

EMI/EMS Test Result

Model Name : MUS6 series

Approved : Kenichi Tsukada

The EUT is operated with following condition during EMI/EMS test.

Input Voltage : Rated Voltage
Output Current : Rated Current
Ambient Temperature : 25°C ± 10°C

Prepared : Soichiro Kawaguchi

| # | Subject | Reference standard | Test Condition | Criteria *1 | Result |
|---|---------|--|---|-------------|--------|
| 1 | EMI | Conducted Emission | EN55011, EN55032 Class A CISPR11, CISPR32 Class A FCC Part15, FCC Part18 Class A VCCI Class A Testing circuitry Fig. 1 | - | Pass |
| 2 | | Radiated Emission | EN55011, EN55032 Class A CISPR11, CISPR32 Class A FCC Part15, FCC Part18 Class A VCCI Class A Testing circuitry Fig. 1 | - | Pass |
| 3 | EMS | Electrostatic discharge immunity test | IEC61000-4-2 Contact Discharge : Level 2 (4kV) Air Discharge : Level 2 (4kV) Testing circuitry Fig. 1 | A | Pass |
| 4 | | Radiated, radio-frequency, electromagnetic field immunity test | IEC61000-4-3 10V/m : (80MHz~1GHz) 3V/m : (1.4GHz~2.0GHz) 1V/m : (2.0GHz~2.7GHz) 80% Amplitude modulated Testing circuitry Fig. 1 | A | Pass |
| 5 | | Electrical fast transient / Burst immunity test | IEC61000-4-4 Level 4 (4kV) Repetition Rate : 5kHz and 100kHz Testing circuitry Fig. 1 | A | Pass |
| 6 | | Surge immunity test | IEC61000-4-5 Line to Line : Level 4 (2kV) Testing circuitry Fig. 2 | A | Pass |

*1 Definition of Criteria

Criteria A : (1) No output voltage drop with control circuit failure.
(2) No protection circuit and other circuit malfunction.

Criteria B : (1) The output voltage is temporary degradation of performance.
It recovers its normal performance without operator intervention.
(2) No protection circuit and other circuit failure.

<Notes>

Power supply shall not determine the final equipment performance against EMS test. Therefore we confirmed the output voltage performance only. EMS test should be performed as a final product.

Conditions

Test : Line conduction , Radiated emission
Electrostatic discharge immunity test
Radiated, radio-frequency, electromagnetic field immunity test
Electrical fast transient / burst immunity test

Model Name : MUS6□□

○Testing circuitry

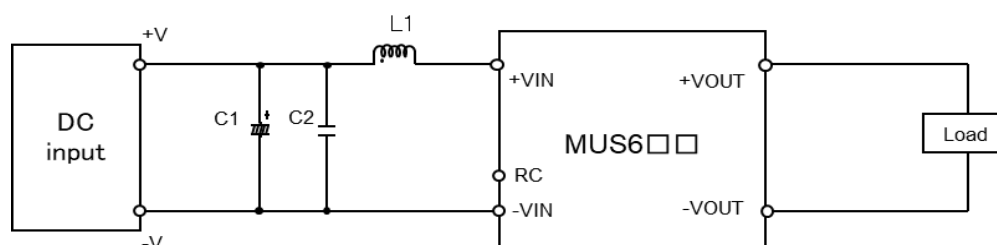


Fig.1 MUS6□□ Testing circuitry

| | | |
|------|---------|---|
| C1 : | MUS605□ | 25V 1500 μ F Electric capacitor (LXZseries NIPPON CHEMI-CON) |
| | MUS612□ | 50V 100 μ F Electric capacitor (UPWseries NICHICON) |
| | MUS624□ | — |
| | MUS648□ | — |
| C2 : | MUS605□ | 16V 22 μ F Ceramic capacitor (GRM31CC71C226M MURATA MANUFACTURING) |
| | MUS612□ | 25V 10 μ F Ceramic capacitor (CM316X7R106K25AT KYOCERA) |
| | MUS624□ | 50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING) |
| | MUS648□ | 100V 2.2 μ F Ceramic capacitor (C3216X7S2A225KT TDK) |
| L1 : | MUS605□ | 6500mA 1.5 μ H Inductor (LQH5BPN1R5N38 MURATA MANUFACTURING) |
| | MUS612□ | 5000mA 2.2 μ H Inductor (LQH5BPN2R2N38 MURATA MANUFACTURING) |
| | MUS624□ | 2600mA 10 μ H Inductor (LQH5BPN100M38 MURATA MANUFACTURING) |
| | MUS648□ | 1600mA 22 μ H Inductor (LQH5BPN220M38 MURATA MANUFACTURING) |



