

## MSF200-S SPECIFICATIONS



|                       |                           | MODEL   | MSF200-3R3   | MSF200-5                   | MSF200-12                  | MSF200-15    |        |
|-----------------------|---------------------------|---|--|----------------------------|----------------------------|--------------|--------|
| INPUT                 | VOLTAGE, FREQUENCY        |   | AC100-120V / 200-240V (AC 90 ~ 132V / 180 ~ 264V or AC 255 ~ 370V), 50/60Hz (47 ~ 440Hz) User Selectable |                            |                            |              |        |
|                       | CURRENT                   | [A]   | 110V   | 3.4 (I <sub>c</sub> =100%) | 4.1 (I <sub>c</sub> =100%) |              |        |
|                       |                           |   | 220V   | 4.1 (I <sub>c</sub> =100%) | 2.0 (I <sub>c</sub> =100%) |              |        |
|                       | EFFICIENCY                | [%]   | 110V   | 75 typ                     | 75 typ                     | 80 typ       | 80 typ |
|                       |                           | 220V  |  |                            |                            |              |        |
| INRUSH CURRENT        |                           | 15A typ(AC IN 110V, I <sub>c</sub> =100%), 30A typ(AC IN 220V, I <sub>c</sub> =100%) at cold start. |  |                            |                            |              |        |
| OUTPUT                | VOLTAGE                   | [V]   | 3.3  | 5                          | 12                         | 15           |        |
|                       | CURRENT                   | [A]   | 40   | 40                         | 17                         | 13           |        |
|                       | REGULATION, LINE          | [mV]  | 25 Max   | 25 Max                     | 60 Max                     | 75 Max       |        |
|                       | REGULATION, LOAD          | [mV]  | 50 Max   | 50 Max                     | 120 Max                    | 150 Max      |        |
|                       | RIPPLE                    | [mVp-p]   | 50 Max   | 50 Max                     | 120 Max                    | 150 Max      |        |
|                       | RIPPLE, NOISE             | [mVp-p]   | 100 Max  | 100 Max                    | 170 Max                    | 200 Max      |        |
|                       | TEMPERATURE DRIFT 0~+50°C | [mV]  | 50 Max   | 75 Max                     | 180 Max                    | 225 Max      |        |
|                       | RISE TIME                 | [ms]  | 800 max (AC IN 110V, I <sub>c</sub> =100%)   |                            |                            |              |        |
|                       | HOLDING TIME              | [ms]  | 15 typ (AC IN 110V, I <sub>c</sub> =100%)  |                            |                            |              |        |
| PROTECTION CIRCUIT    | OVER CURRENT PROTECTION   |   | Works at over 110% of rating and recovers automatically  |                            |                            |              |        |
|                       | OVER VOLTAGE PROTECTION   |   | Works at 115 ~ 140% of rating (In the case of 3.3V, it is 115 ~ 160%)                                    |                            |                            |              |        |
| ELECTRICALLY ISOLATED | INPUT-OUTPUT              |   | AC 3,000V 1 minute current 20mA, DC 500V 100MΩ (At room temperature & Humidity)                          |                            |                            |              |        |
|                       | INPUT-CASE, FG            |   | AC 2,000V 1 minute current 20mA, DC 500V 100MΩ (At room temperature & Humidity)                          |                            |                            |              |        |
|                       | OUTPUT-CASE, FG           |   | AC 500V 1 minute current 100mA, DC 500V 100MΩ (At room temperature & Humidity)                           |                            |                            |              |        |
| ENVIRONMENT           | OPERATING TEMP AND HUMID  |   | -10 ~ +50°C, 20 ~ 90% RH(Non condensing)   |                            |                            |              |        |
|                       | STORAGE TEMP AND HUMID    |   | -20 ~ +75°C, 20 ~ 90% RH(Non condensing)   |                            |                            |              |        |
|                       | VIBRATION                 |   | 10 ~ 55Hz at 1G, 3 minutes period, 30 minutes along X, Y and Z axis                                      |                            |                            |              |        |
|                       | IMPACT                    |   | 10G for 20ms once on each X, Y and Z axis  |                            |                            |              |        |
| SAFETY                | SAFETY REGULATION         |   | UL, C-UL, CE   | UL, C-UL, CE               | UL, C-UL, CE               | UL, C-UL, CE |        |
|                       | LINE CONDUCTED RF VOLTAGE |   | Complied with FCC Part15 and EN55022 Class A Limits  |                            |                            |              |        |

