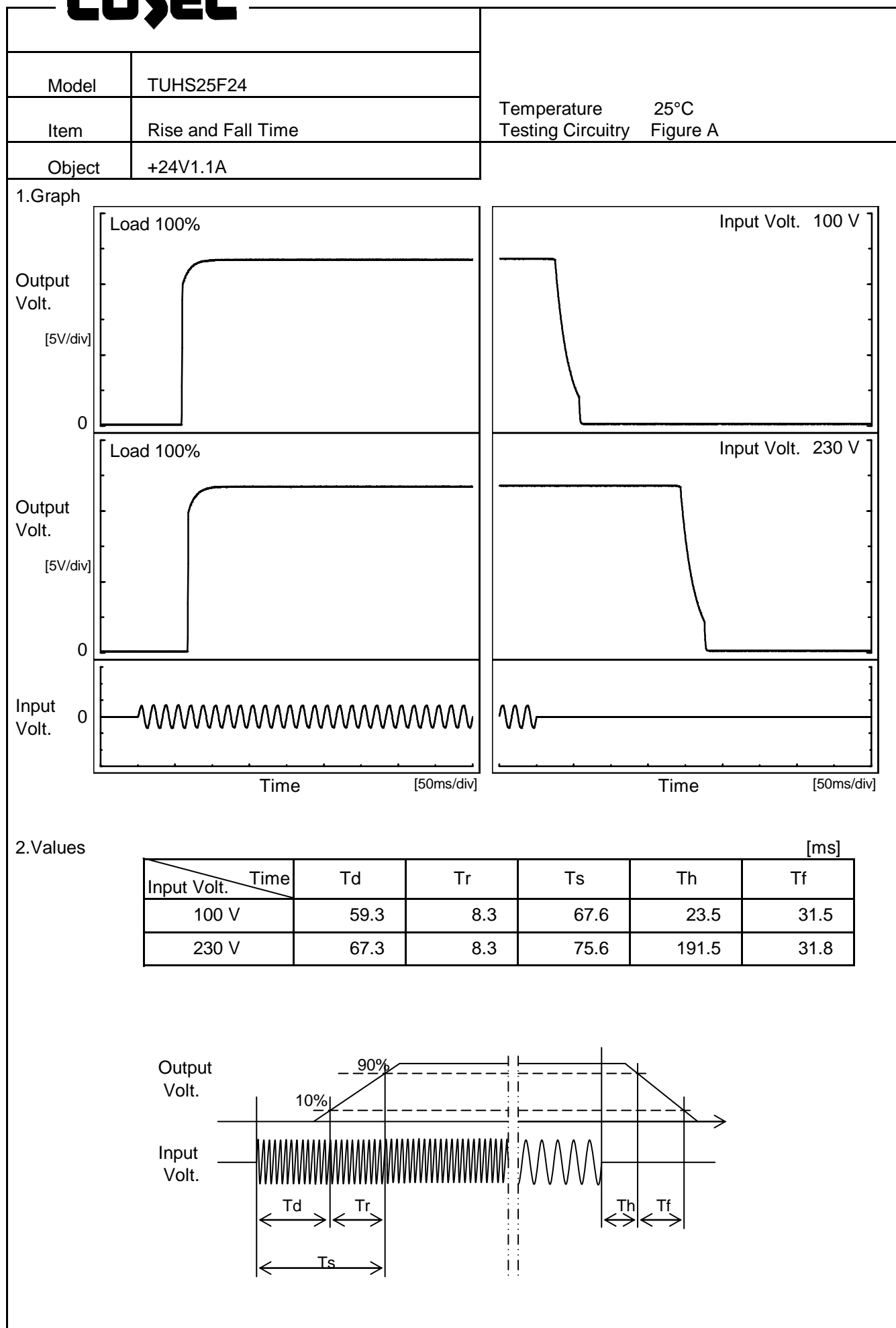
\* Output Voltage Accuracy =  $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

