



EMI/EMS Test Result

Model Name : MUS10 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. 2-1, 2-2	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 : MUS10□□

○ Testing circuitry

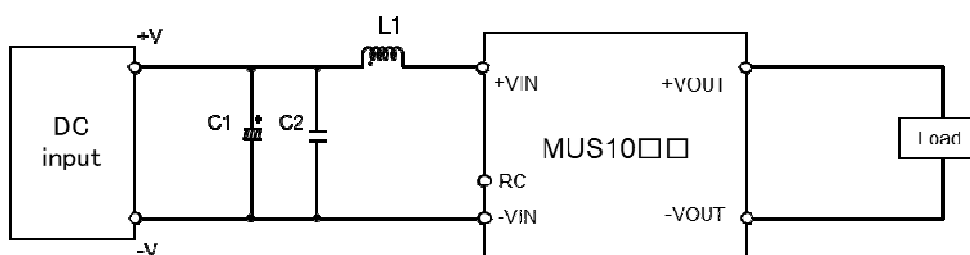


Fig.1 MUS10□□ Testing circuitry

C1 :	MUS1005□	25V 1500 μ F	Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MUS1012□	50V 100 μ F	Electric capacitor (UPWseries NICHICON)
	MUS1024□	—	—
	MUS1048□	—	—
C2 :	MUS1005□	16V 22 μ F	Ceramic capacitor (GRM31CC71C226M MURATA MANUFACTURING)
	MUS1012□	25V 10 μ F	Ceramic capacitor (CM316X7R106K25AT KYOCERA)
	MUS1024□	50V 4.7 μ F	Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MUS1048□	100V 2.2 μ F	Ceramic capacitor (C3216X7S2A225KT TDK)
L1 :	MUS1005□	5000mA 2.2 μ H	Inductor (LQH5BPN2R2N38 MURATA MANUFACTURING)
	MUS1012□	3500mA 4.7 μ H	Inductor (LQH5BPN4R7N38 MURATA MANUFACTURING)
	MUS1024□	1600mA 22 μ H	Inductor (LQH5BPN220M38 MURATA MANUFACTURING)
	MUS1048□	1100mA 47 μ H	Inductor (LQH5BPN470M38 MURATA MANUFACTURING)

Conditions

Test : Surge immunity test

Model Name : MUS10□□

○Testing circuitry

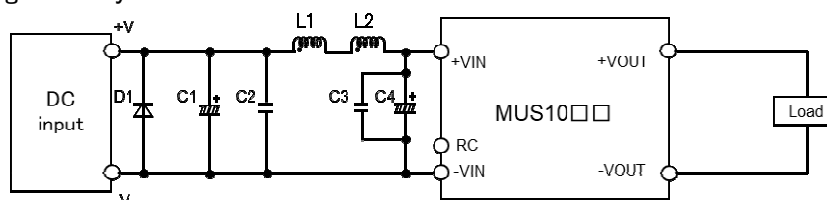


Fig.2-1 MUS1005□ Testing circuitry

C1 :	MUS1005□	25V 1500 μ F Electric capacitor (LXZseries NIPPON CHEMI-CON)
C2 :	MUS1005□	16V 22 μ F Ceramic capacitor (GRM31CC71C226M MURATA MANUFACTURING)
C3 :	MUS1005□	16V 22 μ F Ceramic capacitor (GRM31CC71C226M MURATA MANUFACTURING)
C4 :	MUS1005□	25V 1500 μ F Electric capacitor (LXZseries NIPPON CHEMI-CON)
L1 :	MUS1005□	3800mA 4.7 μ H Inductor(LQH5BPN4R7N38 MURATA MANUFACTURING)
L2 :	MUS1005□	3800mA 4.7 μ H Inductor(LQH5BPN4R7N38 MURATA MANUFACTURING)
D1 :	MUS1005□	400V 3A Diode(S3L40U SHINDENGEN)

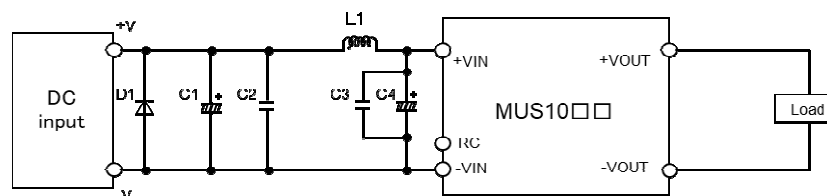


Fig.2-2 MUS1012□, MUS1024□, MUS1048□ Testing circuitry

C1 :	MUS1012□	25V 1500 μ F Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MUS1024□	50V 680 μ F Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MUS1048□	100V 680 μ F Electric capacitor (UPWseries NICHICON)
C2 :	MUS1012□	25V 10 μ F Ceramic capacitor (CM316X7R106K25AT KYOCERA)
	MUS1024□	50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MUS1048□	100V 2.2 μ F Ceramic capacitor (C3216X7S2A225KT TDK)
C3 :	MUS1012□	25V 10 μ F Ceramic capacitor (CM316X7R106K25AT KYOCERA)
	MUS1024□	50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MUS1048□	100V 2.2 μ F Ceramic capacitor (C3216X7S2A225KT TDK)
C4 :	MUS1012□	25V 1500 μ F Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MUS1024□	50V 680 μ F Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MUS1048□	100V 680 μ F Electric capacitor (UPWseries NICHICON)
L1 :	MUS1012□	2200mA 10 μ H Inductor(LQH5BPN100M38 MURATA MANUFACTURING)
	MUS1024□	1500mA 22 μ H Inductor(LQH5BPN220M38 MURATA MANUFACTURING)
	MUS1048□	1100mA 47 μ H Inductor(LQH5BPN470M38 MURATA MANUFACTURING)
D1 :	MUS1012□	400V 3A Diode(S3L40U SHINDENGEN)
	MUS1024□	400V 3A Diode(S3L40U SHINDENGEN)
	MUS1048□	400V 3A Diode(S3L40U SHINDENGEN)