## MSF200-S SPECIFICATIONS



|                       |                           | MODEL   | MSF200-24   | MSF200-28                  | MSF200-36    | MSF200-48    |
|-----------------------|---------------------------|---|---|----------------------------|--------------|--------------|
| INPUT                 | VOLTAGE, FREQUENCY        |   | AC100-120V / 200-240V (AC 90~ 132V / 180 ~ 264V or AC 225 ~ 370V), 50/60Hz (47 ~ 440Hz) User Selectable |                            |              |              |
|                       | CURRENT                   | [A]   | 110V  | 4.1 (I <sub>c</sub> =100%) |              |              |
|                       |                           |   | 220V  | 2.0 (I <sub>c</sub> =100%) |              |              |
|                       | EFFICIENCY                | [%]   | 110V  | 80 typ                     | 80 typ       | 82 typ       |
|                       |                           | 220V  |   |                            |              |              |
| INRUSH CURRENT        |                           | 15A typ(ACIN 110V, I <sub>c</sub> =100%), 30A typ(ACIN 220V, I <sub>c</sub> =100%) at cold start. |   |                            |              |              |
| OUTPUT                | VOLTAGE                   | [V]   | 24  | 28                         | 36           | 48           |
|                       | CURRENT                   | [A]   | 8.3   | 7.1                        | 5.5          | 4.1          |
|                       | REGULATION, LINE          | [mV]  | 120 Max   | 140 Max                    | 180 Max      | 240 Max      |
|                       | REGULATION, LOAD          | [mV]  | 240 Max   | 280 Max                    | 360 Max      | 480 Max      |
|                       | RIPPLE                    | [mVp-p]   | 240 Max   | 280 Max                    | 360 Max      | 480 Max      |
|                       | RIPPLE, NOISE             | [mVp-p]   | 290 Max   | 330 Max                    | 410 Max      | 530 Max      |
|                       | TEMPERATURE DRIFT 0~+50°C | [mV]  | 360 Max   | 420 Max                    | 540 Max      | 720 Max      |
|                       | RISE TIME                 | [ms]  | 800 max (AC IN 110V, I <sub>c</sub> =100%)  |                            |              |              |
|                       | HOLDING TIME              | [ms]  | 15 typ (AC IN 110V, I <sub>c</sub> =100%)   |                            |              |              |
| PROTECTION CIRCUIT    | OVER CURRENT PROTECTION   |   | Works at over 110% of rating and recovers automatically   |                            |              |              |
|                       | OVER VOLTAGE PROTECTION   |   | Works at 115 ~ 140% of rating   |                            |              |              |
| ELECTRICALLY ISOLATED | INPUT-OUTPUT              |   | AC 3,000V 1 minute current 20mA, DC 500V 100MΩ (At room temperature & Humidity)                         |                            |              |              |
|                       | INPUT-CASE, FG            |   | AC 2,000V 1 minute current 20mA, DC 500V 100MΩ (At room temperature & Humidity)                         |                            |              |              |
|                       | OUTPUT-CASE, FG           |   | AC 500V 1 minute current 100mA, DC 500V 100MΩ (At room temperature & Humidity)                          |                            |              |              |
| ENVIRONMENT           | OPERATING TEMP AND HUMID  |   | -10 ~ +50°C, 20 ~ 90% RH(Non condensing)  |                            |              |              |
|                       | STORAGE TEMP AND HUMID    |   | -20 ~ +75°C, 20 ~ 90% RH(Non condensing)  |                            |              |              |
|                       | VIBRATION                 |   | 10 ~ 55Hz at 1G, 3 minutes period, 30 minutes along X, Y and Z axis                                     |                            |              |              |
|                       | IMPACT                    |   | 10G for 20ms once on each X, Y and Z axis   |                            |              |              |
| SAFETY                | SAFETY REGULATION         |   | UL, C-UL, CE  | UL, C-UL, CE               | UL, C-UL, CE | UL, C-UL, CE |
|                       | LINE CONDUCTED RF VOLTAGE |   | Complied with FCC Part15 and EN55022 Class A Limits   |                            |              |              |