



# TEST REPORT: EPS-65S-5

## 65W Single Output Switching Power Supply

### ■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Component Stress Test

### ■ SAFETY & E.M.C. TEST

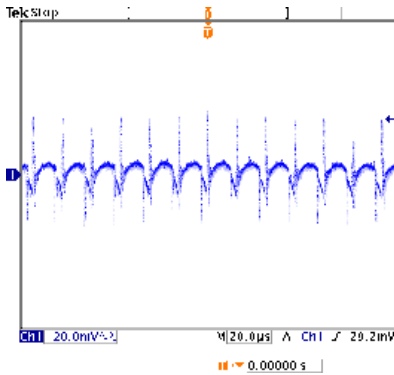
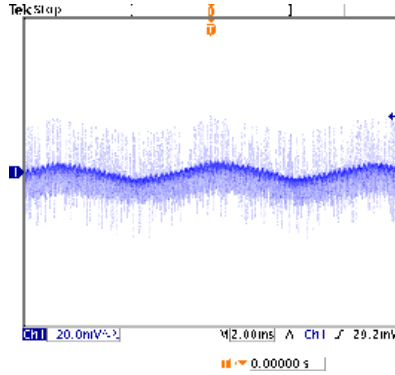
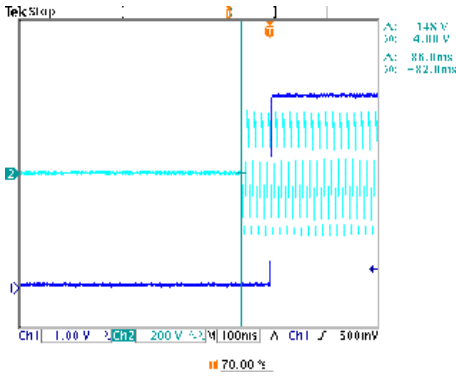
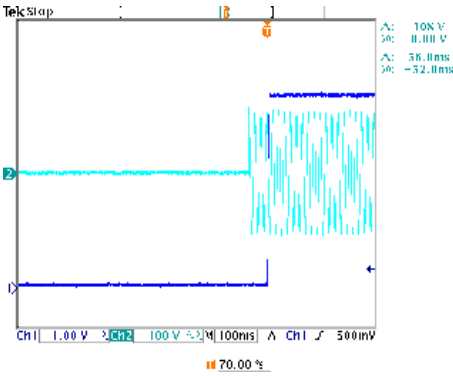
Safety Test

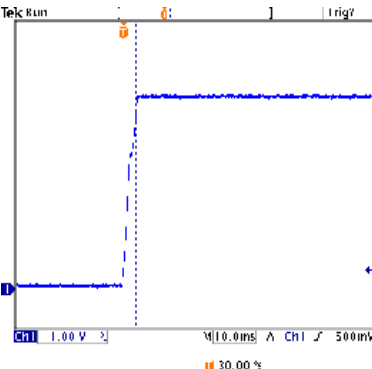
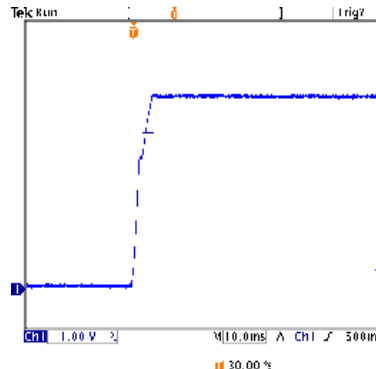
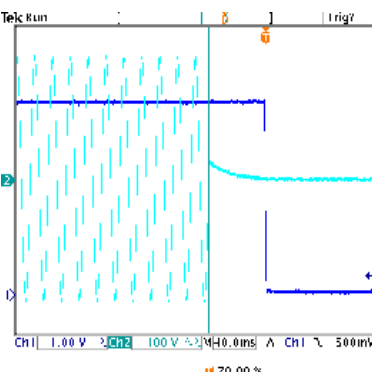
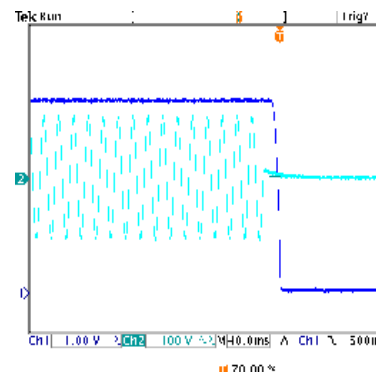
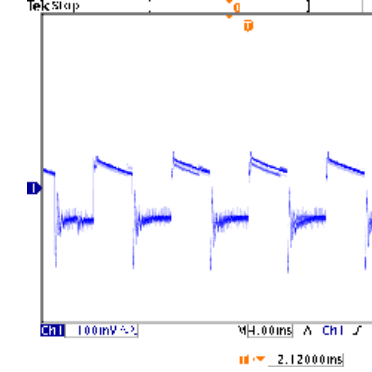
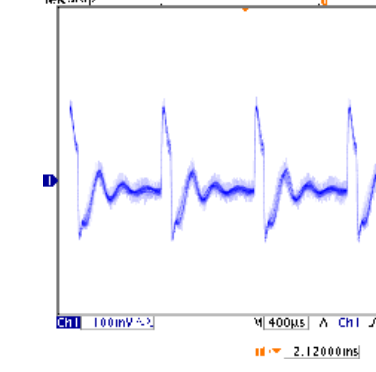
E.M.C. Test

