



TEST DATA OF PAA50F-15
(200V INPUT)

Regulated DC Power Supply

Date : Sep. 1. 1996

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Design Manager

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Design Engineer

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| <p>Model PAA50F-15</p> | | <p>Temperature 25°C Testing Circuitry Figure A</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|-----------|-----------|------------------|------------------|-----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|-----|--------|--------|
| <p>Item Line Regulation 静的入力変動</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Object +15V 3.5A</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>1. Graph</p> <p>□ Load 50% △ Load 100%</p> <p>Note: Slanted line shows the range of the rated input voltage.</p> <p>(注)斜線は定格入力電圧範囲を示す。</p> | <p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th>Load 50%</th> <th>Load 100%</th> </tr> <tr> <th>Output Volt. [V]</th> <th>Output Volt. [V]</th> </tr> </thead> <tbody> <tr><td>150</td><td>15.195</td><td>15.191</td></tr> <tr><td>160</td><td>15.195</td><td>15.191</td></tr> <tr><td>170</td><td>15.195</td><td>15.191</td></tr> <tr><td>180</td><td>15.195</td><td>15.191</td></tr> <tr><td>200</td><td>15.195</td><td>15.191</td></tr> <tr><td>220</td><td>15.195</td><td>15.191</td></tr> <tr><td>240</td><td>15.195</td><td>15.191</td></tr> <tr><td>264</td><td>15.195</td><td>15.191</td></tr> <tr><td>280</td><td>15.194</td><td>15.191</td></tr> </tbody> </table> | Input Voltage [V] | Load 50% | Load 100% | Output Volt. [V] | Output Volt. [V] | 150 | 15.195 | 15.191 | 160 | 15.195 | 15.191 | 170 | 15.195 | 15.191 | 180 | 15.195 | 15.191 | 200 | 15.195 | 15.191 | 220 | 15.195 | 15.191 | 240 | 15.195 | 15.191 | 264 | 15.195 | 15.191 | 280 | 15.194 | 15.191 |
| Input Voltage [V] | Load 50% | | Load 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Output Volt. [V] | Output Volt. [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 150 | 15.195 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 160 | 15.195 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 170 | 15.195 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 180 | 15.195 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 200 | 15.195 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 220 | 15.195 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 240 | 15.195 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 264 | 15.195 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 280 | 15.194 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| Model | | PAA50F-15 | | Temperature | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------------------|--------------------------|--|-------------------|----------|-------------------|-------------------------|--------------------------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|
| Item | | Efficiency 効率 | | Testing Circuitry | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Graph | | | □ ----- Load 50% | 2. Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Efficiency [%]</p> <p>Input Voltage [V]</p> | | | <table border="1"> <thead> <tr> <th>Input Voltage [V]</th> <th>Load 50% Efficiency [%]</th> <th>Load 100% Efficiency [%]</th> </tr> </thead> <tbody> <tr><td>150</td><td>75.7</td><td>79.5</td></tr> <tr><td>160</td><td>75.0</td><td>79.4</td></tr> <tr><td>170</td><td>74.0</td><td>79.0</td></tr> <tr><td>180</td><td>73.0</td><td>78.7</td></tr> <tr><td>200</td><td>71.4</td><td>78.3</td></tr> <tr><td>220</td><td>70.3</td><td>77.5</td></tr> <tr><td>240</td><td>67.4</td><td>76.7</td></tr> <tr><td>264</td><td>65.5</td><td>75.4</td></tr> <tr><td>280</td><td>63.3</td><td>73.8</td></tr> </tbody> </table> | | | Input Voltage [V] | Load 50% Efficiency [%] | Load 100% Efficiency [%] | 150 | 75.7 | 79.5 | 160 | 75.0 | 79.4 | 170 | 74.0 | 79.0 | 180 | 73.0 | 78.7 | 200 | 71.4 | 78.3 | 220 | 70.3 | 77.5 | 240 | 67.4 | 76.7 | 264 | 65.5 | 75.4 | 280 | 63.3 | 73.8 |
| Input Voltage [V] | Load 50% Efficiency [%] | Load 100% Efficiency [%] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 150 | 75.7 | 79.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 160 | 75.0 | 79.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 170 | 74.0 | 79.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 180 | 73.0 | 78.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 200 | 71.4 | 78.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 220 | 70.3 | 77.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 240 | 67.4 | 76.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 264 | 65.5 | 75.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 280 | 63.3 | 73.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Note: Slanted line shows the range of the rated input voltage.</p> <p>(注) 斜線は定格入力電圧範囲を示す。</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| Model | | PAA50F-15 | | Temperature | | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------|-----------------|--|---|--|----------|--|-------------------|----------|-----------|--------------|--------------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|
| Item | | Power Factor 力率 | | Testing Circuitry | | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Graph | | | | 2. Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Legend: □ load 50% △ load 100%</p> | | | | <table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th>load 50%</th> <th>load 100%</th> </tr> <tr> <th>Power Factor</th> <th>Power Factor</th> </tr> </thead> <tbody> <tr><td>150</td><td>0.90</td><td>0.94</td></tr> <tr><td>160</td><td>0.89</td><td>0.93</td></tr> <tr><td>170</td><td>0.89</td><td>0.94</td></tr> <tr><td>180</td><td>0.88</td><td>0.94</td></tr> <tr><td>200</td><td>0.88</td><td>0.94</td></tr> <tr><td>220</td><td>0.86</td><td>0.92</td></tr> <tr><td>240</td><td>0.84</td><td>0.91</td></tr> <tr><td>264</td><td>0.81</td><td>0.90</td></tr> <tr><td>280</td><td>0.78</td><td>0.90</td></tr> </tbody> </table> | | | | Input Voltage [V] | load 50% | load 100% | Power Factor | Power Factor | 150 | 0.90 | 0.94 | 160 | 0.89 | 0.93 | 170 | 0.89 | 0.94 | 180 | 0.88 | 0.94 | 200 | 0.88 | 0.94 | 220 | 0.86 | 0.92 | 240 | 0.84 | 0.91 | 264 | 0.81 | 0.90 | 280 | 0.78 | 0.90 |
| Input Voltage [V] | load 50% | load 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Power Factor | Power Factor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 150 | 0.90 | 0.94 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 160 | 0.89 | 0.93 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 170 | 0.89 | 0.94 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 180 | 0.88 | 0.94 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 200 | 0.88 | 0.94 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 220 | 0.86 | 0.92 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 240 | 0.84 | 0.91 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 264 | 0.81 | 0.90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 280 | 0.78 | 0.90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Note: Slanted line shows the range of the rated input voltage.</p> <p>(注)斜線は定格入力電圧範囲を示す。</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| Model | | PAA50F-15 | | Temperature | | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------------|---------------------|--|---|--|----------|--|-------------------|----------|-----------|-------------------|-------------------|-----|-----|----|-----|-----|----|-----|-----|----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Item | | Hold-Up Time 出力保持時間 | | Testing Circuitry | | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | +15V 3.5A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Graph | | | | 2. Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | <table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th>Load 50%</th> <th>Load 100%</th> </tr> <tr> <th>Hold-Up Time [mS]</th> <th>Hold-Up Time [mS]</th> </tr> </thead> <tbody> <tr><td>150</td><td>162</td><td>59</td></tr> <tr><td>160</td><td>190</td><td>71</td></tr> <tr><td>170</td><td>220</td><td>81</td></tr> <tr><td>180</td><td>247</td><td>91</td></tr> <tr><td>200</td><td>295</td><td>111</td></tr> <tr><td>220</td><td>330</td><td>144</td></tr> <tr><td>240</td><td>336</td><td>167</td></tr> <tr><td>264</td><td>345</td><td>173</td></tr> <tr><td>280</td><td>344</td><td>175</td></tr> </tbody> </table> | | | | Input Voltage [V] | Load 50% | Load 100% | Hold-Up Time [mS] | Hold-Up Time [mS] | 150 | 162 | 59 | 160 | 190 | 71 | 170 | 220 | 81 | 180 | 247 | 91 | 200 | 295 | 111 | 220 | 330 | 144 | 240 | 336 | 167 | 264 | 345 | 173 | 280 | 344 | 175 |
| Input Voltage [V] | Load 50% | Load 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Hold-Up Time [mS] | Hold-Up Time [mS] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 150 | 162 | 59 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 160 | 190 | 71 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 170 | 220 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 180 | 247 | 91 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 200 | 295 | 111 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 220 | 330 | 144 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 240 | 336 | 167 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 264 | 345 | 173 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 280 | 344 | 175 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</p> <p>Note: Slanted line shows the range of the rated input voltage.</p> <p>出力保持時間とは、AC入力断から出力電圧が、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。</p> <p>(注)斜線は定格入力電圧範囲を示す。</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| Model | | PAA50F-15 | | Testing Circuitry Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------|--|--------------------|----------------------------|------------------|--------------------|--------------------|--------------------|-----------|--|--|-----|---|---|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|----|-----|-----|-----|----|----|-----|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | | Instantaneous Interruption Compensation 瞬時停電保障 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | +15V 3.5A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Graph | | <p> <input type="checkbox"/> △ ——— Input Volt. 170V <input type="checkbox"/> □ - - - - Input Volt. 200V <input type="checkbox"/> ○ - - - - Input Volt. 264V </p> | | 2. Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th>Input Volt. 170[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 264[V]</th> </tr> <tr> <th colspan="3">Time [mS]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>—</td><td>—</td><td>—</td></tr> <tr><td>0.6</td><td>573</td><td>692</td><td>825</td></tr> <tr><td>1.2</td><td>327</td><td>434</td><td>467</td></tr> <tr><td>1.8</td><td>215</td><td>273</td><td>305</td></tr> <tr><td>2.4</td><td>139</td><td>192</td><td>222</td></tr> <tr><td>3.0</td><td>93</td><td>139</td><td>180</td></tr> <tr><td>3.5</td><td>76</td><td>100</td><td>147</td></tr> <tr><td>3.9</td><td>60</td><td>91</td><td>138</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> </tbody> </table> | | | Load Current [A] | Input Volt. 170[V] | Input Volt. 200[V] | Input Volt. 264[V] | Time [mS] | | | 0.0 | — | — | — | 0.6 | 573 | 692 | 825 | 1.2 | 327 | 434 | 467 | 1.8 | 215 | 273 | 305 | 2.4 | 139 | 192 | 222 | 3.0 | 93 | 139 | 180 | 3.5 | 76 | 100 | 147 | 3.9 | 60 | 91 | 138 | — | — | — | — | — | — | — | — | — | — | — | — |
| Load Current [A] | Input Volt. 170[V] | Input Volt. 200[V] | Input Volt. 264[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time [mS] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.0 | — | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.6 | 573 | 692 | 825 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.2 | 327 | 434 | 467 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.8 | 215 | 273 | 305 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.4 | 139 | 192 | 222 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.0 | 93 | 139 | 180 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.5 | 76 | 100 | 147 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.9 | 60 | 91 | 138 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| — | — | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| — | — | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| — | — | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>This duration counts between Shut-off and on of input voltage automatically.</p> <p>Note: Slanted line shows the range of the rated load current.</p> <p>瞬時停電保障時間とは、出力電圧が定格値の95%になる時の瞬時停電時間をいう。</p> <p>(注)斜線は定格負荷電流範囲を示す。</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| Model | | PAA50F-15 | Temperature | | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------------|------------------------|---|--|----------|---------------------|-----------------------|-----------------------|-----------------------|---------------------|---------------------|---------------------|-----|--------|--------|--------|-----|--------|--------|--------|-----|--------|--------|--------|-----|--------|--------|--------|-----|--------|--------|--------|-----|--------|--------|--------|-----|--------|--------|--------|-----|--------|--------|--------|---|---|---|---|---|---|---|---|
| Item | | Load Regulation 静的負荷変動 | Testing Circuitry | | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | +15V 3.5A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Graph | | | 2. Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p> <input type="checkbox"/> △ Input Volt. 170V <input type="checkbox"/> □ Input Volt. 200V <input type="checkbox"/> ○ Input Volt. 264V </p> <p>Note: Slanted line shows the range of the rated load current.</p> <p>(注)斜線は定格負荷電流範囲を示す。</p> | | | <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th>Input Volt. 170[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 264[V]</th> </tr> <tr> <th>Output Volt. [V]</th> <th>Output Volt. [V]</th> <th>Output Volt. [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>15.198</td><td>15.198</td><td>15.197</td></tr> <tr><td>0.6</td><td>15.197</td><td>15.196</td><td>15.196</td></tr> <tr><td>1.2</td><td>15.196</td><td>15.195</td><td>15.194</td></tr> <tr><td>1.8</td><td>15.195</td><td>15.194</td><td>15.193</td></tr> <tr><td>2.4</td><td>15.194</td><td>15.193</td><td>15.193</td></tr> <tr><td>3.0</td><td>15.192</td><td>15.192</td><td>15.191</td></tr> <tr><td>3.5</td><td>15.191</td><td>15.191</td><td>15.191</td></tr> <tr><td>3.9</td><td>15.191</td><td>15.190</td><td>15.190</td></tr> <tr><td>—</td><td>—</td><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td><td>—</td><td>—</td></tr> </tbody> </table> | | | Load Current [A] | Input Volt. 170[V] | Input Volt. 200[V] | Input Volt. 264[V] | Output Volt. [V] | Output Volt. [V] | Output Volt. [V] | 0.0 | 15.198 | 15.198 | 15.197 | 0.6 | 15.197 | 15.196 | 15.196 | 1.2 | 15.196 | 15.195 | 15.194 | 1.8 | 15.195 | 15.194 | 15.193 | 2.4 | 15.194 | 15.193 | 15.193 | 3.0 | 15.192 | 15.192 | 15.191 | 3.5 | 15.191 | 15.191 | 15.191 | 3.9 | 15.191 | 15.190 | 15.190 | — | — | — | — | — | — | — | — |
| Load Current [A] | Input Volt. 170[V] | Input Volt. 200[V] | Input Volt. 264[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Output Volt. [V] | Output Volt. [V] | Output Volt. [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.0 | 15.198 | 15.198 | 15.197 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.6 | 15.197 | 15.196 | 15.196 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.2 | 15.196 | 15.195 | 15.194 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.8 | 15.195 | 15.194 | 15.193 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.4 | 15.194 | 15.193 | 15.193 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.0 | 15.192 | 15.192 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.5 | 15.191 | 15.191 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.9 | 15.191 | 15.190 | 15.190 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| — | — | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| — | — | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

