【1. SCOPE】

This specification covers the microSD/SIM COMBO MEMORY CARD SOCKET series.

【2. PRODUCT NAME AND PART NUMBER】

Product Name		Part Number
Assembly	8P(m-SD)/8P(SIM)	49448-1611
	8P(m-SD)/6P(SIM)	49448-1411
Embossed Package	8P(m-SD)/8P(SIM)	49448-1611
	8P(m-SD)/6P(SIM)	49448-1411

【3. RATINGS】

Item	Standard		
Rated Voltage (MAX.)	m-SD	10 V	[AC(rms)/ DC]
	SIM	5V	
Rated Current (MAX.)	m-SD	0.5 A	
	SIM		
Ambient temperature Range	-25°C ～ +85°C *1		
Storage temperature Range	-40°C ～ +85°C		
Ambient humidity Range	10% to 80% R.H *2		

*1：Including terminal temperature rise.

*2：Storage area is to be free of dew formation.

【4. PERFORMANCE】

4-1. Electrical Performance

Item		Test Condition	Requirement	
4-1-1	Contact Resistance	Mate dummy card, measure by dry circuit, 20mV MAX., 10mA MAX.	m-SD	100 mΩ MAX.
			SIM	100 mΩ MAX.
4-1-2	Insulation Resistance	Apply 500V DC between adjacent pins or pin and ground. (MIL-STD-202, 302)	1000 MΩ MIN.	
4-1-3	Dielectric Strength	Apply 500V AC for 1 minute between adjacent terminals and ground. (MIL-STD-202 Method 301)	No Breakdown	

*1 The dummy card shows the card for the evaluation made of our company.

4-2. Mechanical Performance

Item		Test Condition			Requirement
4-2-1	Terminal Retention Force	Apply axial pull out force at the speed rate of 25±3 mm / minute.			0.98 N MIN. / PIN {0.1 kgf MIN. / PIN}
4-2-2	Contact Normal force	APPLY A PERPENDICULAR FORCE AT A RATE OF 0.25MM PER MINUTE. -0.25mm~0.55mm deflection- **Refer to the FIG.1 ***		m-SD	16g Min.
				SIM	30g Min
4-2-3	Card Insertion / Withdrawal Force	Push the actually card at the speed rate of 25±3 mm / minute.	m-SD	Lock force	14.7 N MAX. {1.5 kgf MAX.}
			m-SD	Lock release force	14.7 N MAX. {1.5 kgf MAX.}
4-2-4	Push in strength	The actually card is inserted in positive and the opposite direction and the load of 19.6 N {2 kgf} is added.	m-SD	Appearance	No damage
4-2-5	Card Retention Force	Apply axial pull out force at the speed rate of 0.25±3mm/minute)		m-SD	4.9 N MIN. {0.5 kgf MIN.
				SIM	0.59 N MIN. {0.06 kgf MIN.

*2 Actual card is microSD CARD.

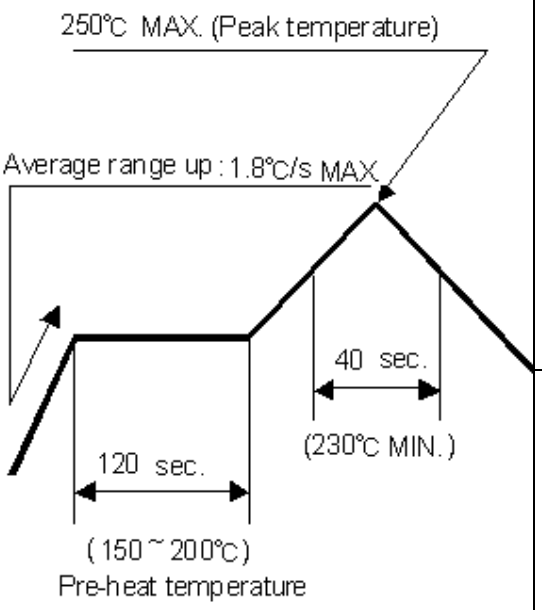
4-3. Environmental Performance and Others