### ■ RELIABILITY TEST

ENVIRONMENT TEST

# DESIGN VERIFY TEST OUTPUT FUNCTION

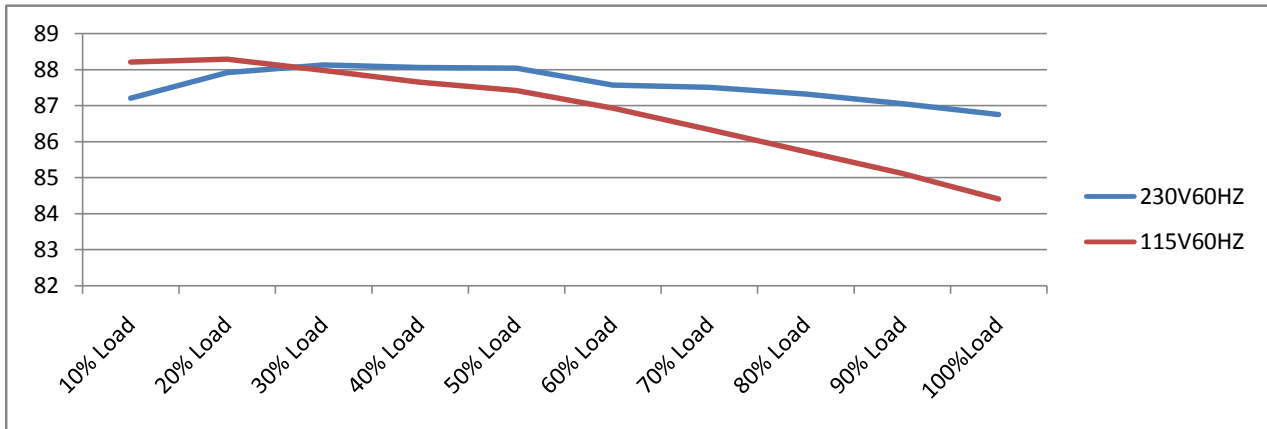
| NO | TEST ITEM                      | SPECIFICATION                                                                      | TEST CONDITION                                              | RESULT                                                                               |  |
|----|--------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------|--|
| 1  | OUTPUT VOLTAGE ADJUST RANGE    | CH1: 4.70V ~ 5.50V                                                                 | I/P : 230VAC<br>O/P: MIN LOAD<br>TA : 25°C                  | CH1: 4.46V ~ 5.65V                                                                   |  |
| 2  | OUTPUT VOLTAGE TOLERANCE (Max) | V1 : 2.0% ~ -2.0%                                                                  | I/P : 115VAC / 264VAC<br>O/P: FULL / MINLOAD<br>TA= 25°C    | V1: 1.49% ~ -1.12%                                                                   |  |
| 3  | LINE REGULATION (MAX.)         | V1 : 0.5% ~ -0.5%                                                                  | I/P : 115VAC / 264VAC<br>O/P: FULL LOAD<br>TA : 25°C        | V1: 0.00% ~ 0.00%                                                                    |  |
| 4  | LOAD REGULATION (MAX.)         | V1 : 2.0% ~ -2.0%                                                                  | I/P : 230VAC<br>O/P: MIN LOAD ~ FULL LOAD<br>TA : 25°C      | V1: 1.49% ~ -1.12%                                                                   |  |
| 5  | OVER/UNDERSHOOT TEST           | < ±10%                                                                             | I/P : 230VAC<br>O/P: FULL LOAD<br>TA : 25°C                 | TEST< 1.619 %                                                                        |  |
| 6  | RIPPLE & NOISE(Max)            | V1 : 80 mVp-p                                                                      | I/P : 230VAC<br>O/P: FULL LOAD<br>TA : 25°C                 | V1 : 62.8 mVp-p                                                                      |  |
|    |                                | high frequency :                                                                   |                                                             | low frequency :                                                                      |  |
|    |                                |  |                                                             |   |  |
| 7  | SET UP TIME (MAX.)             | 230VAC : 500ms<br>115VAC : 500ms                                                   | I/P : 230VAC<br>I/P : 115VAC<br>O/P: FULL LOAD<br>TA : 25°C | 230VAC : 86ms<br>115VAC : 56ms                                                       |  |
|    |                                | INPUT=230VAC/50HZ @ FULL LOAD<br>CH1 : Output Voltage CH2 : AC Input Voltage       |                                                             | INPUT=115VAC/60HZ @ FULL LOAD<br>CH1 : Output Voltage CH2 : AC Input Voltage         |  |
|    |                                |  |                                                             |  |  |
|    | RISE TIME (MAX.)               | 230VAC : 30ms<br>115VAC : 30ms                                                     | I/P : 230VAC<br>I/P : 115VAC<br>O/P: FULL LOAD<br>TA : 25°C | 230VAC : 3.4ms<br>115VAC : 4.0ms                                                     |  |