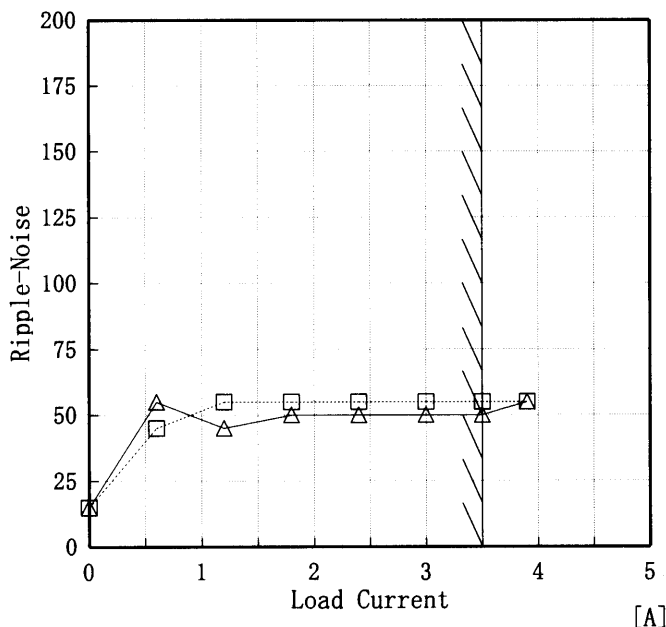


| Model | | PAA50F-15 | | Temperature | | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------------------|--|--|--|--|----------|--|---------------------|------------------------|------------------------|-----------------------------|-----------------------------|-----|---|----|-----|----|----|-----|----|----|-----|----|----|-----|----|----|-----|----|----|-----|----|----|-----|----|----|---|---|---|---|---|---|---|---|---|
| Item | | Ripple Voltage (by Load Current) リップル電圧(負荷電流特性) | | Testing Circuitry | | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | +15V 3.5A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Graph | | | | 2. Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| [mV] | |□..... Input Volt. 170V ——△—— Input Volt. 264V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th>Input Volt. 170 [V]</th> <th>Input Volt. 264 [V]</th> </tr> <tr> <th>Ripple Output Volt. [mV]</th> <th>Ripple Output Volt. [mV]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>5</td><td>10</td></tr> <tr><td>0.6</td><td>40</td><td>50</td></tr> <tr><td>1.2</td><td>50</td><td>40</td></tr> <tr><td>1.8</td><td>50</td><td>45</td></tr> <tr><td>2.4</td><td>50</td><td>45</td></tr> <tr><td>3.0</td><td>50</td><td>45</td></tr> <tr><td>3.5</td><td>50</td><td>45</td></tr> <tr><td>3.9</td><td>50</td><td>50</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> | | | | Load Current [A] | Input Volt. 170 [V] | Input Volt. 264 [V] | Ripple Output Volt. [mV] | Ripple Output Volt. [mV] | 0.0 | 5 | 10 | 0.6 | 40 | 50 | 1.2 | 50 | 40 | 1.8 | 50 | 45 | 2.4 | 50 | 45 | 3.0 | 50 | 45 | 3.5 | 50 | 45 | 3.9 | 50 | 50 | — | — | — | — | — | — | — | — | — |
| Load Current [A] | Input Volt. 170 [V] | Input Volt. 264 [V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ripple Output Volt. [mV] | Ripple Output Volt. [mV] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.0 | 5 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.6 | 40 | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.2 | 50 | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.8 | 50 | 45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.4 | 50 | 45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.0 | 50 | 45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.5 | 50 | 45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.9 | 50 | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| — | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| — | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| — | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 スイッチング周期 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fig. Complex Ripple Wave Form 図 リップル波形詳細図 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| | | | |
|--------|----------------------|-------------------|----------|
| Model | PAA50F-15 | Temperature | 25°C |
| Item | Ripple-Noise リップルノイズ | Testing Circuitry | Figure A |
| Object | +1.5V 3.5A | | |