Item		Test Condition	Requirement	
4-3-1	Repeated mate / un-mate (miceoSD)	Insertion and extraction are repeated 10,000 cycles with the actually card at the speed rate of 400 - 600 cycles / hour. At each 1,000cycle, take a rest for 10 minutes after air blow(dry air) for 3 seconds. ** Use to Actual card(SanDISK-microSD CARD)	Contact Resistance	MAX. Change From Initial contact resistance 40mΩ MAX.
			Appearance	No Damage
4-3-2	Repeated mate / un-mate (SIM)	Insertion and extraction are repeated 10,000 cycles with the *actually card at the speed rate of 400 - 600 cycles / hour. ** Use to Actual card is undesignate.	Contact Resistance	MAX. Change From Initial contact resistance 40mΩ MAX.
			Appearance	No Damage
4-3-3	Temperature Rise	Carrying rated current load (UL 498)	Temperature Rise	30 °C MAX.
4-3-4	Vibration	Mate dummy card and subject to the following vibration conditions, for a period of 2 hours in each of 3 mutually perpendicular axes, passing DC 1 mA during the test. Amplitude: 1.52 mm P-P Frequency: 10-55-10 Hz Shall be traversed in 1 minute. (MIL STD-202 Method 201)	Appearance	No Damage
			Contact Resistance	MAX. Change From Initial contact resistance 40mΩ MAX.
			Discontinuity	1.0 microsec. MAX.

Item		Test Condition	Requirement	
4-3-5	Shock	Mate dummy card and subject to the following shock conditions. 3 shocks shall be applied along 3 mutually perpendicular axes, passing DC 1mA current during the test. (Total of 18 Shocks) Test pulse: Half Sine Peak value: 490m / s^2 Duration: 11 ms (MIL-STD-202 Method 213)	Appearance	No Damage
			Contact Resistance	MAX. Change From Initial contact resistance 40mΩ MAX.
			Discontinuity	1.0 microsec. MAX.
4-3-6	Moisture resistance	Mate dummy card and subject to the conditions specified on per. [6] for 9 cycles. The test specimens shall be exposed to STEP 7a during only 5 out of 9 cycles. A 10th cycles consisting of only step 1 through 6 is then performed, after which the test specimens shall be conditioned at ambient room conditions of 24 hours. (MIL-STD-202 Method 106)	Appearance	No Damage
			Contact Resistance	MAX. Change From Initial contact resistance 40mΩ MAX.
			Dielectric Strength	Must meet 4-1-3
			Insulation Resistance	100 MΩ MIN.
4-3-7	Temperature cycling	Mate dummy card and subject to the following conditions for 5 cycles. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. 1 cycle a) -55±3°C・・・30 minutes b) +85±2°C・・・30 minutes Transit time shall be within 3 minutes.	Appearance	No Damage
			Contact Resistance	MAX. Change From Initial contact resistance 40mΩ MAX.

Item		Test Condition	Requirement	
4-3-8	Heat Resistance	Mate dummy card and exposed to 85±2°C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditions at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. (MIL-STD-202 Method 108)	Appearance	No Damage
			Contact Resistance	MAX. Change From Initial contact resistance 40mΩ MAX.
4-3-9	Cold Resistance	Mate dummy card and exposed to -40±2°C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditions at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed.	Appearance	No Damage
			Contact Resistance	MAX. Change From Initial contact resistance 40mΩ MAX.
4-3-10	SO_2 Gas	Mate dummy card and expose to 50±5 ppm SO_2 gas, ambient temperature 40±2°C, relative humidity 75% for 24 hours.	Appearance	No Damage
			Contact Resistance	MAX. Change From Initial contact resistance 40mΩ MAX.