|                     |                                                                                     |                                |  |                                                                                                      |                                                                                      |                                    |  |  |
|---------------------|-------------------------------------------------------------------------------------|--------------------------------|--|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------|--|--|
| 8                   | INPUT=230VAC/50HZ @ FULL LOAD<br>CH1 : Output Voltage                               |                                |  |                                                                                                      | INPUT=115VAC/60HZ @ FULL LOAD<br>CH1 : Output Voltage                                |                                    |  |  |
|                     |    |                                |  |                                                                                                      |    |                                    |  |  |
| HOLD UP TIME (TYP.) |                                                                                     | 230VAC : 30ms<br>115VAC : 12ms |  | I/P : 230VAC<br>I/P : 115VAC<br>O/P: FULL LOAD<br>TA : 25°C                                          |                                                                                      | 230VAC : 63.2ms<br>115VAC : 12.8ms |  |  |
| 9                   | INPUT=230VAC/50HZ @ FULL LOAD<br>CH1 : Output Voltage CH2 : AC Input Voltage        |                                |  |                                                                                                      | INPUT=115VAC/60HZ @ FULL LOAD<br>CH1 : Output Voltage CH2 : AC Input Voltage         |                                    |  |  |
|                     |   |                                |  |                                                                                                      |   |                                    |  |  |
| DYNAMIC LOAD        |                                                                                     | V1 : 1000 mVp-p                |  | I/P : 230VAC<br>O/P:<br>(1)Full/Min load 50%duty/120HZ<br>(2)Full/Min load 50%duty/1KHZ<br>TA : 25°C |                                                                                      | (1). 366mv (2). 364mv unit:mVp-p   |  |  |
| 10                  | FULL /50% LOAD 50%DUTY / 120HZ                                                      |                                |  |                                                                                                      | FULL /50% LOAD 50%DUTY / 1KHZ                                                        |                                    |  |  |
|                     |  |                                |  |                                                                                                      |  |                                    |  |  |

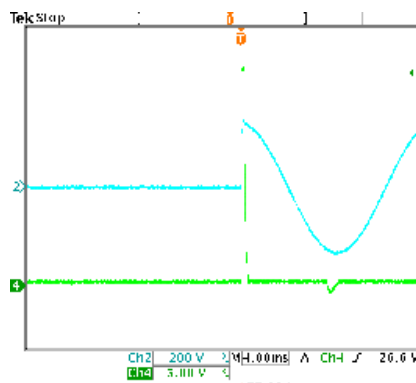
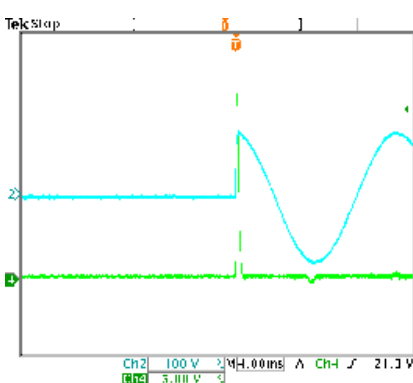
## INPUT FUNCTION TEST