1. Graph
 [mV]
 □ Input Volt. 170V
 △ Input Volt. 264V



2. Values

| Load current [A] | Input Volt. 170 [V] | Input Volt. 264 [V] |
|------------------|---------------------|---------------------|
| | Ripple-Noise [mV] | Ripple-Noise [mV] |
| 0.0 | 15 | 15 |
| 0.6 | 45 | 55 |
| 1.2 | 55 | 45 |
| 1.8 | 55 | 50 |
| 2.4 | 55 | 50 |
| 3.0 | 55 | 50 |
| 3.5 | 55 | 50 |
| 3.9 | 55 | 55 |
| — | — | — |
| — | — | — |
| — | — | — |

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
 スイッチング周期

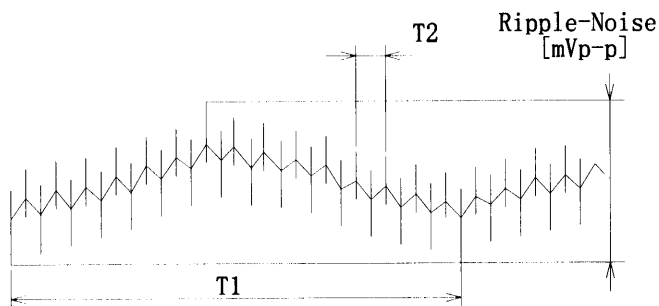
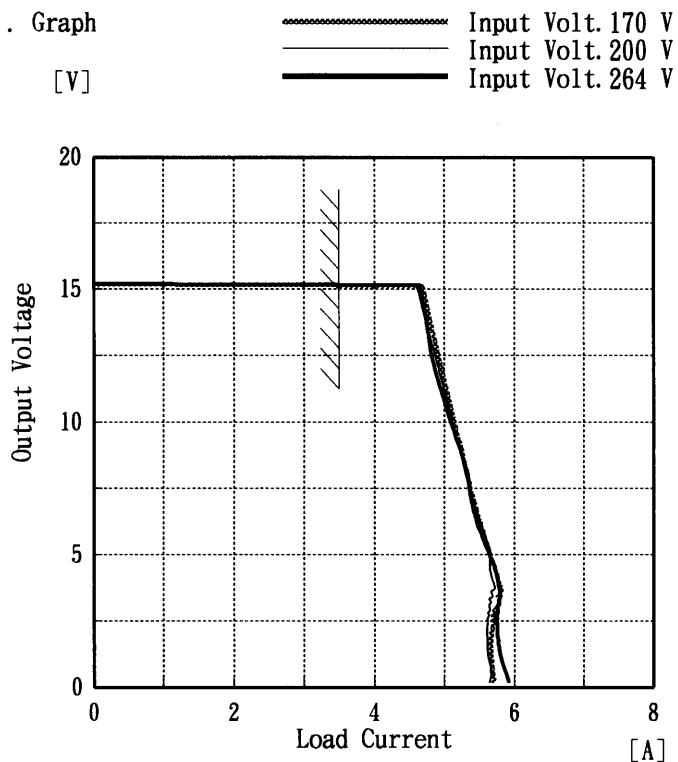


Fig. Complex Ripple Wave Form
 図 リップル波形詳細図



| | | | |
|--------|---------------------------------|-------------------|----------|
| Model | PAA50F-15 | Temperature | 25°C |
| Item | Overcurrent Protection 過電流保護 | Testing Circuitry | Figure A |
| Object | +15V 3.5A | | |

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

| Output Voltage [V] | Input Volt. 170[V] | Input Volt. 200[V] | Input Volt. 264[V] |
|--------------------|--------------------|--------------------|--------------------|
| | Load Current [A] | Load Current [A] | Load Current [A] |
| 15.00 | 4.69 | 4.61 | 4.66 |
| 14.25 | 4.76 | 4.69 | 4.72 |
| 13.50 | 4.82 | 4.76 | 4.76 |
| 12.00 | 4.95 | 4.91 | 4.85 |
| 10.50 | 5.09 | 5.06 | 5.03 |
| 9.00 | 5.24 | 5.21 | 5.22 |
| 7.50 | 5.37 | 5.34 | 5.36 |
| 6.00 | 5.53 | 5.53 | 5.49 |
| 4.50 | 5.72 | 5.65 | 5.72 |
| 3.00 | 5.75 | 5.64 | 5.76 |
| 1.50 | 5.66 | 5.61 | 5.78 |
| 0.00 | 5.70 | 5.64 | 5.92 |

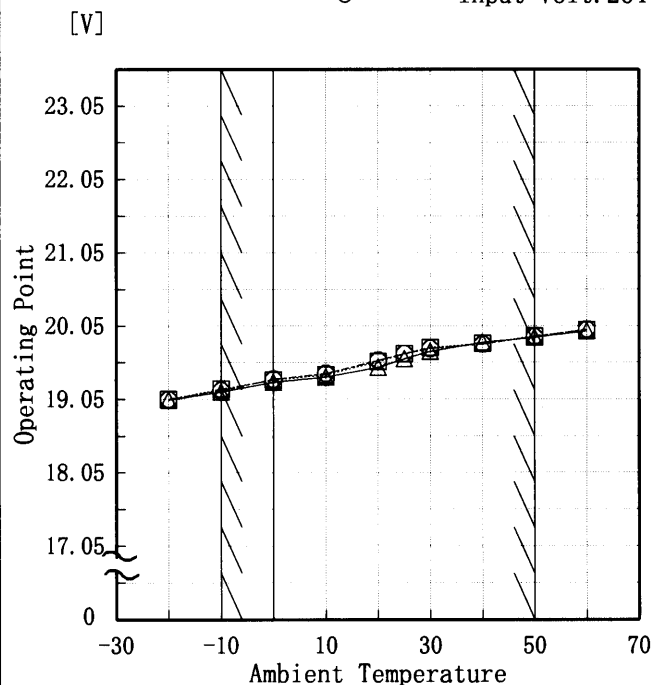


| | |
|--------|---------------------------------|
| Model | PAA50F-15 |
| Item | Overvoltage Protection 過電圧保護 |
| Object | +15V 3.5A |

