


NUMBER GS-12-497	TYPE PRODUCT SPECIFICATION		
TITLE SD CARD CONNECTOR		PAGE 1 of 8	REVISION G
		AUTHORIZED BY Bill Lin	DATE 12/26/09
CLASSIFICATION UNRESTRICTED			

1.0 OBJECTIVE

This specification defines the performance test and quality requirements of SD card reader connector with push-push type.

2.0 SCOPE

This product specification is applied for SD card reader connector, which provides the interconnection between PCB to card.

3.0 GENERAL REQUIREMENTS

3.1 **Drawing** : 10067847

3.2 **Operation and Storage:**

3.2.1 Current Rating: 0.5A.

3.2.2 Voltage Rating : 17V

3.2.3 Operating temperature : -40°C to 105°C

3.2.4 Storage temperature: -40°C to 105°C

3.3 **Material :**

3.3.1 Housing: LCP, GF30, UL94V-0, color: black.

3.3.2 SD Contact: Phosphor Bronze.

3.3.3 WP Contact: Copper Alloy.

3.3.4 CD Contact: Copper Alloy.

3.3.5 Shield : Stainless

3.3.6 Slider Cam: PA9T or LCP


3.3.7 Locking Arm: Stainless

3.3.8 Positioning Pin :Stainless

3.3.9 Spring: SWP-B

3.4 **Finish:**

3.4.1 SD/CD/WP Contact:(a) Contact area: Au plated (or equivalent palladium nickel)

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(b) Solder area: Mate Tin plated

(c) Under plated: Nickel plated overall.

3.4.2 Shield :(a) Solder area: Gold flash plated

(b) Under plated: Nickel plated overall

3.5 Commercial Standard Specification

3.5.1 EIA 364 Test methods for electrical connectors

3.5.2 UL-STD-94 Flammability

3.5.3 ASTM B422-90 High strength copper alloy

3.6 FCI Specifications:

3.6.1 BUS-15-002M Nickel Plating


3.6.2 BUS-15-005 Gold Plating

3.6.3 GES-31-002 Workmanship STD & Insp. Instruction


3.6.4 GS-14-1253 Package Specification

4.0 TEST REQUIREMENTS AND PROCEDURES

TEST DESCRIPTION	REQUIREMENTS	TEST METHOD & CONDITION
Examination of product	Meet requirements of product drawing	Visual inspection No physical damage
ELECTRICAL REQUIREMENTS		
Contact Resistance	100mΩ Max.	20 mV maximum open circuit voltage EIA 364-06
Insulation Resistance	1000M Ω Min.	500V DC. 1 minute, EIA 364-21
Dielectric Withdrawing Voltage Resistance	No creeping discharge or flashes occur Current leakage 1mA Max.	500V AC rms., 1 minute, test between adjacent contacts of unmated sample EIA-364-20
MECHANICAL REQUIREMENTS		
Total ejection and insertion Force	Total ejection Force: 8N Min. Total Insertion Force: 12N Max.	EIA 364-13 speed:25 mm/minute
Vibration	No physical damage	Duration :3 axis, 8 hours per