| NO | TEST ITEM                 | SPECIFICATION              | TEST CONDITION                                                                                                                        | RESULT                              |
|----|---------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 1  | INPUT VOLTAGE RANGE       | 80VAC ~ 264VAC             | I/P : TESTING<br>O/P : FULL LOAD<br>Ta : 25°C                                                                                         | 72.4VAC ~ 300VAC                    |
|    |                           |                            | I/P :<br>LOW-LINE = 112VAC<br>HIGH-LINE = 300VAC<br>O/P : FULL/MIN LOAD<br>ON:30 Sec ; OFF:30 Sec 10MIN<br>( POWER ON/OFF NO DAMAGE ) | TEST : OK                           |
| 2  | INPUT FREQUENCY RANGE     | 47HZ ~ 63HZ<br>NO DAMAGE   | I/P : 115VAC ~ 264VAC<br>O/P : FULL~MIN LOAD<br>Ta : 25°C                                                                             | TEST : OK                           |
| 3  | INPUT CURRENT (TYP.)      | 1 / 230VAC<br>1.5 / 115VAC | I/P : 230VAC<br>I/P : 115VAC<br>O/P : FULL LOAD<br>TA : 25°C                                                                          | I= 0.5 / 230VAC<br>I= 0.81 / 115VAC |
| 4  | LEAKAGE CURRENT           | < 0.25mA                   | I/P : 264VAC<br>O/P : MIN LOAD<br>TA : 25°C                                                                                           | L-FG: 0.086 mA<br>N-FG: 0.086 mA    |
| 5  | NO LOAD POWER CONSUMPTION | < 0.10W                    | I/P : 230VAC<br>O/P : MIN LOAD<br>TA : 25°C                                                                                           | < 0.011 W                           |
|    | EFFICIENCY (TYP.)         | 84.0%                      | I/P : 230VAC<br>O/P : FULL LOAD<br>TA : 25°C                                                                                          | 86.88 %                             |

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|                                                                                     |                                                                                   |                                                                                      |                                        |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------|
| INRUSH CURRENT (TYP.)                                                               | 50A / 230VAC<br>30A / 115VAC<br>width= 555 us measured at 50% Ipeak<br>COLD START | I/P : 230VAC<br>I/P : 115VAC<br>O/P : FULL LOAD<br>TA : 25°C                         | I= 27.3A / 230VAC<br>I= 23.3A / 115VAC |
|                                                                                     |                                                                                   |                                                                                      |                                        |
| INPUT=230VAC/50HZ @ FULL LOAD<br>CH2 : Input current (1V=1A) CH4 : AC Input Voltage |                                                                                   | INPUT=115VAC/50HZ @ FULL LOAD<br>CH2 : Input current (1V=1A) CH4 : AC Input Voltage  |                                        |
|  |                                                                                   |  |                                        |



## PROTECTION FUNCTION TEST

| NO | TEST ITEM               | SPECIFICATION                          | TEST CONDITION                                                        | RESULT                                                                |
|----|-------------------------|----------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|
| 1  | OVER LOAD PROTECTION    | 115% ~ 150%                            | I/P: 264VAC<br>I/P: 230VAC<br>I/P: 115VAC<br>O/P: TESTING<br>Ta: 25°C | 133% 264VAC<br>136% 230VAC<br>122% 115VAC<br>Hiccup Mode              |
| 2  | OVER VOLTAGE PROTECTION | 5.75V ~ 6.75V                          | I/P: 264VAC<br>I/P: 230VAC<br>I/P: 80VAC<br>O/P: MIN LOAD<br>Ta: 25°C | 6.05V 264VAC<br>6.04V 230VAC<br>6.04V 80VAC<br>Shut down Re- power ON |
| 3  | SHORT PROTECTION        | SHORT EVERY OUTPUT<br>1 HOUR NO DAMAGE | I/P: 264VAC<br>I/P: 80VAC<br>O/P: FULL LOAD<br>Ta: 25°C               | NO DAMAGE<br>Hiccup Mode                                              |