Testing Circuitry Figure A

1. Graph

\triangle Input Volt. 170 V
 \square Input Volt. 200 V
 \circ Input Volt. 264 V



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

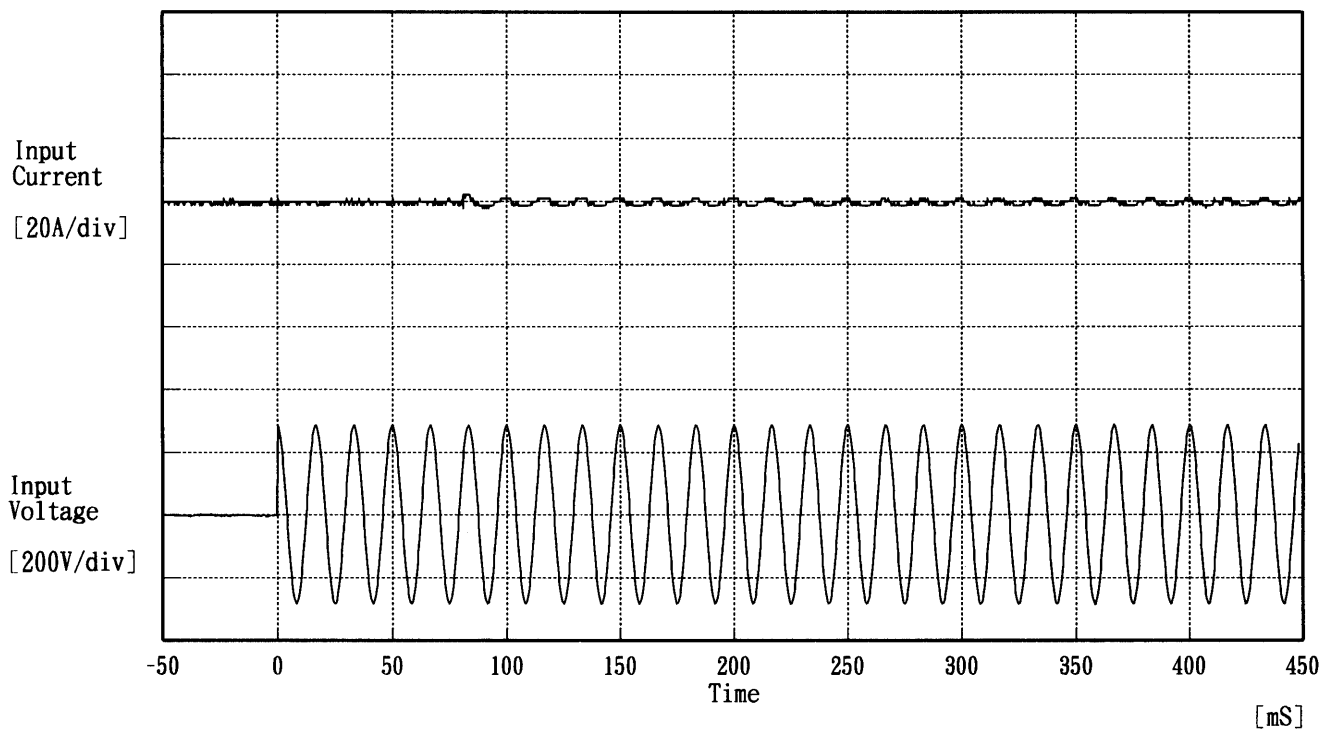
(注) 斜線は定格周囲温度範囲を示す。

2. Values

| Ambient Temp. [°C] | Input Volt. 170[V] | Input Volt. 200[V] | Input Volt. 264[V] |
|-----------------------|-----------------------|-----------------------|-----------------------|
| | Operating Point [V] | | |
| -20 | 19.04 | 19.05 | 19.05 |
| -10 | 19.15 | 19.19 | 19.17 |
| 0 | 19.28 | 19.31 | 19.32 |
| 10 | 19.35 | 19.38 | 19.40 |
| 20 | 19.48 | 19.56 | 19.58 |
| 25 | 19.60 | 19.67 | 19.67 |
| 30 | 19.70 | 19.75 | 19.74 |
| 40 | 19.82 | 19.81 | 19.80 |
| 50 | 19.89 | 19.91 | 19.90 |
| 60 | 19.98 | 19.99 | 20.00 |
| — | — | — | — |

COSEL

| | | | |
|--------|---------------------|-------------------|----------|
| Model | PAA50F-15 | Temperature | 25°C |
| Item | Inrush Current 突入電流 | Testing Circuitry | Figure A |
| Object | _____ | | |



Input Voltage 200 V

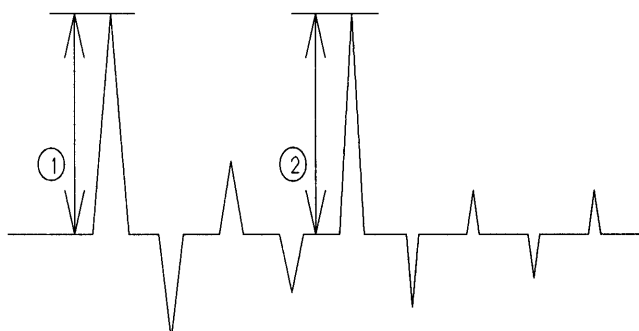
Frequency 60 Hz

Load 100 %

Inrush Current

① 2.22 [A]

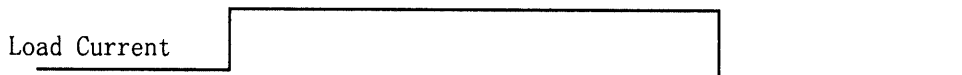
② 2.26 [A]



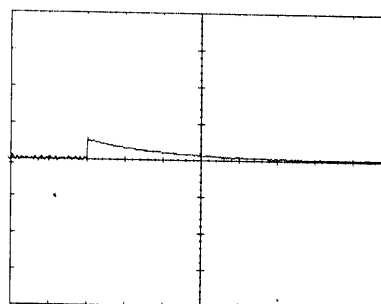
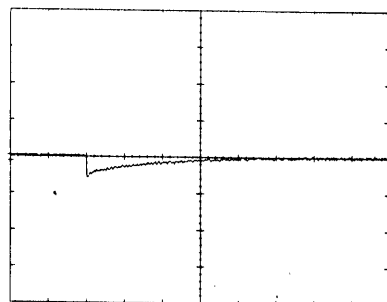


| | | | | | |
|--------|--|---------------------------------|-------------------|--|----------|
| Model | | PAA50F-15 | Temperature | | 25°C |
| Item | | Dynamic Load Responce 動的負荷変動 | Testing Circuitry | | Figure A |
| Object | | + 1.5 V 3.5 A | | | |

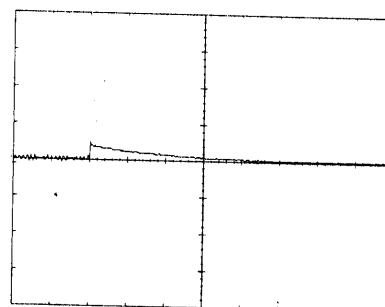
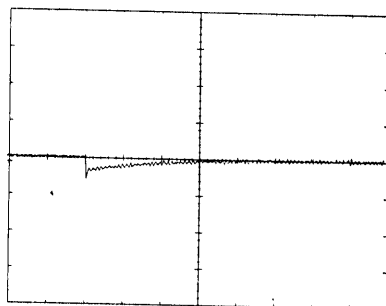
Input Volt. 200 V
Cycle 200 mS