### 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-20	264	0	24.116	±63	±0.3
Minimum Voltage	50	264	1.1	23.990		

Model	TUHS25F24																								
Item	Time Lapse Drift	Temperature	25°C																						
Object	+24V1.1A	Testing Circuitry	Figure A																						
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 100V</p><p>Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>24.056</td></tr><tr><td>0.5</td><td>24.050</td></tr><tr><td>1.0</td><td>24.050</td></tr><tr><td>2.0</td><td>24.050</td></tr><tr><td>3.0</td><td>24.050</td></tr><tr><td>4.0</td><td>24.050</td></tr><tr><td>5.0</td><td>24.050</td></tr><tr><td>6.0</td><td>24.050</td></tr><tr><td>7.0</td><td>24.050</td></tr><tr><td>8.0</td><td>24.050</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	24.056	0.5	24.050	1.0	24.050	2.0	24.050	3.0	24.050	4.0	24.050	5.0	24.050	6.0	24.050	7.0	24.050	8.0	24.050
Time since start [H]	Output Voltage [V]																								
0.0	24.056																								
0.5	24.050																								
1.0	24.050																								
2.0	24.050																								
3.0	24.050																								
4.0	24.050																								
5.0	24.050																								
6.0	24.050																								
7.0	24.050																								
8.0	24.050																								
* The characteristic of AC230V is equal.																									



Model	TUHS25F24																																		
Item	Hold-Up Time	Temperature	25°C																																
		Testing Circuitry	Figure A																																
Object	+24V1.1A																																		
1.Graph		2.Values																																	
<div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div></div> <div><div>—</div><div>△</div><div>—</div></div> <div>Load 100%</div> <div><div>Hold-Up Time [ms]</div><div><div>1000</div><div>100</div><div>10</div><div>1</div></div><div><div>50</div><div>100</div><div>150</div><div>200</div><div>250</div><div>300</div></div><div>Input Voltage [V]</div></div> <div><div><div>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</div><div>Note: Slanted line shows the range of the rated input voltage.</div></div></div>		<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Hold-Up Time [ms]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>75</td><td>27</td><td>8</td></tr><tr><td>85</td><td>39</td><td>14</td></tr><tr><td>100</td><td>59</td><td>24</td></tr><tr><td>120</td><td>92</td><td>40</td></tr><tr><td>200</td><td>288</td><td>140</td></tr><tr><td>230</td><td>389</td><td>192</td></tr><tr><td>264</td><td>523</td><td>260</td></tr><tr><td>280</td><td>593</td><td>296</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Input Voltage [V]	Hold-Up Time [ms]		Load 50%	Load 100%	75	27	8	85	39	14	100	59	24	120	92	40	200	288	140	230	389	192	264	523	260	280	593	296	--	-	-
Input Voltage [V]	Hold-Up Time [ms]																																		
	Load 50%	Load 100%																																	
75	27	8																																	
85	39	14																																	
100	59	24																																	
120	92	40																																	
200	288	140																																	
230	389	192																																	
264	523	260																																	
280	593	296																																	
--	-	-																																	

Model	TUHS25F24																																																					
Item	Instantaneous Interruption Compensation	Temperature	25°C																																																			
Object	+24V1.1A	Testing Circuitry	Figure A																																																			
1.Graph		2.Values																																																				
<div><div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div>---□---</div><div>Input Volt.</div><div>200V</div></div><div><div>---○---</div><div>Input Volt.</div><div>230V</div></div></div> <p>Instantaneous Compensation Time [ms]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Time [ms]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.20</td><td>81</td><td>383</td><td>515</td></tr><tr><td>0.40</td><td>69</td><td>329</td><td>443</td></tr><tr><td>0.60</td><td>56</td><td>275</td><td>371</td></tr><tr><td>0.80</td><td>43</td><td>221</td><td>299</td></tr><tr><td>1.00</td><td>30</td><td>167</td><td>227</td></tr><tr><td>1.10</td><td>24</td><td>140</td><td>192</td></tr><tr><td>1.21</td><td>17</td><td>110</td><td>152</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Time [ms]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.00	-	-	-	0.20	81	383	515	0.40	69	329	443	0.60	56	275	371	0.80	43	221	299	1.00	30	167	227	1.10	24	140	192	1.21	17	110	152	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Time [ms]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
0.00	-	-	-																																																			
0.20	81	383	515																																																			
0.40	69	329	443																																																			
0.60	56	275	371																																																			
0.80	43	221	299																																																			
1.00	30	167	227																																																			
1.10	24	140	192																																																			
1.21	17	110	152																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			