## COMPONENT STRESS TEST

| NO | TEST ITEM            | SPECIFICATION                       | TEST CONDITION                                                                                                            | RESULT                                                                        |
|----|----------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 1  | PWM Power Transistor | Q1 Rated : 600V 11.0A               | I/P : 267VAC<br>VDS :<br>O/P : (1)Full Load Turn on<br>(2) Output Short<br>(3)Full load continue<br>Ta : 25°C             | VIN: 267VAC<br>VDS:<br>(1). 540.00V<br>(2). 546.00V<br>(3). 524.00V           |
| 2  | O/P Diode            | D100 Rated : 45V 30.0A              | I/P : 267VAC<br>O/P : (1)Full Load Turn on<br>(2) Output Short<br>(3)Full load continue                                   | (1). 36.80V<br>(2). 33.20V<br>(3). 37.20V                                     |
| 3  | Input Capacitor      | C5 Rated : 100uf 400V               | I/P : 267VAC<br>O/P : (1)Full Load Turn on /Off<br>(2)Min load Turn on /Off<br>(3)Full Load /Min load Change<br>Ta : 25°C | (1). 348.00V<br>(2). 352.00V<br>(3). 352.00V                                  |
| 4  | Control IC           | U1 Rated : 28V (max)<br>-0.3V (min) | I/P : 267VAC<br>O/P : (1)Full Load<br>(2)Output Short<br>(3)O.L.P<br>(4)O.V.P<br>(5)Low Line No Load Vo(min)<br>Ta : 25°C | U1<br>(1). 24.60V<br>(2). 17.10V<br>(3). 24.70V<br>(4). 19.50V<br>(5). 15.30V |
| 5  | Clamp Diode          | D5 Rated : 800V 2.0A                | I/P : 267VAC<br>O/P : (1)Full load continue<br>Ta : 25°C                                                                  | (1). 500.00V                                                                  |

## SAFETY &amp; E.M.C. TEST

## SAFETY TEST

| NO | TEST ITEM            | SPECIFICATION            | TEST CONDITION                       | RESULT                       |
|----|----------------------|--------------------------|--------------------------------------|------------------------------|
| 1  | WITHSTAND VOLTAGE    | I/P-O/P : 3.000KVAC /min | I/P-O/P: 3.300KVAC /min<br>Ta : 25°C | I/P-O/P: 1.41mA<br>NO DAMAGE |
| 2  | ISOLATION RESISTANCE | I/P-O/P : 500VDC>100MΩ   | I/P-O/P: 500VDC<br>Ta : 25°C/70%RH   | I/P-O/P: 9999MΩ<br>NO DAMAGE |

## E.M.C. TEST

| NO | TEST ITEM | SPECIFICATION          | TEST CONDITION                                     | RESULT |
|----|-----------|------------------------|----------------------------------------------------|--------|
| 1  | HARMONIC  | EN61000-3-2<br>CLASS A | I/P : 230VAC /50HZ<br>O/P : FULL LOAD<br>Ta : 25°C | PASS   |
|    |           | EN55022                | I/P : 230VAC /50HZ                                 |        |



|   |            |                                                 |                                                    |                       |
|---|------------|-------------------------------------------------|----------------------------------------------------|-----------------------|
| 2 | CONDUCTION | CLASS B                                         | O/P : FULL LOAD / 50% LOAD<br>Ta : 25°C            | Test by certified Lab |
| 3 | CONDUCTION | EN55022<br>CLASS B                              | I/P : 230VAC /50HZ<br>O/P : FULL LOAD<br>Ta : 25°C | Test by certified Lab |
| 4 | E.S.D      | EN61000-4-2<br>INDUSTRY AIR: 8KV / Contact: 4KV | I/P : 230VAC /50HZ<br>O/P : FULL LOAD<br>Ta : 25°C | CRITERIA A            |
| 5 | E.F.T      | EN61000-4-4<br>INDUSTRY INPUT: 2KV              | I/P : 230VAC /50HZ<br>O/P : FULL LOAD<br>Ta : 25°C | CRITERIA A            |
| 6 | SURGE      | IEC61000-4-5<br>INDUSTRY L-N: 2KV;L/N-PE: 4KV   | I/P : 230VAC /50HZ<br>O/P : FULL LOAD<br>Ta : 25°C | CRITERIA A            |