Min. Load ↔
Load 100 %



Min. Load ↔
Load 50 %



100 mV/div

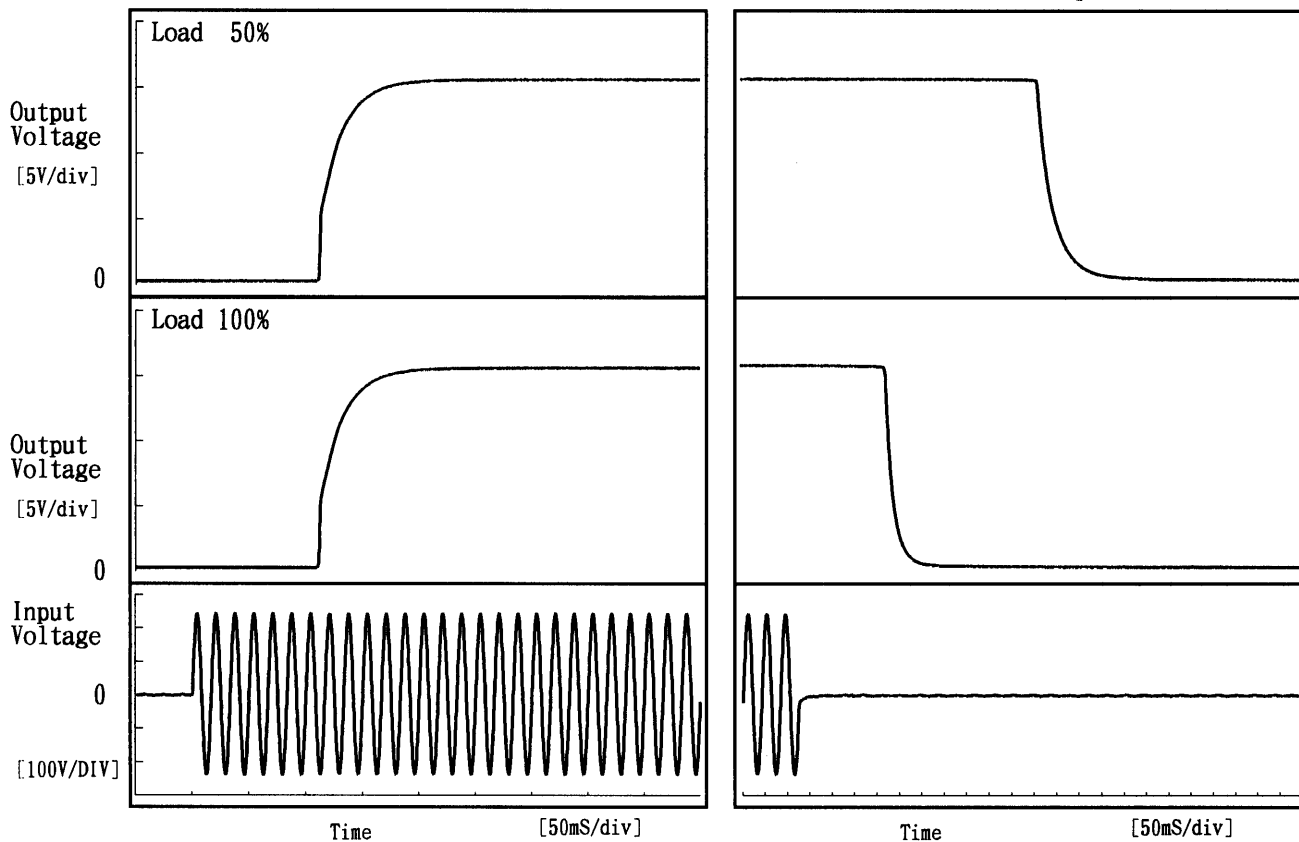
10 mS/div



| | | | |
|--------|------------------------------|-------------------|----------|
| Model | PAA50F-15 | Temperature | 25°C |
| Item | Rise and Fall Time 立上り、立下り時間 | Testing Circuitry | Figure A |
| Object | +15V3.5A | | |

1. Graph

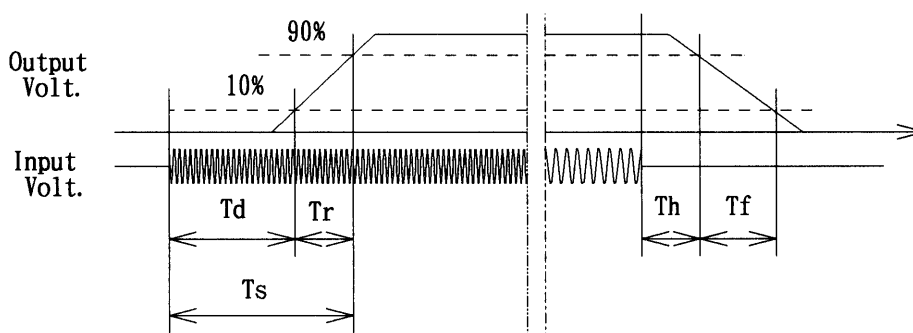
Input Volt. 170 V



2. Values

[mS]

| Load \ Time | T d | T r | T s | T h | T f |
|-------------|-------|------|-------|-------|------|
| 50 % | 111.5 | 36.0 | 147.5 | 214.5 | 32.8 |
| 100 % | 111.5 | 36.3 | 147.8 | 79.3 | 16.5 |

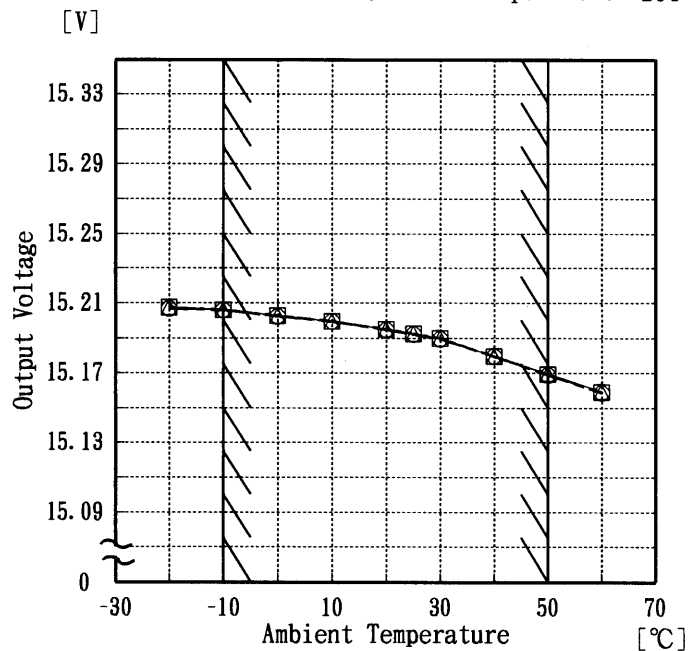




| | | |
|--------|-------------------------------------|----------------------------|
| Model | PAA50F-15 | Testing Circuitry Figure A |
| Item | Ambient Temperature Drift 周囲温度変動 | |
| Object | +15V3.5A | |

1. Graph

- △— Input Volt. 170V
- Input Volt. 200V
- Input Volt. 264V



Load 100%

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

| Temperature [°C] | Input Volt. 170[V] | Input Volt. 200[V] | Input Volt. 264[V] |
|------------------|--------------------|--------------------|--------------------|
| | Output Volt. [V] | Output Volt. [V] | Output Volt. [V] |
| -20 | 15.207 | 15.207 | 15.207 |
| -10 | 15.206 | 15.206 | 15.206 |
| 0 | 15.203 | 15.203 | 15.202 |
| 10 | 15.199 | 15.199 | 15.199 |
| 20 | 15.195 | 15.195 | 15.195 |
| 25 | 15.192 | 15.192 | 15.192 |
| 30 | 15.190 | 15.190 | 15.190 |
| 40 | 15.180 | 15.180 | 15.179 |
| 50 | 15.170 | 15.169 | 15.169 |
| 60 | 15.159 | 15.159 | 15.159 |
| — | — | — | — |



| Model | | PAA50F-15 | | Testing Circuitry | | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------------------------|--|--|--|--|----------|--|--------------------|--------------------------------------|---------------------------------------|-----|-----|-----|-----|-----|-----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|
| Item | | Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | +15V 3.5A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Graph | | | | 2. Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Legend: □ Load 50%, △ Load 100%</p> <p>Input Volt. 200 V</p> <p>Note: Slanted line shows the range of the rated ambient temperature.</p> <p>(注) 斜線は定格周囲温度範囲を示す。</p> | | | | <table border="1"> <thead> <tr> <th>Ambient Temp. [°C]</th> <th>Load 50% Ripple Output Volt. [mV]</th> <th>Load 100% Ripple Output Volt. [mV]</th> </tr> </thead> <tbody> <tr><td>-20</td><td>120</td><td>115</td></tr> <tr><td>-10</td><td>120</td><td>105</td></tr> <tr><td>0</td><td>80</td><td>85</td></tr> <tr><td>10</td><td>70</td><td>70</td></tr> <tr><td>20</td><td>60</td><td>60</td></tr> <tr><td>25</td><td>50</td><td>55</td></tr> <tr><td>30</td><td>50</td><td>55</td></tr> <tr><td>40</td><td>50</td><td>55</td></tr> <tr><td>50</td><td>50</td><td>50</td></tr> <tr><td>60</td><td>50</td><td>45</td></tr> <tr><td>—</td><td>—</td><td>—</td></tr> </tbody> </table> | | | | Ambient Temp. [°C] | Load 50% Ripple Output Volt. [mV] | Load 100% Ripple Output Volt. [mV] | -20 | 120 | 115 | -10 | 120 | 105 | 0 | 80 | 85 | 10 | 70 | 70 | 20 | 60 | 60 | 25 | 50 | 55 | 30 | 50 | 55 | 40 | 50 | 55 | 50 | 50 | 50 | 60 | 50 | 45 | — | — | — |
| Ambient Temp. [°C] | Load 50% Ripple Output Volt. [mV] | Load 100% Ripple Output Volt. [mV] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -20 | 120 | 115 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -10 | 120 | 105 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 80 | 85 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 70 | 70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | 60 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 50 | 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | 50 | 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 50 | 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 50 | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | 50 | 45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| — | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| COSEL | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------------------|--|----------------------|--------------------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|
| Model | PAA50F-15 | Temperature 25 °C Testing Circuitry Figure A | | | | | | | | | | | | | | | | | | | | | | |
| Item | Time Lapse Drift 経時ドリフト | | | | | | | | | | | | | | | | | | | | | | | |
| Object | +15V3.5A | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Graph | | 2. Values | | | | | | | | | | | | | | | | | | | | | | |
| <p>[V]</p> <p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 200V Load 100%</p> | | <table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>15.202</td></tr> <tr><td>0.5</td><td>15.191</td></tr> <tr><td>1.0</td><td>15.191</td></tr> <tr><td>2.0</td><td>15.191</td></tr> <tr><td>3.0</td><td>15.191</td></tr> <tr><td>4.0</td><td>15.191</td></tr> <tr><td>5.0</td><td>15.191</td></tr> <tr><td>6.0</td><td>15.191</td></tr> <tr><td>7.0</td><td>15.191</td></tr> <tr><td>8.0</td><td>15.191</td></tr> </tbody> </table> | Time since start [H] | Output Voltage [V] | 0.0 | 15.202 | 0.5 | 15.191 | 1.0 | 15.191 | 2.0 | 15.191 | 3.0 | 15.191 | 4.0 | 15.191 | 5.0 | 15.191 | 6.0 | 15.191 | 7.0 | 15.191 | 8.0 | 15.191 |
| Time since start [H] | Output Voltage [V] | | | | | | | | | | | | | | | | | | | | | | | |
| 0.0 | 15.202 | | | | | | | | | | | | | | | | | | | | | | | |
| 0.5 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | |
| 1.0 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | |
| 2.0 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | |
| 3.0 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | |
| 4.0 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | |
| 5.0 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | |
| 6.0 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | |
| 7.0 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | |
| 8.0 | 15.191 | | | | | | | | | | | | | | | | | | | | | | | |



| | | | |
|--------|--|-------------------------------|----------------------------|
| Model | | PAA50F-15 | Testing Circuitry Figure A |
| Item | | Output Voltage Accuracy 定電圧精度 | |
| Object | | +15V 3.5A | |

