



MHFS3 series Reliability test results

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OS DESIGN DEPT.

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No.	Test Item	Testing conditions	Conditions of acceptability	Number of samples	Number of failures
1	Heat cycle test	(1) $-40^{\circ}\text{C} \sim 125^{\circ}\text{C}$ 30minutes each (2) 800cycles	(1)No degradation of electric characteristics after test. (2)No crack at solder joint.	5	0
2	High temperature/ High humidity bias test	(1) $T_a=85^{\circ}\text{C}$, RH=85% (2) Input Max.Voltege (3) Load 0% (4) 1000hours	(1)No degradation of electric characteristics after test.	3	0
3	Vibration test	(1) $f=10\sim 150\text{Hz}$, 147.0m/s^2 (15G) (2) 3minutes period (3) 60minutes each X, Y and Z axis	(1)No degradation of electric characteristics after test. (2)No crack at solder joint. (3)No mechanical damage of appearance.	3	0
4	Impact test	(1) 735.0m/s^2 (75G), 12ms (2) Once each X, Y and Z axis	(1)No degradation of electric characteristics after test. (2)No crack at solder joint. (3)No thermal damage of appearance.	3	0
5	Soldering heat test	(1) Soldering iron $340\sim 360^{\circ}\text{C}$, 7.5 seconds (2) Mounting board : $t=1.6\text{mm}$ / FR4	(1)No crack at solder joint. (2)No marked damage of appearance.	1	0
6	Pin solder ability test	(1) Pre-process Step1 Humidifying processing (100°C , 100%, 1H) Step2 Dip into flux (2) Dip soldering $230\sim 240^{\circ}\text{C}$, 2sec	(1)Over 95% of dipped part is covered with solder.	1	0
7	Pin strength test	(1) Weight : 1kg (2) Bending angle : 90 deg., total 180 deg. (3) 1 cycle	(1)No crack at solder joint. (2)No mechanical damage of appearance.	2	0
8	Static electricity immunity test	(1) Applied voltage $\pm 4\text{kV}$ (2) At rated input and load (3) Testing circuitry Fig.1	(1)No protection circuit fail. (2)No output voltage drop due to control (3)No any other function fail.	1	0

○Testing circuitry

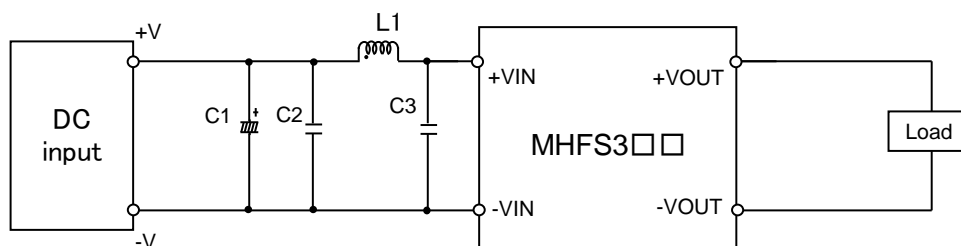


Fig.1 Testing circuitry

C1 :	MHFS312□□	50V 100 μ F Electric capacitor (LXZseries NIPPON CHEMI-CON)
	MHFS324□□	-
	MHFS348□□	-
C2 :	MHFS312□□	25V 10 μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING)
	MHFS324□□	50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MHFS348□□	100V 2.2 μ F Ceramic capacitor (HMK316AC7225KLHTE TAIYO YUDEN)
C3 :	MHFS312□□	25V 10 μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING)
	MHFS324□□	50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MHFS348□□	100V 2.2 μ F Ceramic capacitor (HMK316AC7225KLHTE TAIYO YUDEN)
L1 :	MHFS312□□	1200mA 4.7 μ H Inductor(LQH32PN4R7NNCL MURATA MANUFACTURING)
	MHFS324□□	900mA 10 μ H Inductor(LQH32PN100MNCL MURATA MANUFACTURING)
	MHFS348□□	550mA 22 μ H Inductor(LQH32PN220MNCL MURATA MANUFACTURING)