

CQS24 series EMI/EMS Test resultApproved : *Katsuya Mame*Prepared : *Shinichi Miyahara*

No.	Test item	Conditions	Conditions of Acceptability	Result
1	Line conduction	(1) Rated input(DC24V) (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(DC24V) (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
3	Static electricity immunity test (EN61000-4-2)	(1) Rated input(DC24V) (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4) Contact discharge voltage 8[kV] (EN61000-4-2 Level 4) (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(DC24V) (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4)Testing field strength 10[V/m] (EN61000-4-3 Level 3) (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(DC24V) (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.1	(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(DC24V) (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4) Test voltage Line to line 2[kV] (Level 3) Line to earth 4[kV] (Level 4) (5) Testing circuitry Fig.2	(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

OEMI/EMS testing circuitry

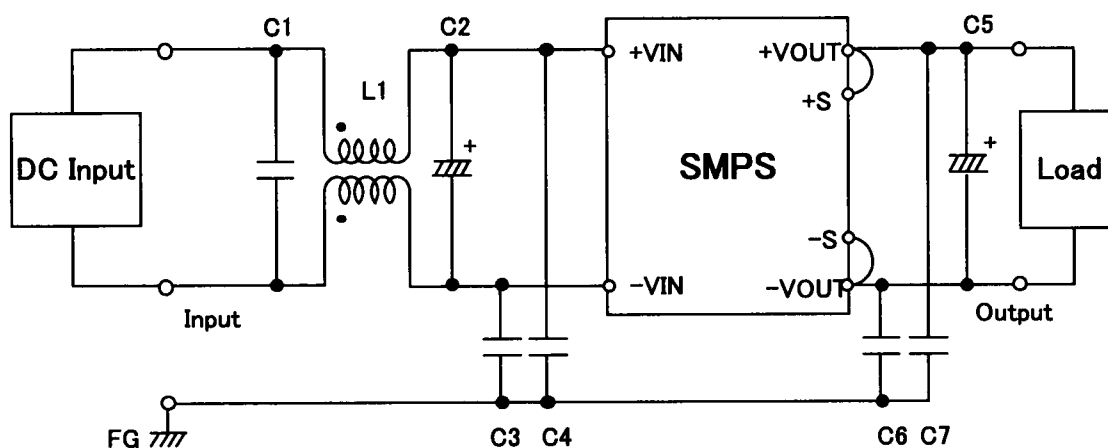


Fig.1 Testing circuitry

L1	: SC-10-10J	NEC/TOKIN	or equivalent.
C1	: $2.2 \mu F$ 100V	Film capacitor	
C2	: $220 \mu F$ 50V	Electric capacitor	
C3,4	: $0.068 \mu F$ 630V	Film capacitor	
C5	: $10 \mu F$ 25V	Electric capacitor	
C6,7	: $0.033 \mu F$ 630V	Film capacitor	

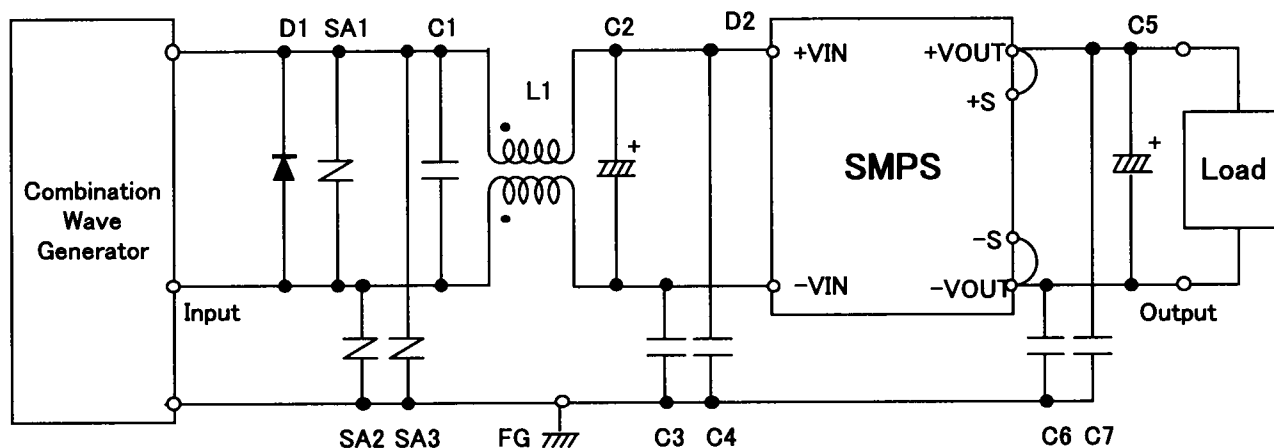


Fig.2 Surge immunity Testing circuitry

L1	: SC-10-10J	NEC/TOKIN	or equivalent.
C1	: $2.2 \mu F$ 100V	Film capacitor	
C2	: $220 \mu F$ 50V	Electric capacitor	
C3,4	: $0.068 \mu F$ 630V	Film capacitor	
C5	: $10 \mu F$ 25V	Electric capacitor	
C6,7	: $0.033 \mu F$ 630V	Film capacitor	
SA1~3	: ERZV10D470	Panasonic	
D1	: ERD32-02	FUJI ELECTRIC	or equivalent.