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 : -10~50 °C

Input Voltage : 170~264 V

Load Current : 0.0~3.5 A

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

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

定電圧精度

周囲温度、入力電圧、負荷を下記仕様内で、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 -10~50 °C

入力電圧 170~264 V

負荷電流 0.0~3.5 A

* 定電圧精度(変動値) = $\pm(\text{出力電圧の最高値} - \text{出力電圧の最低値}) / 2$

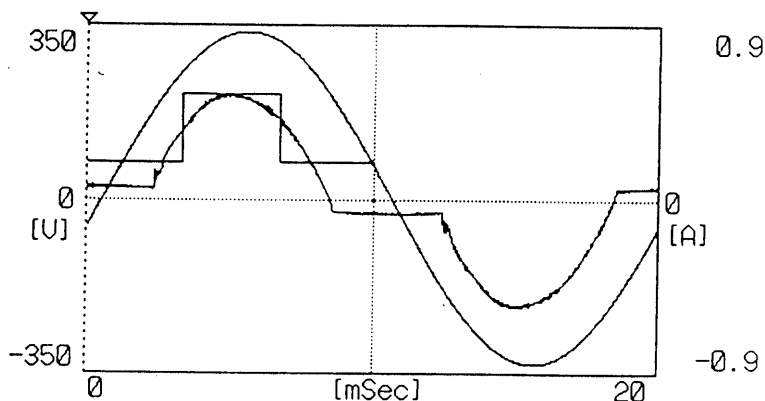
* 定電圧精度(変動率) = $\frac{\text{変動値}}{\text{定格出力電圧}} \times 100$

| Item | Temperature [°C] | Input Voltage [V] | Output Current [A] | Output Voltage [V] | Output Voltage Accuracy [mV] | Output Voltage Accuracy(Ration) [%] |
|-----------------|------------------|-------------------|--------------------|--------------------|------------------------------|-------------------------------------|
| Maximum Voltage | -10 | 170 | 0.0 | 15.211 | ±22 | ±0.1 |
| Minimum Voltage | 50 | 264 | 3.5 | 15.167 | | |



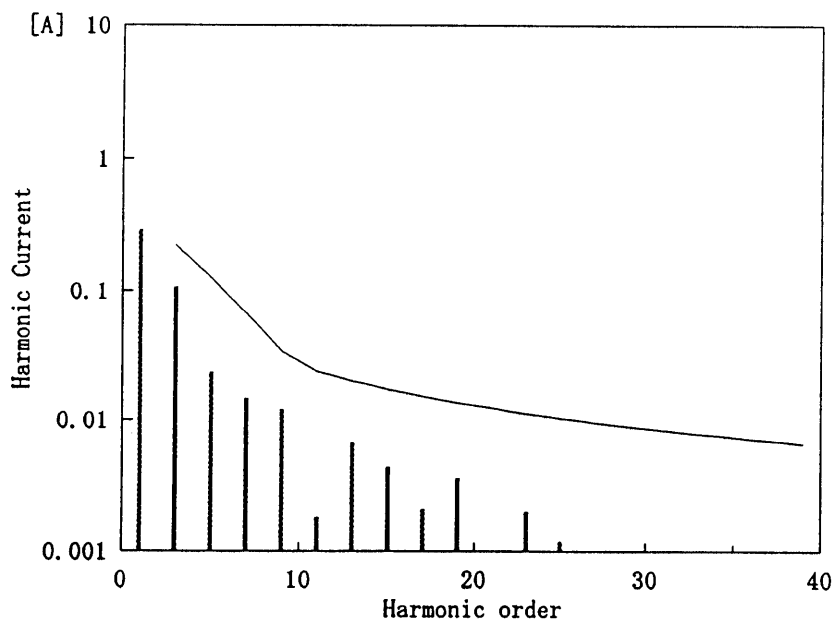
| | | | |
|--------|---------------------------|-------------------|----------|
| Model | PAA50F-15 | Temperature | 25°C |
| Item | Harmonic Current 高調波電流 | Testing Circuitry | Figure E |
| Object | | | |

1. Input Current Waveform



| Conditions | Values |
|---------------------|--------|
| Input Voltage [V] | 232.1 |
| Input Current [A] | 0.32 |
| Active Power [W] | 67.4 |
| Apparent Power [VA] | 73.6 |
| Frequency [Hz] | 50 |
| Power Factor | 0.916 |
| Output Power [W] | 52.5 |

2. Harmonic Current



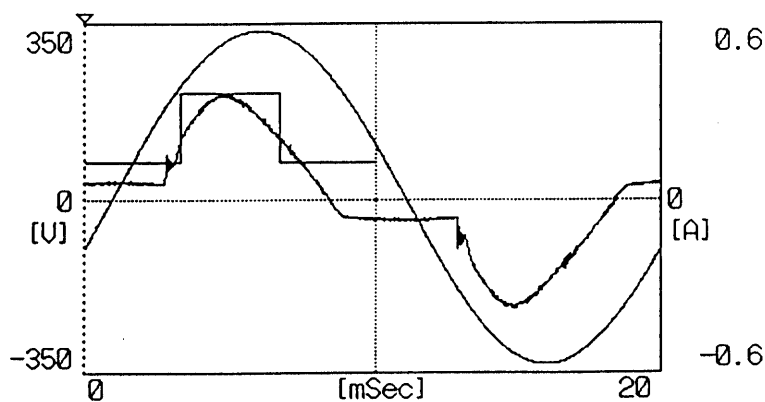
— Harmonic Current
 高調波電流
 - - - Limits for Class D equipment
 クラスDの機器に対する限度値

| Harmonics order 高調波次数 | Limits 限度値 [A] | Values 測定値 [A] |
|--------------------------|----------------------|----------------------|
| 1 | — | 0.299 |
| 2 | — | 0.000 |
| 3 | 0.227 | 0.108 |
| 4 | — | 0.000 |
| 5 | 0.127 | 0.023 |
| 6 | — | 0.000 |
| 7 | 0.067 | 0.015 |
| 8 | — | 0.000 |
| 9 | 0.033 | 0.012 |
| 10 | — | 0.000 |
| 11 | 0.023 | 0.002 |
| 12 | — | 0.000 |
| 13 | 0.020 | 0.007 |
| 14 | — | 0.000 |
| 15 | 0.017 | 0.004 |
| 16 | — | 0.000 |
| 17 | 0.015 | 0.002 |
| 18 | — | 0.000 |
| 19 | 0.014 | 0.004 |
| 20 | — | 0.000 |
| 21 | 0.012 | 0.001 |
| 22 | — | 0.000 |
| 23 | 0.011 | 0.002 |
| 24 | — | 0.000 |
| 25 | 0.010 | 0.001 |
| 26 | — | 0.000 |
| 27 | 0.010 | 0.001 |
| 28 | — | 0.000 |
| 29 | 0.009 | 0.001 |
| 30 | — | 0.000 |
| 31 | 0.008 | 0.001 |
| 32 | — | 0.000 |
| 33 | 0.008 | 0.000 |
| 34 | — | 0.000 |
| 35 | 0.007 | 0.001 |
| 36 | — | 0.000 |
| 37 | 0.007 | 0.001 |
| 38 | — | 0.000 |
| 39 | 0.007 | 0.000 |
| 40 | — | 0.000 |