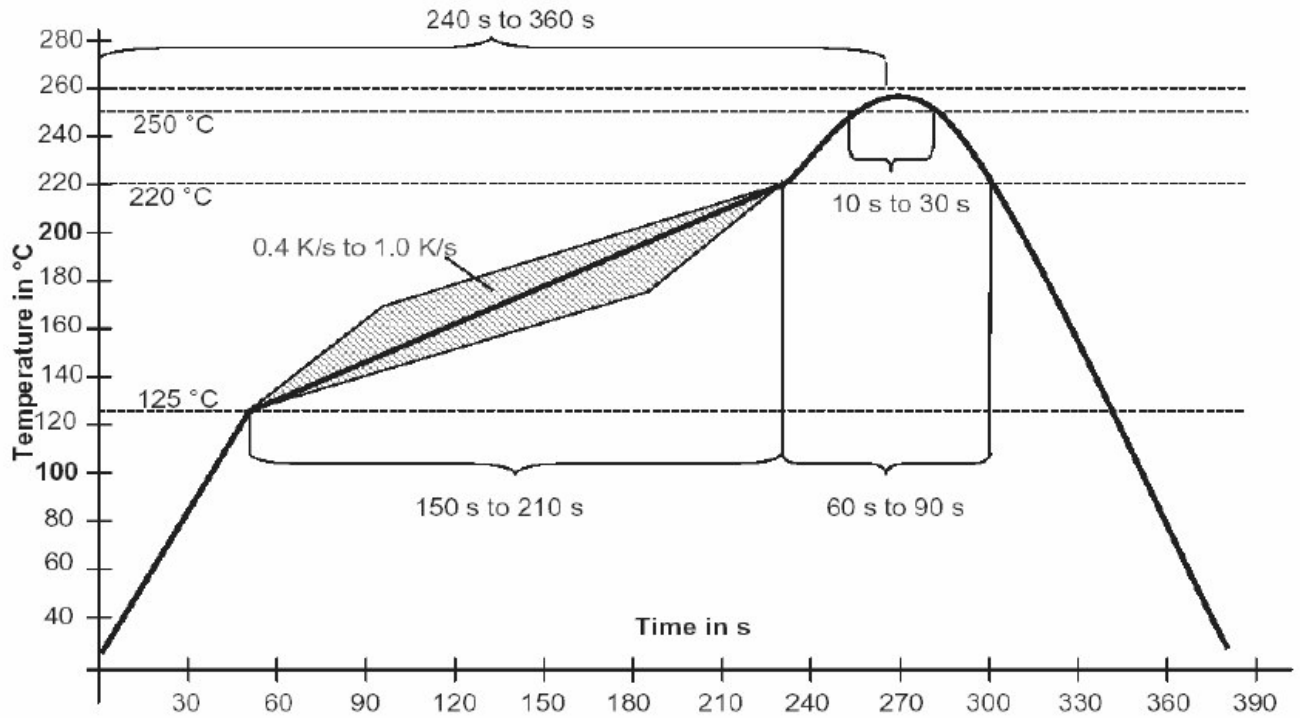
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	Discontinuity:1u sec. max.	spatial axis Frequency:10-1000 Hz – 0.35mm amplitude Acceleration :2G Sweep rate : 1 octave/min.
Shock	No physical damage Discontinuity:1u sec. max.	Shock acceleration 50G Duration of individual shock=6 ms, half-wave sinusoidal No of shocks : 50 shocks per spatial axis
Contact Force	0.2N~0.4N.	
Wrestling (Flapping) Strength	No physical damage	Applied force 10N to SD card for Front direction. (The card should be inserted 15mm into the connector from the head of card)
Durability cycling	No physical damage. Push-push function must be workable.	Operation Cycles: 12,000 cycles, (500 cycles at -40°C; 10500 cycles at 23°C; 1000 cycles at 85°C). Mated and unmated connector with cycles time about 45sec/cycle, see Figure 3.
ENVIRONMENTAL REQUIREMENTS		
Humidity heat cycles	No physical damage	Number of cycles: 6 Relative humidity : 90~100 % Cycle period : 24 hours See FIG 2.
Dust test	No physical damage	With SD CARD mated. Begin dust concentration of 300 g/cm ³ of chamber volume, flow rate =300 m/s and exposure time of 1 hr.
High temperature operation	No physical damage	The test samples shall be soaked at 70c for 2 hours,unpowered
Low temperature operation	No physical damage	The test samples shall be soaked at -30c for 2 hours,unpowered
Salt Spray	No harmful corrosion	Temperature: 35°C±2°C Concentration: 5% Period : 48 hours EIA 364-26
Temperature shock test	No physical damage	Number of cycles: 100 Test cycle: Temp at start of test: room temp; Acclimatization period to 70c: <=10s

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		Condition at 70c : 30 min Acclimatization period to -30c : <= 10s Condition at -30c : 45 min
PHYSICAL		
Solderability	The test area shall be covered more than 95% of immersed area with flash solder.	Solder temperature: 260 +0/-5°C Period: 10±0.5sec Recommended reflow profile: Fig1 (Refer to J-STD-020).

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Preheat	125 °C to 220 °C 150 s to 210 s @ 0.4 K/s to 1.0 K/s
Time at T > 217 °C	60 s to 90 s
Peak temperature	260 °C -5/+0 °C
Peaktime	10 s to 30 s (≥ 250 °C)
Cooling rate	≤ 6 K/s
Time from 25 °C to peak	240 s to 360 s