## RELIABILITY TEST

| NO | TEST ITEM                                              | SPECIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | TEST CONDITION                                                    | RESULT             |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|----|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|--------------------|------------------------|----------|--------------------|------------------------|---|-----|-------|-------|---|-----|-------|-------|---|-----|-------|--------|---|----|-------|--------|---|----|-------|-------|---|-----|-------|-------|---|----|-------|-------|---|------|--------|--------|---|------|--------|--------|----|------|-------|-------|----|------|-------|-------|----|------|-------|-------|----|------|-------|-------|----|----|-------|-------|
| 1  | TEMPERATURE RISE TEST                                  | MODEL : EPS-65S-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                   |                    |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 1. ROOM AMBIENT BURN-IN : 1.0hrs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                   |                    |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | IP: 230VAC O/P: 100% LOAD TA= 27.0℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                   |                    |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 2. HIGH AMBIENT BURN-IN : 1.0hrs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                   |                    |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | IP: 230VAC O/P: 100% LOAD TA= 50.0℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                   |                    |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | <table><tr><td>NO.</td><td>Position</td><td>ROOM AMBIENT 27.0℃</td><td>HIGH AMBIENT Ta: 50.0℃</td></tr><tr><td>1</td><td>LF1</td><td>54.7℃</td><td>71.9℃</td></tr><tr><td>2</td><td>LF2</td><td>47.8℃</td><td>66.1℃</td></tr><tr><td>3</td><td>BD1</td><td>82.9℃</td><td>101.5℃</td></tr><tr><td>4</td><td>Q1</td><td>86.6℃</td><td>105.3℃</td></tr><tr><td>5</td><td>C5</td><td>65.2℃</td><td>82.9℃</td></tr><tr><td>6</td><td>C40</td><td>71.6℃</td><td>90.2℃</td></tr><tr><td>7</td><td>T1</td><td>81.4℃</td><td>95.8℃</td></tr><tr><td>8</td><td>D100</td><td>106.1℃</td><td>121.6℃</td></tr><tr><td>9</td><td>D101</td><td>111.6℃</td><td>126.0℃</td></tr><tr><td>10</td><td>C105</td><td>91.5℃</td><td>98.5℃</td></tr><tr><td>11</td><td>C106</td><td>93.0℃</td><td>99.5℃</td></tr><tr><td>12</td><td>C107</td><td>67.1℃</td><td>78.3℃</td></tr><tr><td>13</td><td>L101</td><td>83.3℃</td><td>84.7℃</td></tr><tr><td>14</td><td>U1</td><td>67.8℃</td><td>85.4℃</td></tr></table> |                                                                   |                    | NO.                    | Position | ROOM AMBIENT 27.0℃ | HIGH AMBIENT Ta: 50.0℃ | 1 | LF1 | 54.7℃ | 71.9℃ | 2 | LF2 | 47.8℃ | 66.1℃ | 3 | BD1 | 82.9℃ | 101.5℃ | 4 | Q1 | 86.6℃ | 105.3℃ | 5 | C5 | 65.2℃ | 82.9℃ | 6 | C40 | 71.6℃ | 90.2℃ | 7 | T1 | 81.4℃ | 95.8℃ | 8 | D100 | 106.1℃ | 121.6℃ | 9 | D101 | 111.6℃ | 126.0℃ | 10 | C105 | 91.5℃ | 98.5℃ | 11 | C106 | 93.0℃ | 99.5℃ | 12 | C107 | 67.1℃ | 78.3℃ | 13 | L101 | 83.3℃ | 84.7℃ | 14 | U1 | 67.8℃ | 85.4℃ |
|    |                                                        | NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Position                                                          | ROOM AMBIENT 27.0℃ | HIGH AMBIENT Ta: 50.0℃ |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | LF1                                                               | 54.7℃              | 71.9℃                  |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | LF2                                                               | 47.8℃              | 66.1℃                  |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | BD1                                                               | 82.9℃              | 101.5℃                 |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Q1                                                                | 86.6℃              | 105.3℃                 |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | C5                                                                | 65.2℃              | 82.9℃                  |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | C40                                                               | 71.6℃              | 90.2℃                  |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | T1                                                                | 81.4℃              | 95.8℃                  |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | D100                                                              | 106.1℃             | 121.6℃                 |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | D101                                                              | 111.6℃             | 126.0℃                 |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
| 10 | C105                                                   | 91.5℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 98.5℃                                                             |                    |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
| 11 | C106                                                   | 93.0℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 99.5℃                                                             |                    |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
| 12 | C107                                                   | 67.1℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 78.3℃                                                             |                    |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
| 13 | L101                                                   | 83.3℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 84.7℃                                                             |                    |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
| 14 | U1                                                     | 67.8℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 85.4℃                                                             |                    |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
| 2  | OVER LOAD BURN-IN TEST                                 | NO DAMAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | I/P : 230VAC                                                      | TEST : OK          |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 1 HOUR ( MIN )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | O/P : 120% LOAD<br>Ta : 25℃                                       |                    |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
| 3  | LOW TEMPERATURE TURN ON TEST                           | NO DAMAGE<br>1 HOUR ( MIN )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | I/P : 264VAC / 115VAC<br>O/P : FULL LOAD<br>Ta : -30.0℃           | TEST : OK          |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
| 4  | HIGH HUMIDITY<br>HIGH TEMPERATURE<br>HIGH VOLTAGE TEST | AFTER 12 HOURS<br>IN CHAMBER ON<br>CONTROL 50℃<br>NO DAMAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | I/P : 272VAC<br>O/P : FULL LOAD<br>Ta : 50℃<br>HUMIDITY= 95.0% RH | TEST : OK          |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
| 5  | TEMPERATURE COEFFICIENT                                | ±0.03% /℃(0~50℃)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | I/P : 230VAC<br>O/P : FULL LOAD                                   | ±0.0000% /℃(0~50℃) |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
| 6  | STORAGE TEMPERATURE TEST                               | 1. Thermal shock Temperature : -40℃ ~ +85℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                   | TEST : OK          |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 2. Temperature change rate : 25℃ / MIN<br>3. Dwell time low and high temperature : 30 MIN/EACH<br>4. Total test cycle : 5 CYCLE<br>5. Input/Output condition : STATIC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                   |                    |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
| 7  | THERMAL SHOCK TEST                                     | 1. Thermal shock Temperature : -35℃ ~ +55℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                   | TEST : OK          |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 2. Temperature change rate : 25℃ / MIN<br>3. Dwell time low and high temperature : 30 MIN/EACH<br>4. Total test cycle : 10 CYCLE<br>5. Input/Output condition :<br>230VAC Full Load AC ON/OFF test turn on 58sec ; turn off 2sec                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                   |                    |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |
|    |                                                        | 1 Carton & 1 Set                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                   | TEST : OK          |                        |          |                    |                        |   |     |       |       |   |     |       |       |   |     |       |        |   |    |       |        |   |    |       |       |   |     |       |       |   |    |       |       |   |      |        |        |   |      |        |        |    |      |       |       |    |      |       |       |    |      |       |       |    |      |       |       |    |    |       |       |