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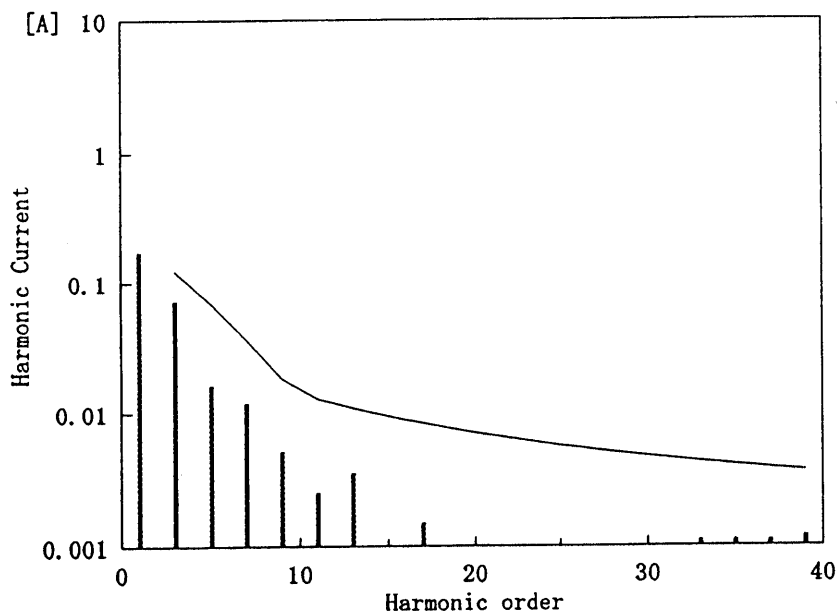
| | | | |
|--------|---------------------------|-------------------|----------|
| Model | PAA50F-15 | Temperature | 25°C |
| Item | Harmonic Current 高調波電流 | Testing Circuitry | Figure E |
| Object | | | |

1. Input Current Waveform



| Conditions | Values |
|---------------------|--------|
| Input Voltage [V] | 232.1 |
| Input Current [A] | 0.19 |
| Active Power [W] | 36.9 |
| Apparent Power [VA] | 44.1 |
| Frequency [Hz] | 50 |
| Power Factor | 0.837 |
| Output Power [W] | 26.25 |

2. Harmonic Current



— Harmonic Current
 高調波電流
 - - - Limits for Class D equipment
 クラスD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 | — | 0.176 |
| 2 | — | 0.000 |
| 3 | 0.124 | 0.073 |
| 4 | — | 0.000 |
| 5 | 0.069 | 0.016 |
| 6 | — | 0.000 |
| 7 | 0.037 | 0.012 |
| 8 | — | 0.000 |
| 9 | 0.018 | 0.005 |
| 10 | — | 0.000 |
| 11 | 0.013 | 0.003 |
| 12 | — | 0.000 |
| 13 | 0.011 | 0.004 |
| 14 | — | 0.000 |
| 15 | 0.009 | 0.001 |
| 16 | — | 0.000 |
| 17 | 0.008 | 0.002 |
| 18 | — | 0.000 |
| 19 | 0.007 | 0.001 |
| 20 | — | 0.000 |
| 21 | 0.007 | 0.000 |
| 22 | — | 0.000 |
| 23 | 0.006 | 0.000 |
| 24 | — | 0.000 |
| 25 | 0.006 | 0.001 |
| 26 | — | 0.000 |
| 27 | 0.005 | 0.000 |
| 28 | — | 0.000 |
| 29 | 0.005 | 0.001 |
| 30 | — | 0.000 |
| 31 | 0.005 | 0.001 |
| 32 | — | 0.000 |
| 33 | 0.004 | 0.001 |
| 34 | — | 0.000 |
| 35 | 0.004 | 0.001 |
| 36 | — | 0.000 |
| 37 | 0.004 | 0.001 |
| 38 | — | 0.000 |
| 39 | 0.004 | 0.001 |
| 40 | — | 0.000 |

COSEL

| | | |
|--------|-------------------|----------------------------|
| Model | PAA50F-15 | Testing Circuitry Figure A |
| Item | Condensation 結露特性 | |
| Object | +15V 3.5A | |

1. Condensation test

Testing procedure is as follows.

- ① Keeping and cooling the unit in a tank at -10°C 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°C and the humidity is 40%RH.
- ③ Testing electrical characteristics (Output Voltage, Ripple Voltage, Ripple noise) of the unit to confirm there be no fault.
- ④ Repeating ①, ② and ③ three times.

1. 結露特性試験

入力を切った状態で、恒温槽で -10°C 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°C 、湿度40%RHの状態におき結露させ、その電気的特性（出力電圧、リップル、リップルノイズ）の測定を3度行い、異常のないことを確認する。

2. Values

| | Times | Output Voltage [V] | Ripple Voltage [mV] | Ripple Noise [mV] |
|------------------|-------|-----------------------|------------------------|----------------------|
| Load 50 % | 1 | 15.195 | 50 | 55 |
| | 2 | 15.195 | 50 | 55 |
| | 3 | 15.195 | 50 | 55 |
| Load 100 % | 1 | 15.191 | 50 | 55 |
| | 2 | 15.191 | 50 | 55 |
| | 3 | 15.191 | 50 | 55 |

Input Volt. 200 V



| | | | |
|--------|--|----------------------|----------------------------|
| Model | | PAA50F-15 | Testing Circuitry Figure A |
| Item | | Leakage Current 漏洩電流 | |
| Object | | _____ | |

1. Results

| Standards | Leakage Current [mA] | | |
|-------------|-----------------------|------------------------|-----------------------|
| | Input Volt. 85 [V] | Input Volt. 100 [V] | Input Volt. 132[V] |
| (A) DENTORI | — | — | — |
| (B) UL | — | — | — |
| (C) CSA | — | — | — |

| Standards | Leakage Current [mA] | | |
|-----------|------------------------|------------------------|------------------------|
| | Input Volt. 170 [V] | Input Volt. 220 [V] | Input Volt. 264 [V] |
| (D) VDE | 0.28 | 0.38 | 0.44 |

2. Condition

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

交流入力 of 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。

Load 100 %

- (A) Input Resistance :1KΩ
- (B) Input Resistance :1.5KΩ
Input Capacitance :0.15μF
- (C) Input Resistance :1.5KΩ
Input Capacitance :0.15μF
- (D) Input Resistance :2KΩ
Input Capacitance :0.1μF



| | | | |
|--------|--|--------------------------------|----------------------------|
| Model | | PAA50F-15 | Testing Circuitry Figure C |
| Item | | Line Noise Tolerance 入力雑音耐量 | |
| Object | | +1.5V 3.5A | |

1. Results

| Pulse Width [n S] | MODE | Operating Point of Overvoltage Protection [V] 過電圧保護動作値 | DC-like Regulation of Output Voltage 出力電圧の直流的変動 |
|----------------------|--------|---|--|
| 50 | COMMON | 19.68 | no regulation |
| | NORMAL | 19.68 | no regulation |
| 1000 | COMMON | 19.69 | no regulation |
| | NORMAL | 19.69 | no regulation |

Conditions

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



| | | | |
|--------|--|------------------------------|----------------------------|
| Model | | PAA50F-15 | Testing Circuitry Figure D |
| Item | | Conducted Emission 雑音端子電圧 | |
| Object | | _____ | |

1. Graph

Remarks

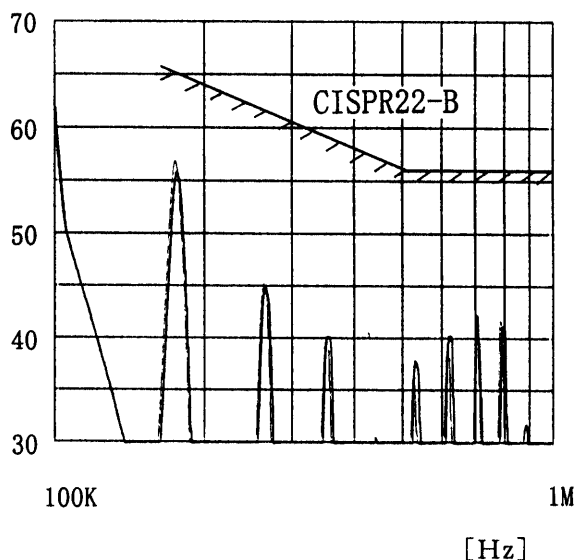
Input Volt. 230 V
Load 100 %

Note: Slanted line shows the range of Tolerance.