Model

TUHS25F24

Item

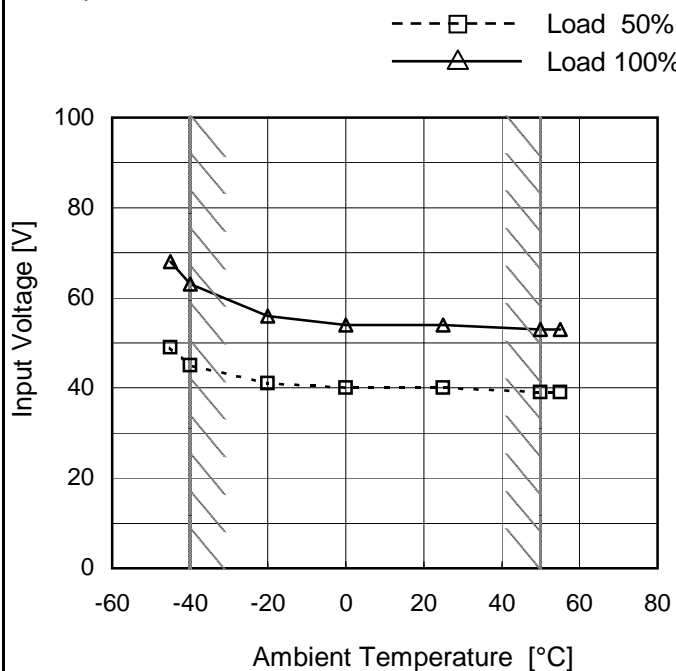
Minimum Input Voltage  
for Regulated Output Voltage

Object

+24V1.1A

Testing Circuitry Figure A

## 1. Graph



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

## 2. Values

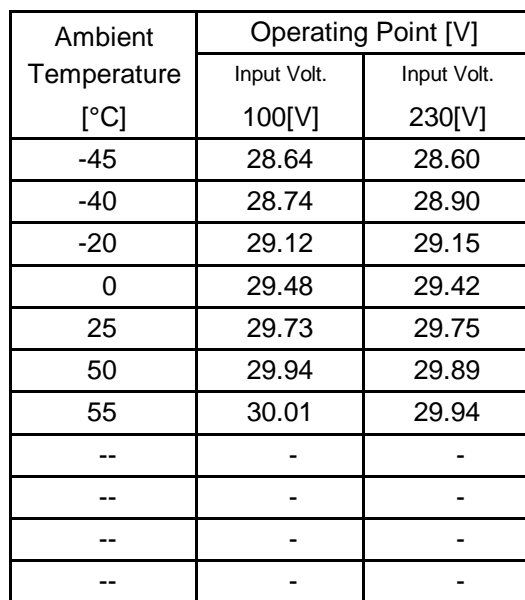
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-45	49	68
-40	45	63
-20	41	56
0	40	54
25	40	54
50	39	53
55	39	53
--	-	-
--	-	-
--	-	-
--	-	-

Model	TUHS25F24																																																				
Item	Overcurrent Protection	Temperature	25°C																																																		
Object	+24V1.1A	Testing Circuitry	Figure A																																																		
1.Graph		2.Values																																																			
<div><div><div></div><div>△ Input Volt. 100V</div></div><div><div></div><div>○ Input Volt. 230V</div></div></div> <p>Note: Slanted line shows the range of the rated load current.</p>		<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="2">Load Current [A]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>24</td><td>1.43</td><td>1.34</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Output Voltage [V]	Load Current [A]		Input Volt. 100[V]	Input Volt. 230[V]	24	1.43	1.34	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
Output Voltage [V]	Load Current [A]																																																				
	Input Volt. 100[V]	Input Volt. 230[V]																																																			
24	1.43	1.34																																																			
--	-	-																																																			
--	-	-																																																			
--	-	-																																																			
--	-	-																																																			
--	-	-																																																			
--	-	-																																																			
--	-	-																																																			
--	-	-																																																			
--	-	-																																																			
--	-	-																																																			
--	-	-																																																			
--	-	-																																																			
--	-	-																																																			
--	-	-																																																			