# 65W Single Output Switching Power Supply      EPS-65S series

|    |                              |                                                                                                                                                                                                                                                                                |                                                                             |
|----|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 8  | VIBRATION TEST               | (1) Waveform : Sine Wave<br>(2) Frequency : 10~500Hz<br>(4) Acceleration : 2G<br>(5) Test Time : 60min in each axis (X.Y.Z)<br>(6) Ta : 25°C                                                                                                                                   |                                                                             |
| 9  | CAPACITOR LIFE CYCLE         | :SUPPOSE C105 IS THE MOST CRITICAL COMPONENT<br>(1) I/P : 230VAC O/P : FULL LOAD Ta= 25.0°C LIFE TIME<br>(2) I/P : 230VAC O/P : FULL LOAD Ta= 50.0°C LIFE TIME<br>(3) I/P : 230VAC O/P : 75% LOAD Ta= 50.0°C LIFE TIME<br>(4) I/P : 230VAC O/P : 50% LOAD Ta= 50.0°C LIFE TIME | (1). 158118 HRS<br>(2). 8847.6 HRS<br>(3). 39682.8 HRS<br>(4). 125618.4 HRS |
| 10 | MTBF                         | MIL-HDBK-217F<br>TOTAL FAILURE RATE : 959.1 KHRS                                                                                                                                                                                                                               |                                                                             |
| 11 | DMTBF /Accelerated Life test | Demonstration Mean Time Between Failure (Expected Life): Above 50000HRS @ TA 50°C                                                                                                                                                                                              |                                                                             |

|             |        |        |          |
|-------------|--------|--------|----------|
| TEST RESULT | TESTER | REVIEW | APPROVAL |
| PASS        | FRANK  | GESG   | WANGDZ   |

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