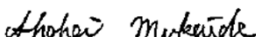


MGW3 Series EMI/EMS Test results

Approved :


Takayuki Fukuda

Prepared :


Shohei Mukaide

No.	Test item	Conditions	Conditions of Acceptability	Result
1	Line conduction	(1) Rated input (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4) Testing circuitry Fig.1	(1)Meets the undermentioned standard. FCC Part15 classA , VCCI classA CISPR22 classA , EN55022-A	ok
2	Radiated emission	(1) Rated input (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4) Testing circuitry Fig.1	(1)Meets the under mentioned standard. FCC Part15 classA , VCCI classA CISPR22 classA , EN55022-A	ok
3	Static electricity immunity test (EN61000-4-2)	(1) Rated input (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4) Contact discharge voltage 4[kV] (EN61000-4-2 Level 2) (5) Testing circuitry Fig.1	(1)No protection circuit failure. (2)No output voltage drop with control circuit failure. (3)No any other function failure.	ok
4	Radiated, radio-frequency, electromagnetic field immunity test (EN61000-4-3)	(1) Rated input (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4)Testing field strength (Level 3) ① 10 [V/m] (80MHz to 1.0GHz) ② 3 [V/m] (1.4GHz to 2.0GHz) ③ 1 [V/m] (2.0GHz to 2.7GHz) (5) Testing circuitry Fig.1	(1)No protection circuit failure. (2)No output voltage drop with control circuit failure. (3)No any other function failure.	ok
5	Electrical fast transient/ burst immunity test (EN61000-4-4)	(1) Rated input (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4) Test peak voltage 4[kV] (IEC61000-4-4 Level 4) (5) Testing circuitry Fig.2	(1)No protection circuit failure. (2)No output voltage drop with control circuit failure. (3)No any other function failure.	ok
6	Surge immunity test (EN61000-4-5)	(1) Rated input (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4) Test voltage Line to line 2[kV] (Level 3) (5) Testing circuitry Fig.3	(1)The power supply is not stop. (2)Circuit does not malfunction. (3)No abnormality of the insulation destruction etc. (4)Parts are no damaged.	ok

○Testing circuitry 1

Test : Line conduction , Radiated emission
Radiated, radio-frequency, electromagnetic field immunity test
Static electricity immunity test

