



MGS3 series Reliability test results

Apr 28, 2016
OS DESIGN DEPT.

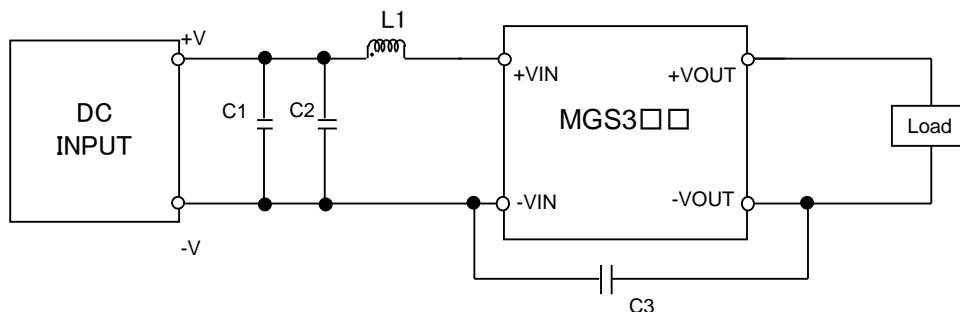
Approved : Takayuki Fukuda
Takayuki Fukuda

Prepared : Satoshi Kinoshita
Satoshi Kinoshita

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=10~55Hz, 98.0m/s ² (10G) (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) 490.3m/s ² (50G), 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 ±4kV (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.	7	0



○ Testing circuitry



- | | | |
|------|----------|--|
| C1 : | MGS305□□ | 16V 22 μ F Ceramic capacitor (GRM31CC71C226K MURATA MANUFACTURING) |
| | MGS312□□ | 25V 10 μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING) |
| | MGS324□□ | 50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING) |
| | MGS348□□ | 100V 2.2 μ F Ceramic capacitor (GRM31CC72A225K MURATA MANUFACTURING) |
| C2 : | MGS305□□ | 16V 22 μ F Ceramic capacitor (GRM31CC71C226K MURATA MANUFACTURING) |
| | MGS312□□ | 25V 10 μ F Ceramic capacitor (GRM31CR71E106K MURATA MANUFACTURING) |
| | MGS324□□ | 50V 4.7 μ F Ceramic capacitor (GRM31CR71H475K MURATA MANUFACTURING) |
| | MGS348□□ | 100V 2.2 μ F Ceramic capacitor (GRM31CC72A225K MURATA MANUFACTURING) |
| C3 : | MGS305□□ | 2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING) |
| | MGS312□□ | 2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING) |
| | MGS324□□ | 2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING) |
| | MGS348□□ | 2kV 470pF Ceramic capacitor (GR442QR73D471K MURATA MANUFACTURING) |
| L1 : | MGS305□□ | 1550mA 3.3 μ H Inductor(LQH32PN3R3NNCL MURATA MANUFACTURING) |
| | MGS312□□ | 1200mA 4.7 μ H Inductor(LQH32PN4R7NNCL MURATA MANUFACTURING) |
| | MGS324□□ | 900mA 10 μ H Inductor(LQH32PN100MNCL MURATA MANUFACTURING) |
| | MGS348□□ | 550mA 22 μ H Inductor(LQH32PN220MNCL MURATA MANUFACTURING) |