Testing Circuitry    Figure A

## 2.Values



- 23 -

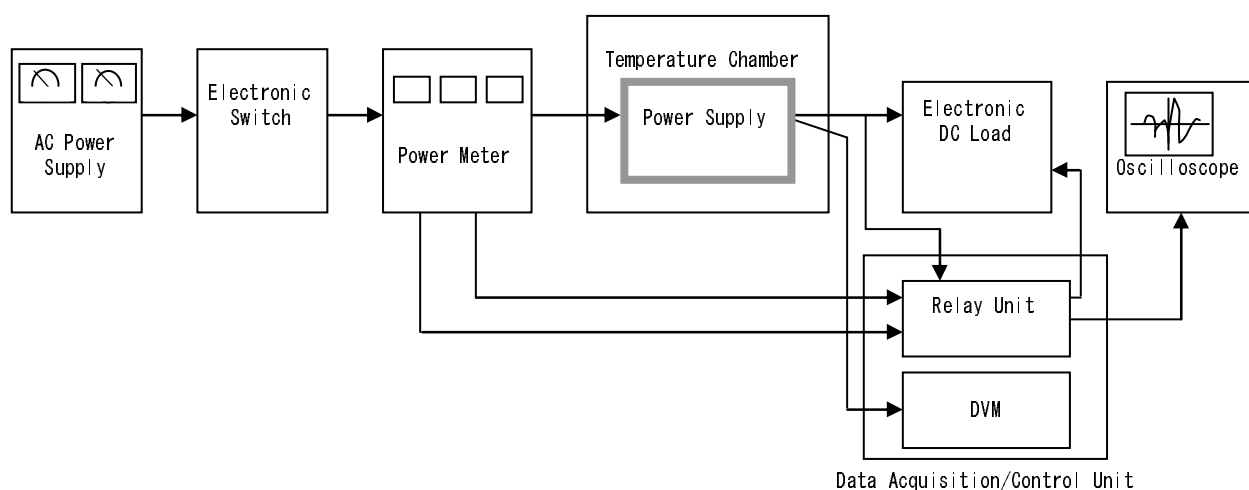


Figure A

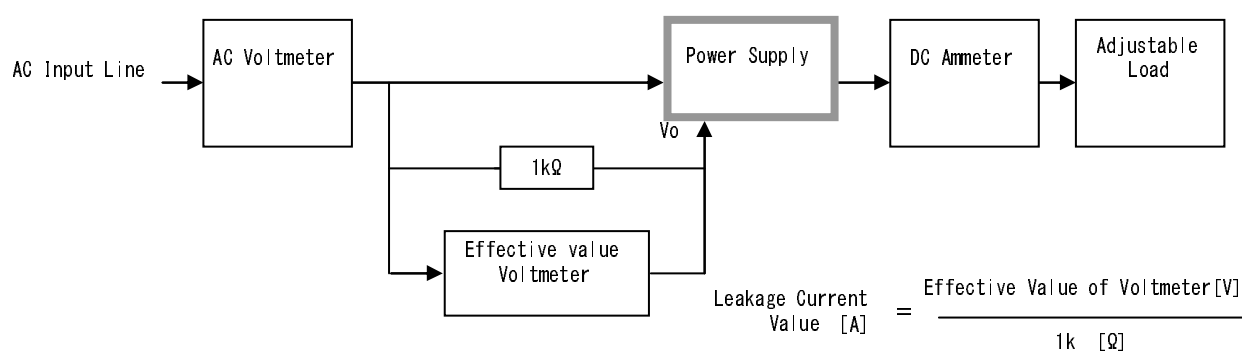


Figure B ( DEN-AN )