Conditions

Test : Surge immunity test

Model Name : MUS6□□

○ Testing circuitry

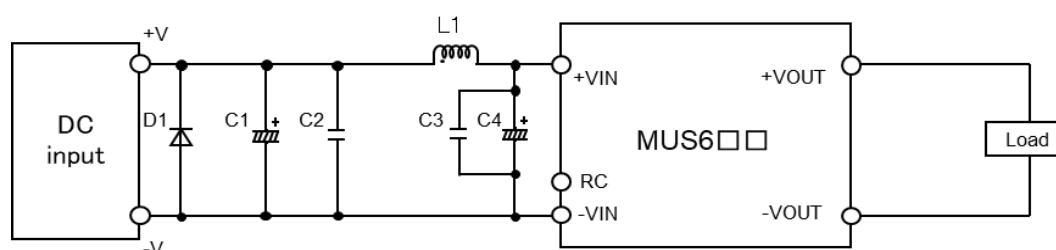


Fig.2 Testing circuitry

| | | |
|------|---------|---|
| C1 : | MUS605□ | 25V 1500 μ F Electric capacitor (LXZseries NIPPON CHEMI-CON) |
| | MUS612□ | 25V 1500 μ F Electric capacitor (LXZseries NIPPON CHEMI-CON) |
| | MUS624□ | 50V 680 μ F Electric capacitor (LXZseries NIPPON CHEMI-CON) |
| | MUS648□ | 100V 680 μ F Electric capacitor (UPWseries NICHICON) |
| C2 : | MUS605□ | 16V 22 μ F Ceramic capacitor (GRM31CC71C226M MURATA MANUFACTURING) |
| | MUS612□ | 25V 10 μ F Ceramic capacitor (CM316X7R106K25AT KYOCERA) |
| | MUS624□ | 50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING) |
| | MUS648□ | 100V 2.2 μ F Ceramic capacitor (C3216X7S2A225KT TDK) |
| C3 : | MUS605□ | 16V 22 μ F Ceramic capacitor (GRM31CC71C226M MURATA MANUFACTURING) |
| | MUS612□ | 25V 10 μ F Ceramic capacitor (CM316X7R106K25AT KYOCERA) |
| | MUS624□ | 50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING) |
| | MUS648□ | 100V 2.2 μ F Ceramic capacitor (C3216X7S2A225KT TDK) |
| C4 : | MUS605□ | 25V 1500 μ F Electric capacitor (LXZseries NIPPON CHEMI-CON) |
| | MUS612□ | 25V 1500 μ F Electric capacitor (LXZseries NIPPON CHEMI-CON) |
| | MUS624□ | 50V 680 μ F Electric capacitor (LXZseries NIPPON CHEMI-CON) |
| | MUS648□ | 100V 680 μ F Electric capacitor (UPWseries NICHICON) |
| L1 | MUS605□ | 2200mA 10 μ H Inductor(LQH5BPN100M38 MURATA MANUFACTURING) |
| | MUS612□ | 2200mA 10 μ H Inductor(LQH5BPN100M38 MURATA MANUFACTURING) |
| | MUS624□ | 1500mA 22 μ H Inductor(LQH5BPN220M38 MURATA MANUFACTURING) |
| | MUS648□ | 1100mA 47 μ H Inductor(LQH5BPN470M38 MURATA MANUFACTURING) |
| D1 : | MUS605□ | 400V 3A Diode(S3L40U SHINDENGEN) |
| | MUS612□ | 400V 3A Diode(S3L40U SHINDENGEN) |
| | MUS624□ | 400V 3A Diode(S3L40U SHINDENGEN) |
| | MUS648□ | 400V 3A Diode(S3L40U SHINDENGEN) |