Item		Test Condition	Requirement	
4-3-11	Salt Spray	Mate dummy card and exposed to the following salt mist conditions. Upon completion of the exposure period, salt deposits shall be removed by a gentle wash or dip in running water, after which the specified measurements shall be performed. NaCl solution Concentration: 5±1% Spray time: 48 hours Ambient temperature: 35±2°C (MIL-STD-1344)	Appearance	No Damage
			Contact Resistance	MAX. Change From Initial contact resistance 40mΩ MAX.
4-3-12	Solderability	Dip solder tails into the molten solder (held at 230±5°C) up to 0.5mm from the tip of tails for 3±0.5 sec.	Solder Wetting	95% of immersed area must show no voids, Pinholes

Item		Test Condition	Requirement	
4-3-13	Resistance to soldering heat	 Infrared reflow condition TEMPERATURE CONDITION GRAPH (TEMPERATURE ON BOARD PATTERN SIDE)	Appearance	No Damage after 2 times of reflow
			Coplanarity	0.1Max (Before & After 2 times of reflow)

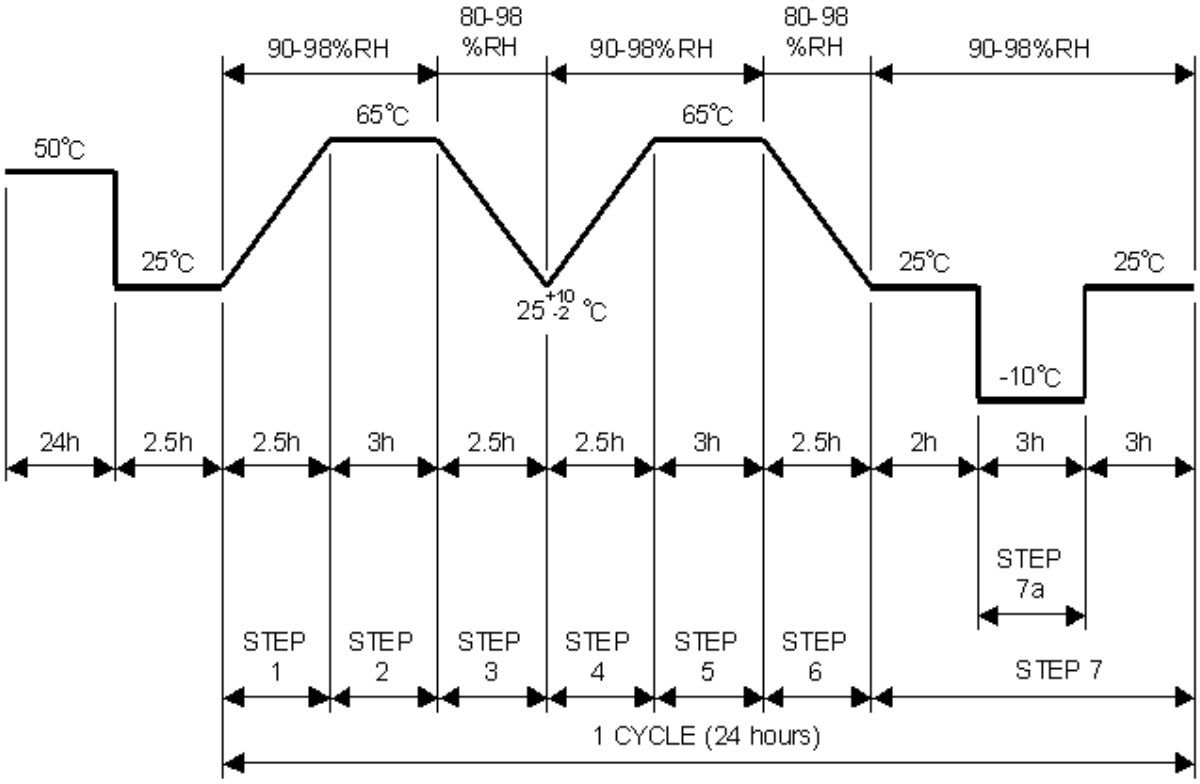
( ) :Reference Standard

【5. PRODUCT SHAPE, DIMENSIONS AND MATERIALS】

Refer to the drawing.