Figure 1

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Number of Cycles: 6

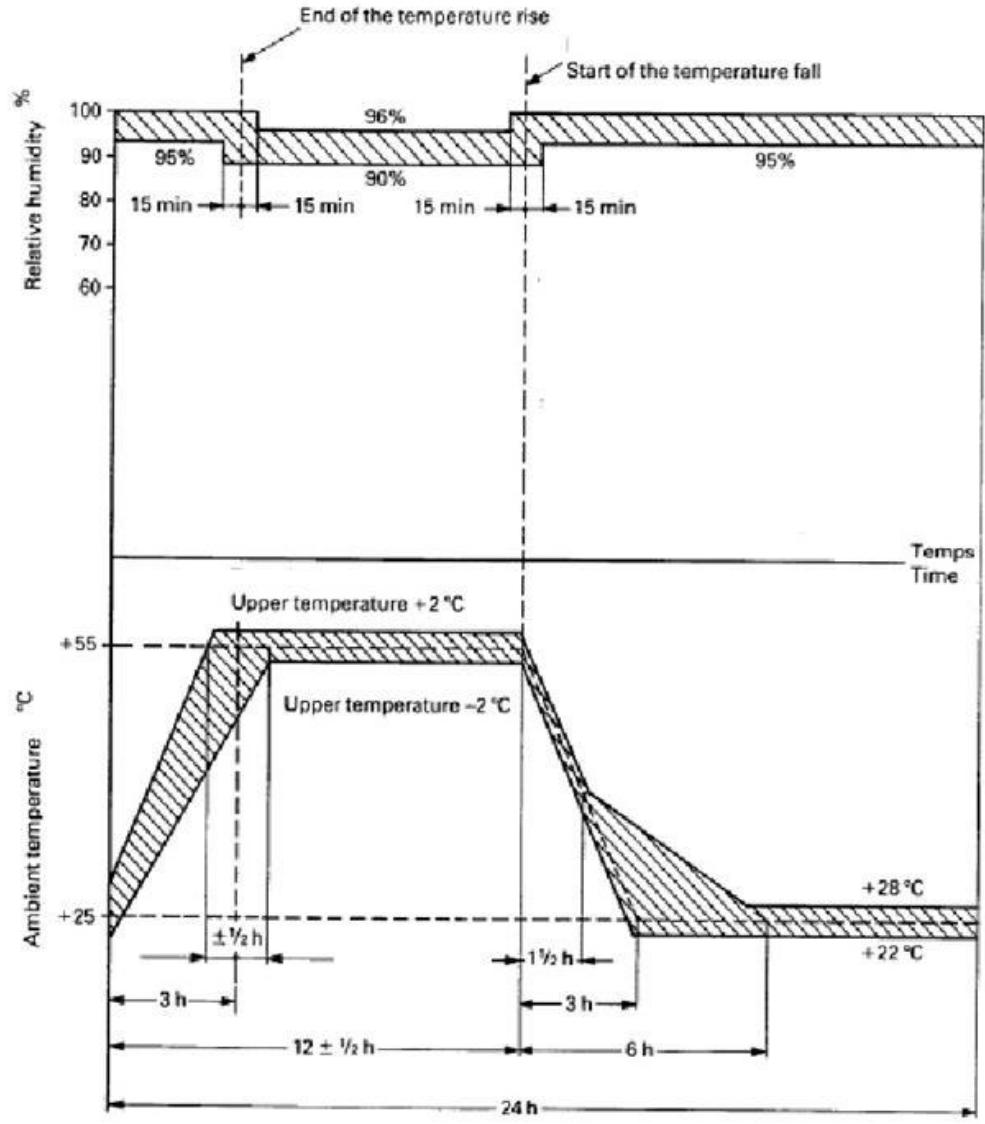


Figure 2

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Test cycle timing

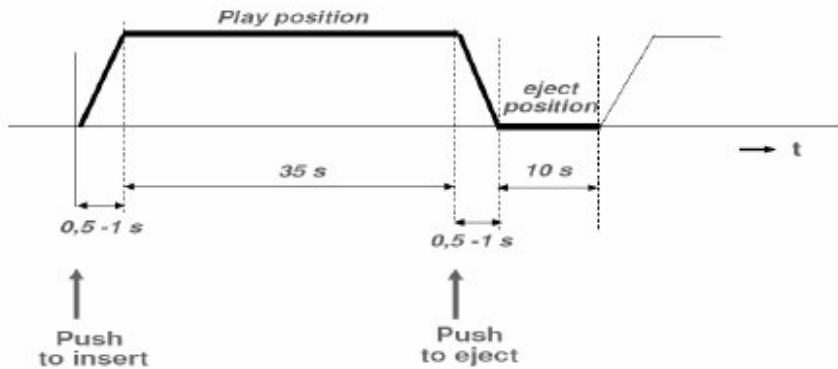



Figure 3

5.0 PRODUCT QUALIFICATION TEST SEQUENCE

Test or Examination	Test Group											
	A	B	C	D	E	F	G	H				
	Test Sequence (a)											
Examination of Product	1,10	1,6	1,7	1,5	1,5	1,9	1	1,3				
Contact Resistance	2,7	2,5	2,6	2,4	2,4	2,6						
Insulation Resistance	3,8					3,7						
Dielectric Withstanding Voltage Resistance	4,9					4,8						
Total Pulling and Insertion Force							3					
Vibration	5											
Physical Shock	6											
Contact Force							2					
Wrestling Strength				3								
Durability Cycling			3									
Humidity heat cycles(6 cycles)		3	5									
Salt Spray					3							
Solderability								2				
Temperature Shock test		4										
High/Low Temperature operation						5						
Dust test			4									

NOTE: Numbers indicated sequence in which tests are performed.

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REVISION RECORDED

<u>REV</u>	<u>PAGE</u>	<u>DESCRIPTION</u>	<u>ECR</u>	<u>DATE</u>
A	ALL	New Release	DG07-0495	12/21/2007
B	1	Change operating temperature (3.2.3)	DG08-0034	02/05/2008
C	1	PA9T has global supply shortage issue	DG08-0141	05/29/2008
D	1, 2	Change storage temperature range; Revise packing spec. No. mistake.	DG08-0185	07/23/2008
E	3, 6	Change durability cycling test method and condition.	DG09-0258	08/10/2009
F	4, 5	Revise reflow profile mistake	DG09-0387	12/14/2009
G	ALL	Change confidential form to unrestricted form	DG09-0403	12/26/2009