Model Name : MGW3□□

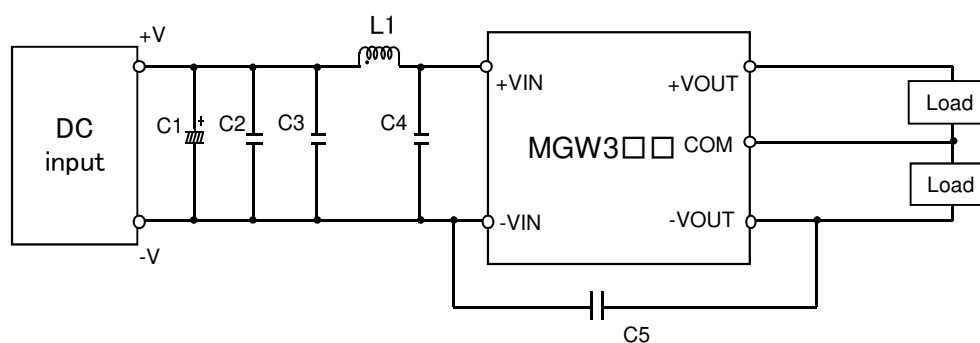


Fig.1 Testing circuitry

C1 :	MGW305□□	25V 100 μ F Electrolytic capacitor (LXZseries NIPPON CHEMI-CON)
	MGW312□□	-
	MGW324□□	-
	MGW348□□	-
C2 :	MGW305□□	16V 22 μ F Ceramic capacitor (GRM31CC71C226K MURATA MANUFACTURING)
	MGW312□□	25V 10 μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING)
	MGW324□□	50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MGW348□□	100V 2.2 μ F Ceramic capacitor (GRM31CR72A225K MURATA MANUFACTURING)
C3 :	MGW305□□	16V 22 μ F Ceramic capacitor (GRM31CC71C226K MURATA MANUFACTURING)
	MGW312□□	25V 10 μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING)
	MGW324□□	50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MGW348□□	100V 2.2 μ F Ceramic capacitor (GRM31CR72A225K MURATA MANUFACTURING)
C4 :	MGW305□□	16V 22 μ F Ceramic capacitor (GRM31CC71C226K MURATA MANUFACTURING)
	MGW312□□	25V 10 μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING)
	MGW324□□	50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MGW348□□	100V 2.2 μ F Ceramic capacitor (GRM31CR72A225K MURATA MANUFACTURING)
C5 :	MGW305□□	2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING)
	MGW312□□	2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING)
	MGW324□□	2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING)
	MGW348□□	2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING)
L1 :	MGW305□□	1550mA 3.3 μ H Inductor(LQH32PN3R3NNCL MURATA MANUFACTURING)
	MGW312□□	1200mA 4.7 μ H Inductor(LQH32PN4R7NNCL MURATA MANUFACTURING)
	MGW324□□	900mA 10 μ H Inductor(LQH32PN100MNCL MURATA MANUFACTURING)
	MGW348□□	550mA 22 μ H Inductor(LQH32PN220MNCL MURATA MANUFACTURING)

○Testing circuitry 2

Test : Electrical fast transient / burst immunity test

Model Name : MGW3□□

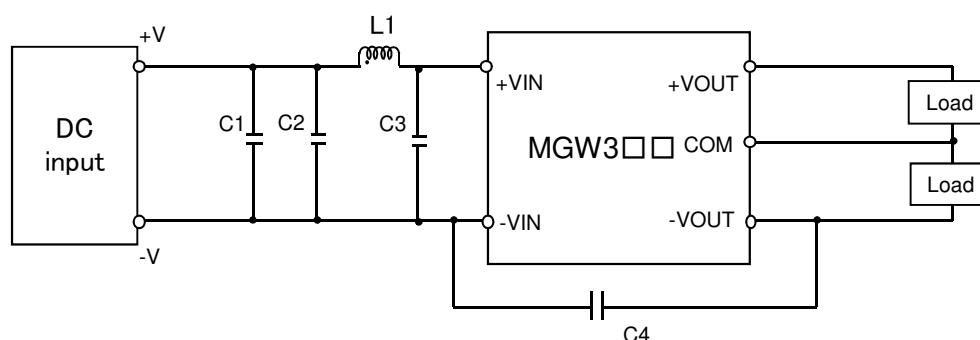


Fig.2 Testing circuitry

C1 :	MGW305□□	16V 22 μ F Ceramic capacitor (GRM31CC71C226K MURATA MANUFACTURING)
	MGW312□□	25V 10 μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING)
	MGW324□□	50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MGW348□□	100V 2.2 μ F Ceramic capacitor (GRM31CR72A225K MURATA MANUFACTURING)
C2 :	MGW305□□	16V 22 μ F Ceramic capacitor (GRM31CC71C226K MURATA MANUFACTURING)
	MGW312□□	25V 10 μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING)
	MGW324□□	50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MGW348□□	100V 2.2 μ F Ceramic capacitor (GRM31CR72A225K MURATA MANUFACTURING)
C3 :	MGW305□□	16V 22 μ F Ceramic capacitor (GRM31CC71C226K MURATA MANUFACTURING)
	MGW312□□	25V 10 μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING)
	MGW324□□	50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MGW348□□	100V 2.2 μ F Ceramic capacitor (GRM31CR72A225K MURATA MANUFACTURING)
C4 :	MGW305□□	2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING)
	MGW312□□	2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING)
	MGW324□□	2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING)
	MGW348□□	2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING)
L1 :	MGW305□□	1550mA 3.3 μ H Inductor(LQH32PN3R3NNCL MURATA MANUFACTURING)
	MGW312□□	1200mA 4.7 μ H Inductor(LQH32PN4R7NNCL MURATA MANUFACTURING)
	MGW324□□	900mA 10 μ H Inductor(LQH32PN100MNCL MURATA MANUFACTURING)
	MGW348□□	550mA 22 μ H Inductor(LQH32PN220MNCL MURATA MANUFACTURING)