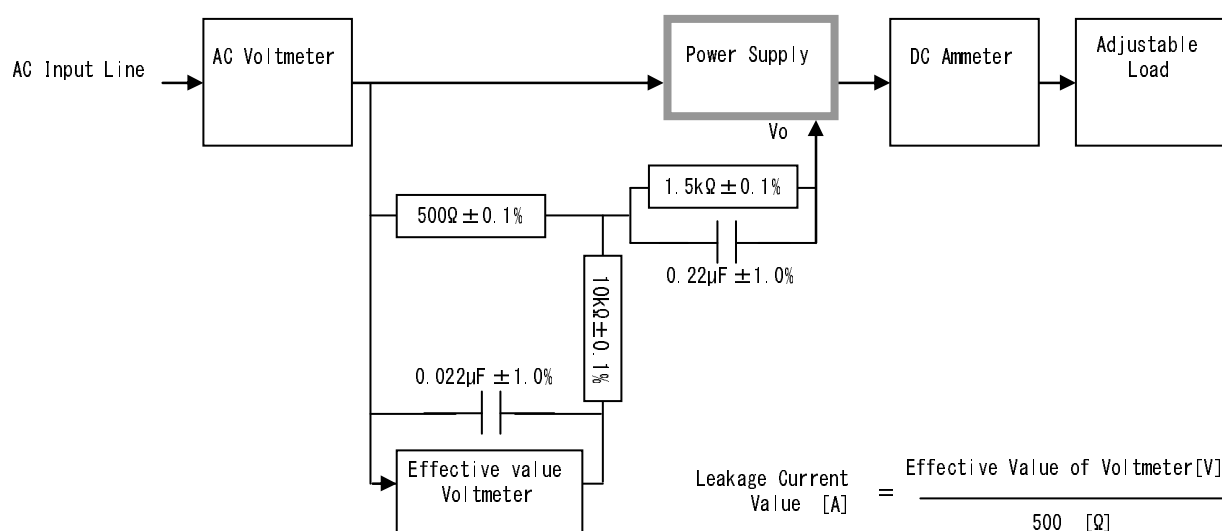


Figure B ( IEC60950-1 )

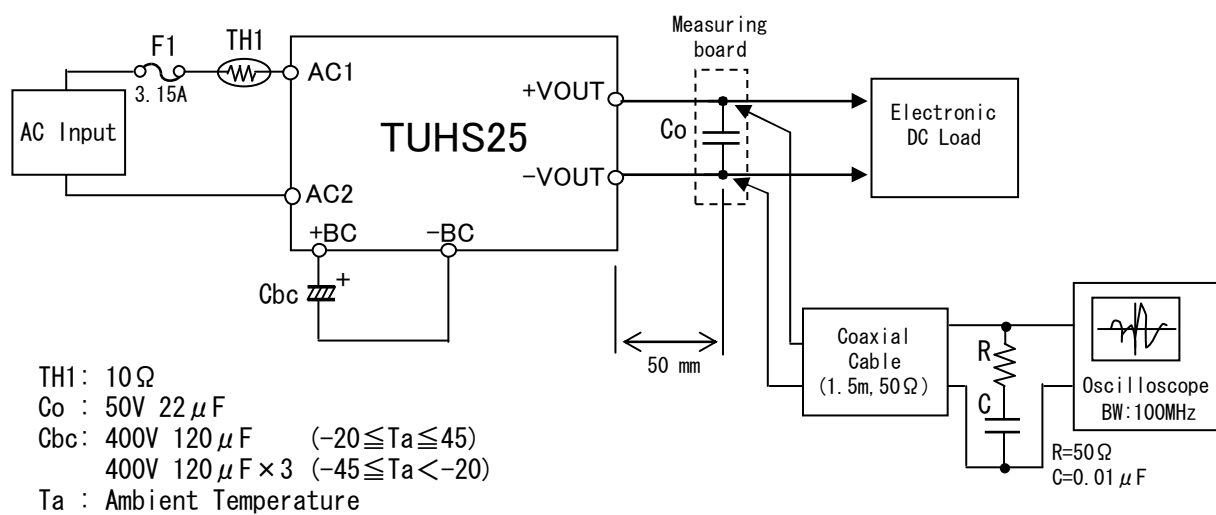


Figure C