



EMI/EMS Test Result

Model Name : MUW3 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. 1-1, 1-2	-	Pass
2		Radiated Emission	EN55011, EN55032 Class A CISPR11, CISPR32 Class A FCC Part15, FCC Part18 Class A VCCI Class A Testing circuitry Fig. 1-1, 1-2	-	Pass
3	EMS	Electrostatic discharge immunity test	IEC61000-4-2 Contact Discharge : Level 4 (8kV) Air Discharge : Level 4 (15kV) Testing circuitry	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. 1-1, 1-2	A	Pass
5		Electrical fast transient / Burst immunity test	IEC61000-4-4 Level 4 (4kV) Repetition Rate : 5kHz and 100kHz Testing circuitry Fig. 1-1, 1-2	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 : MUW3□□

○Testing circuitry

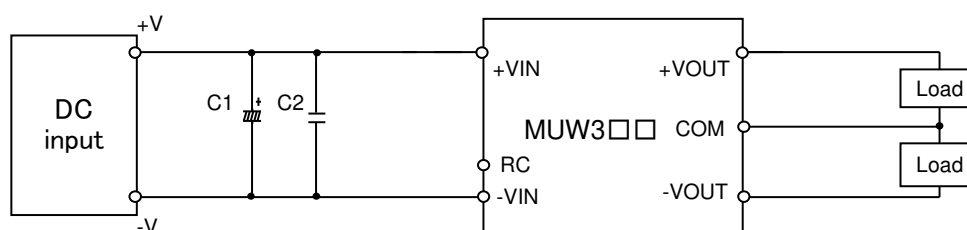


Fig.1-1 MUW305□, MUW312□, MUW324□ Testing circuitry

C1 :	MUW305□	16V 220 μ F	Electric capacitor (UPWseries NICHICON)
	MUW312□	50V 100 μ F	Electric capacitor (UPWseries NICHICON)
	MUW324□	—	
C2 :	MUW305□	16V 22 μ F	Ceramic capacitor (GRM31CC71C226M MURATA MANUFACTURING)
	MUW312□	25V 22 μ F	Ceramic capacitor (C3216JB1E226MT TDK)
	MUW324□	50V 10 μ F	Ceramic capacitor (C3216X7R1H106KT TDK)

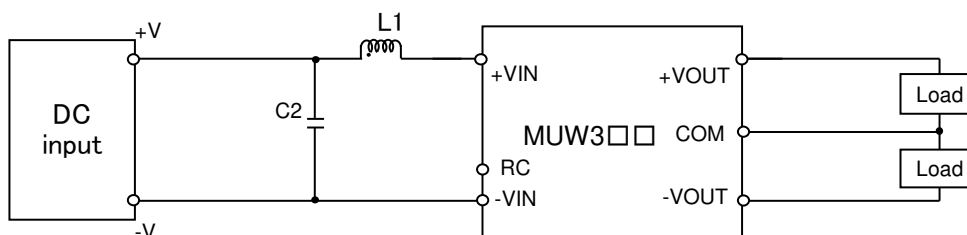


Fig.1-2 MUW348□ Testing circuitry

C2 :	MUW348□	100V 2.2 μ F	Ceramic capacitor (C3216X7S2A225KT TDK)
L1 :	MUW348□	520mA 15 μ H	Inductor (LQH32PN150MN0L MURATA MANUFACTURING)

Conditions

Test : Surge immunity test

Model Name : MUW3□□

○ Testing circuitry

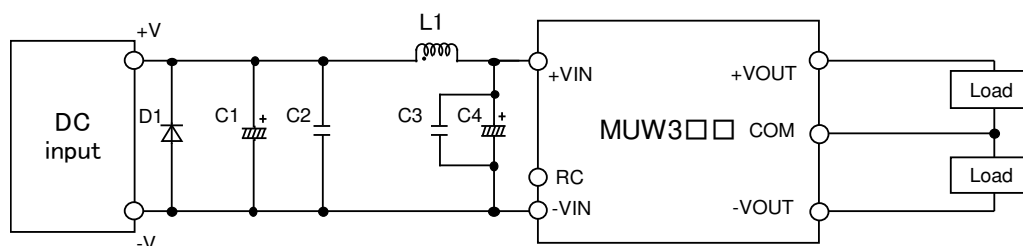


Fig.2 Testing circuitry

C1 :	MUW305□□	25V 1500 μ F	Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MUW312□□	25V 1000 μ F	Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MUW324□□	100V 470 μ F	Electric capacitor (UPWseries NICHICON)
	MUW348□□	100V 470 μ F	Electric capacitor (UPWseries NICHICON)
C2 :	MUW305□□	16V 22 μ F	Ceramic capacitor (GRM31CC71C226M MURATA MANUFACTURING)
	MUW312□□	25V 22 μ F	Ceramic capacitor (C3216JB1E226MT TDK)
	MUW324□□	50V 10 μ F	Ceramic capacitor (C3216X7R1H106KT TDK)
	MUW348□□	100V 2.2 μ F	Ceramic capacitor (C3216X7S2A225KT TDK)
C3 :	MUW305□□	16V 22 μ F	Ceramic capacitor (GRM31CC71C226M MURATA MANUFACTURING)
	MUW312□□	25V 22 μ F	Ceramic capacitor (C3216JB1E226MT TDK)
	MUW324□□	50V 10 μ F	Ceramic capacitor (C3216X7R1H106KT TDK)
	MUW348□□	100V 2.2 μ F	Ceramic capacitor (C3216X7S2A225KT TDK)
C4 :	MUW305□□	25V 1500 μ F	Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MUW312□□	25V 1000 μ F	Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MUW324□□	50V 330 μ F	Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MUW348□□	100V 100 μ F	Electric capacitor (UPWseries NICHICON)
L1	MUW305□□	1800mA 4.7 μ H	Inductor (DFE201612P-4R7M MURATA MANUFACTURING)
	MUW312□□	1800mA 4.7 μ H	Inductor (DFE201612P-4R7M MURATA MANUFACTURING)
	MUW324□□	1000mA 10 μ H	Inductor (DFE201610E-100M MURATA MANUFACTURING)
	MUW348□□	520mA 15 μ H	Inductor (LQH32PN150MN0L MURATA MANUFACTURING)
D1 :	MUW305□□	400V 3A Diode	(S3L40U SHINDENGEN)
	MUW312□□	400V 3A Diode	(S3L40U SHINDENGEN)
	MUW324□□	400V 3A Diode	(S3L40U SHINDENGEN)
	MUW348□□	400V 3A Diode	(S3L40U SHINDENGEN)