○Testing circuitry 3

Test : Surge immunity test

Model Name : MGW3□□

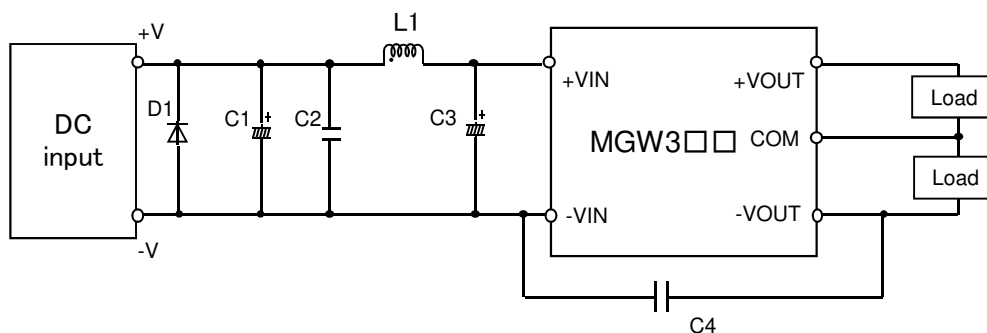


Fig.3 Testing circuitry

C1 :	MGW305□□	25V 1000 μ F Electrolytic capacitor (LXZseries NIPPON CHEMI-CON)
	MGW312□□	50V 470 μ F Electrolytic capacitor (LXZseries NIPPON CHEMI-CON)
	MGW324□□	63V 220 μ F Electrolytic capacitor (LXZseries NIPPON CHEMI-CON)
	MGW348□□	100V 100 μ F Electrolytic capacitor (LXVseries NIPPON CHEMI-CON)
C2 :	MGW305□□	16V 22 μ F Ceramic capacitor (GRM31CC71C226K MURATA MANUFACTURING)
	MGW312□□	25V 10 μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING)
	MGW324□□	50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MGW348□□	100V 2.2 μ F Ceramic capacitor (GRM31CR72A225K MURATA MANUFACTURING)
C3 :	MGW305□□	25V 1000 μ F Electrolytic capacitor (LXZseries NIPPON CHEMI-CON)
	MGW312□□	50V 470 μ F Electrolytic capacitor (LXZseries NIPPON CHEMI-CON)
	MGW324□□	63V 220 μ F Electrolytic capacitor (LXZseries NIPPON CHEMI-CON)
	MGW348□□	100V 100 μ F Electrolytic capacitor (LXVseries NIPPON CHEMI-CON)
C4 :	MGW305□□	2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING)
	MGW312□□	2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING)
	MGW324□□	2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING)
	MGW348□□	2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING)
L1	MGW305□□	1550mA 3.3 μ H Inductor(LQH32PN3R3NNCL MURATA MANUFACTURING)
	MGW312□□	1200mA 4.7 μ H Inductor(LQH32PN4R7NNCL MURATA MANUFACTURING)
	MGW324□□	900mA 10 μ H Inductor(LQH32PN100MNCL MURATA MANUFACTURING)
	MGW348□□	550mA 22 μ H Inductor(LQH32PN220MNCL MURATA MANUFACTURING)
D1 :	MGW305□□	400V 3A Diode(S3L40U SHINDENGEN)
	MGW312□□	400V 3A Diode(S3L40U SHINDENGEN)
	MGW324□□	400V 3A Diode(S3L40U SHINDENGEN)
	MGW348□□	400V 3A Diode(S3L40U SHINDENGEN)