



EMI/EMS Test Result

Model Name : MHFW3 series

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

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#	Subject	Reference standard	Test Condition	Criteria *1	Result
1	EMI	Conducted Emission	EN55011, EN55032 Class A CISPR 32 Class A FCC Part15 Class A VCCI Class A Testing circuitry Fig. 1	-	Pass
2		Radiated Emission	EN55011, EN55032 Class A CISPR 32 Class A FCC Part15 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~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	B	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 can't 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
Static electricity immunity test
Radiated, radio-frequency, electromagnetic field immunity test
Electrical fast transient / burst immunity test

Model Name : MHFW3□□

○Testing circuitry

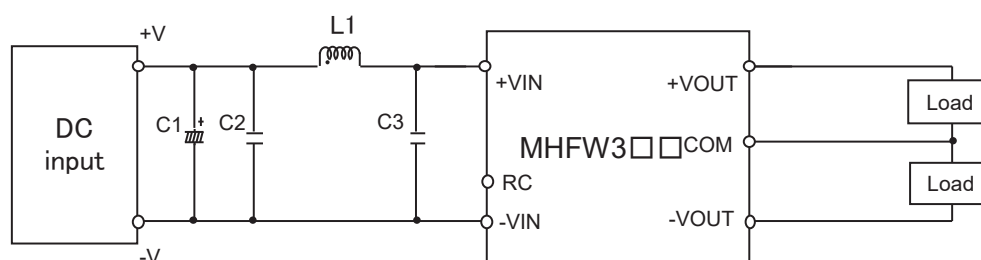


Fig.1 Testing circuitry

C1 :	MHFW312□□	50V 100μ F Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MHFW324□□	—
	MHFW348□□	—
C2 :	MHFW312□□	25V 10μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING)
	MHFW324□□	50V 4.7μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MHFW348□□	100V 2.2μ F Ceramic capacitor (HMK316AC7225KLHTE TAIYO YUDEN)
C3 :	MHFW312□□	25V 10μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING)
	MHFW324□□	50V 4.7μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MHFW348□□	100V 2.2μ F Ceramic capacitor (HMK316AC7225KLHTE TAIYO YUDEN)
L1 :	MHFW312□□	1200mA 4.7μ H Inductor(LQH32PN4R7NNCL MURATA MANUFACTURING)
	MHFW324□□	900mA 10μ H Inductor(LQH32PN100MNCL MURATA MANUFACTURING)
	MHFW348□□	550mA 22μ H Inductor(LQH32PN220MNCL MURATA MANUFACTURING)

Conditions

Test : Surge immunity test

Model Name : MHFW3□□

○Testing circuitry

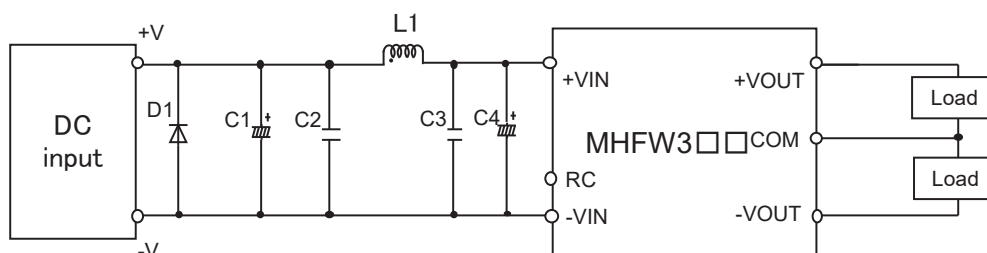


Fig.2 Testing circuitry

C1 :	MHFW312□□	25V 1000μ F Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MHFW324□□	63V 470μ F Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MHFW348□□	100V 180μ F Electric capacitor (LXVseries NIPPON CHEMI-CON)
C2 :	MHFW312□□	25V 10μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING)
	MHFW324□□	50V 4.7μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MHFW348□□	100V 2.2μ F Ceramic capacitor (HMK316AC7225KLHTE TAIYO YUDEN)
C3 :	MHFW312□□	25V 10μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING)
	MHFW324□□	50V 4.7μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MHFW348□□	100V 2.2μ F Ceramic capacitor (HMK316AC7225KLHTE TAIYO YUDEN)
C4 :	MHFW312□□	25V 1000μ F Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MHFW324□□	63V 470μ F Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MHFW348□□	100V 180μ F Electric capacitor (LXVseries NIPPON CHEMI-CON)
L1	MHFW312□□	1200mA 4.7μ H Inductor(LQH32PN4R7NNCL MURATA MANUFACTURING)
	MHFW324□□	900mA 10μ H Inductor(LQH32PN100MNCL MURATA MANUFACTURING)
	MHFW348□□	550mA 22μ H Inductor(LQH32PN220MNCL MURATA MANUFACTURING)
D1 :	MHFW312□□	400V 3A Diode(S3L40U SHINDENGEN)
	MHFW324□□	400V 3A Diode(S3L40U SHINDENGEN)
	MHFW348□□	400V 3A Diode(S3L40U SHINDENGEN)