



MGFS1R5 series Reliability test results

Jan 31, 2017
OS DESIGN DEPT.

Approved : *Takayuki Fukuda*
Takayuki Fukuda
Prepared : *Takaaki Sekiguchi*
Takaaki Sekiguchi

No.	Test Item	Testing conditions	Conditions of acceptability	Number of samples	Number of failures
1	Heat cycle test	(1) -40° C ~ 125° 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) Ta=85°C, RH=85% (2) Input Max.Voltege (3) Load 0% (4) 1000hours	(1)No degradation of electric characteristics after test.	5	0
3	Vibration test	(1) $f=10\sim 55\text{Hz}$, $98.0\text{m/s}^2(10\text{G})$ (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.	6	0
4	Impact test	(1) $490.3\text{m/s}^2(50\text{G})$, 11ms (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 340~360°C, 7.5 seconds (2) Mounting board : t=1.6mm / 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 230~240°C, 2sec	(1)Over 95% of dipped part is covered with solder.	3	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.	1	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

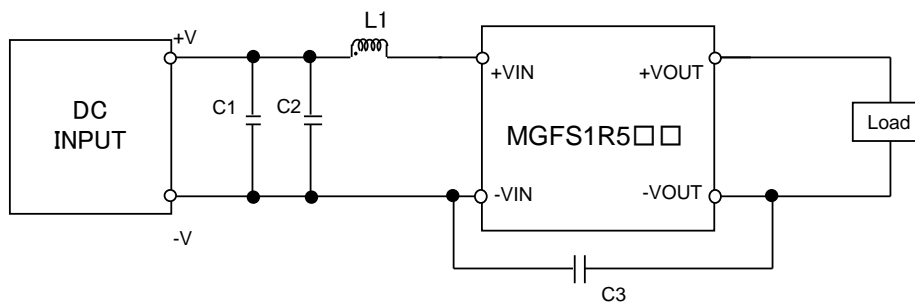


Fig.1 Testing circuitry

C1 :	MGFS1R524□□	50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MGFS1R548□□	100V 2.2 μ F Ceramic capacitor (GRM31CC72A225K MURATA MANUFACTURING)
C2 :	MGFS1R524□□	50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING)
	MGFS1R548□□	100V 2.2 μ F Ceramic capacitor (GRM31CC72A225K MURATA MANUFACTURING)
C3 :	MGFS1R524□□	2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING)
	MGFS1R548□□	2kV 1000pF Ceramic capacitor (GR442QR73D102K MURATA MANUFACTURING)
L1 :	MGFS1R524□□	900mA 10 μ H Inductor (LQH32PN100MNCL MURATA MANUFACTURING)
	MGFS1R548□□	550mA 22 μ H Inductor (LQH32PN220MNCL MURATA MANUFACTURING)