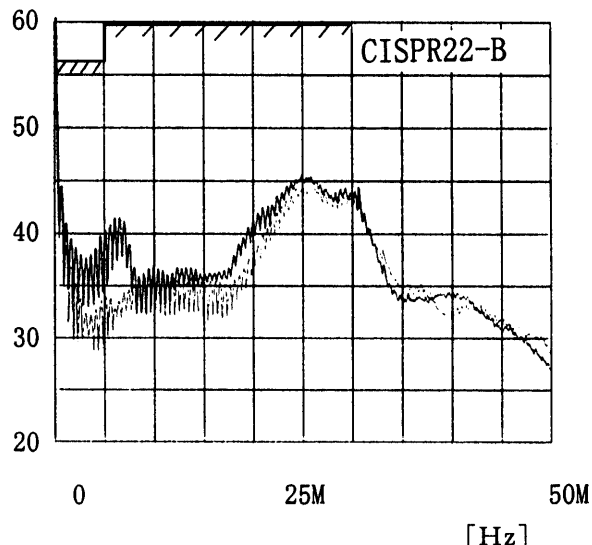
(注)斜線は許容値を示す。

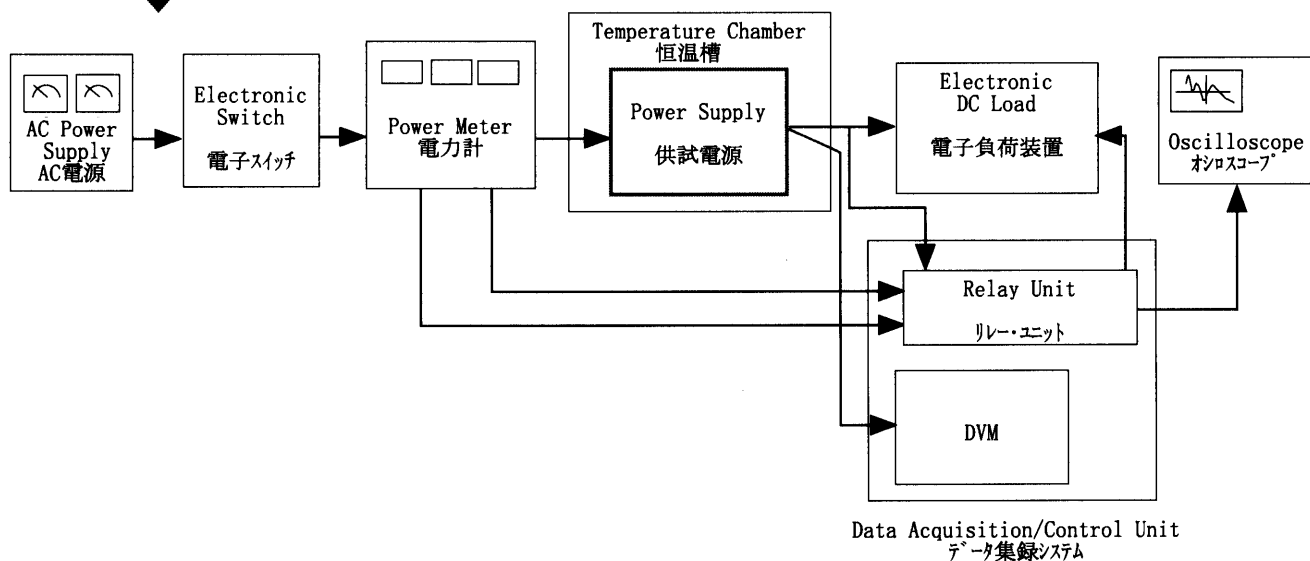
| NO | Standards | Standards Complied | Frequency [MHz] | Tolerance [dB μ V] |
|----|------------------|--------------------|-----------------|------------------------|
| 1 | FCC class A | | 0.45~1.6 | 60 |
| | | | 1.6~30 | 69.5 |
| 2 | FCC class B | | 0.45~30 | 48 |
| 3 | VCCI -1 | | 0.15~0.5 | 79 |
| | | | 0.5~30 | 73 |
| 4 | VCCI -2 | | 0.15~0.5 | 66-56 |
| | | | 0.5~5 | 56 |
| | | | 5~30 | 60 |
| 5 | VDE class A | | 0.01~0.15 | 91-69.5 |
| | | | 0.15~0.5 | 66 |
| | | | 0.5~30 | 60 |
| 6 | CISPR 22 class B | ○ | 0.15~0.5 | 66-56 |
| | | | 0.5~5 | 56 |
| | | | 5~30 | 60 |

[dB μ V]

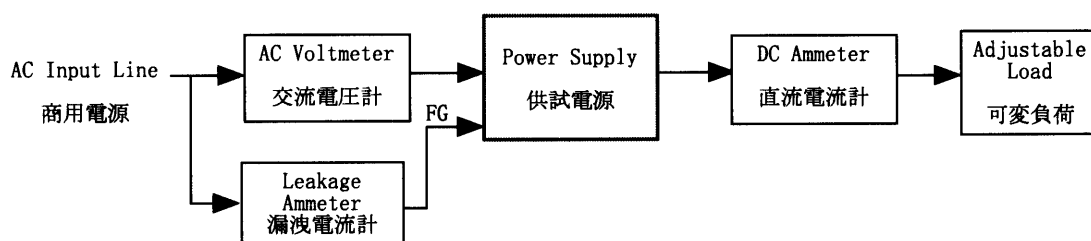


[dB μ V]

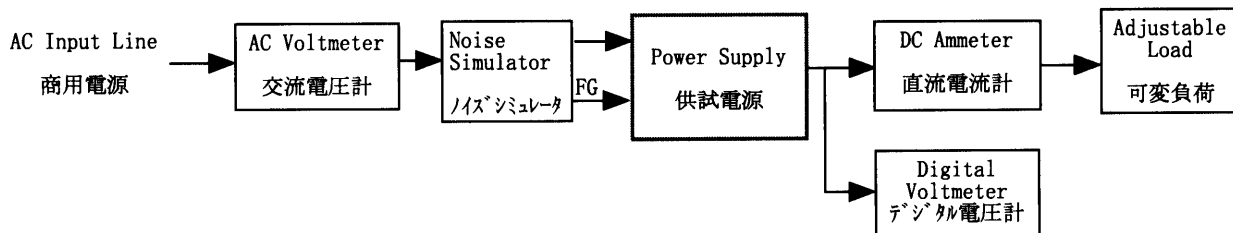




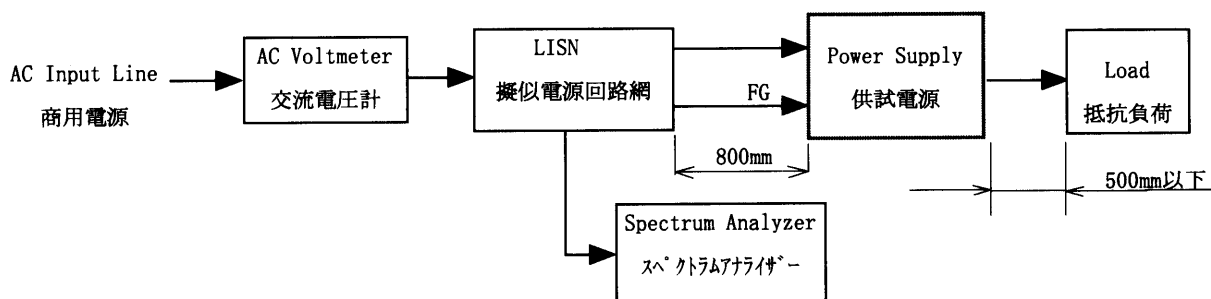
Testing Circuitry Figure A



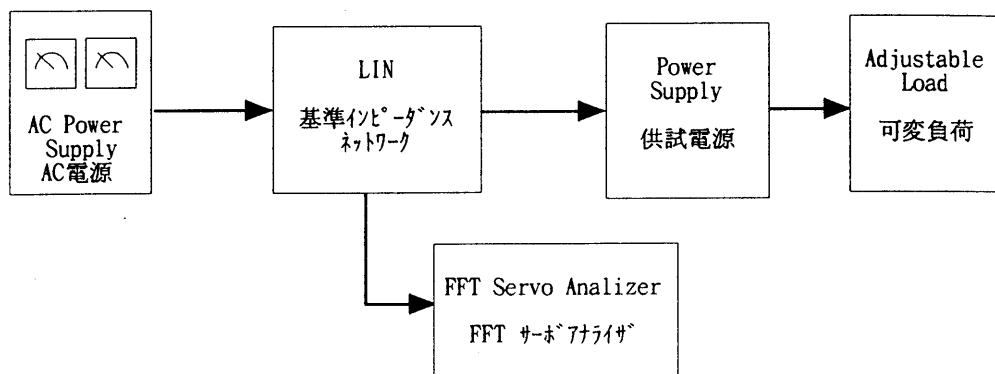
Testing Circuitry Figure B



Testing Circuitry Figure C



Testing Circuitry Figure D



Testing Circuitry Figure E