【6. Moisture resistance conditions 】

MIL-STD-202 - 106
MIL-STD-202 - 106



【7. APPLICATION NOTES 】

7-1. Card Omission Prevention

The microSD card is dropped while having engaged or the impact is added and the card comes off to this item though a simple lock for the card omission prevention is installed in the slider cam.
Therefore, please set up the lid for the card omission prevention etc. in the enclosure.
In that case, please adjust the spaces such as cards and lids in the state of the card lock to 0.3 mm or less.

7-2. Washing After Soldering

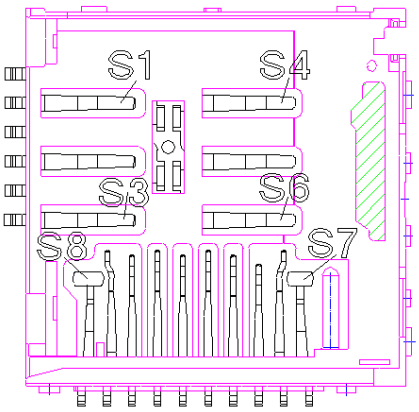
Please wash only the soldering part partially when washing after this item is soldered.
When a whole soaking etc. are washed, the insertion and extraction of the card might become difficult.

7-3. Card Ejection

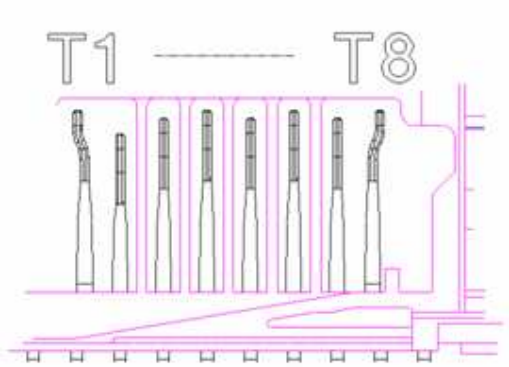
Please use caution when ejecting the microSD card from the connector. When pushing the card in to remove it from the connector slot, the spring force could cause the card to pop out and project from the connector if finger is to slip or card is removed improperly.

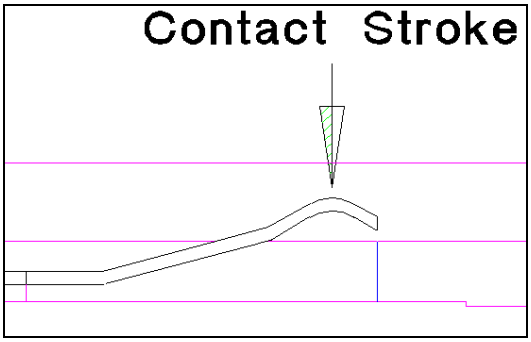
8. Contact Normal Force

[SIM Contact Position]



[microSD Contact Position]





	Contact Stroke	
S1, S2, S3	0.45	Min.
S4, S5, S6	0.35	Min.
S7, S8	0.35	Min.
T1 ~ T8	0.35	Min.

*** FIG 1 ***

molex	PRODUCT SPECIFICATION	molex	LANGUAGE
			ENGLISH

REV.	REV. RECORD	DATE	EC NO.	WRTTN:	CH'K:
0	PRE-RELEASED	’06/04/04	KOR2006-	E.S.JUNG	S.J.SEH
1	REVISED	’06/11/09	KOR2007-	S.H.JOO	S.J.SEH
2	REVISED	’06/11/13	KOR2007-	S.H.JOO	S.J.SEH
3	REVISED	’06/11/13	KOR2007-	S.H.JOO	S.J.SEH
4	REVISED	’06/11/14	KOR2007-	S.H.JOO	S.J.SEH
5	REVISED	’08/05/29	KOR2008-	S.H.JOO	S.J.SEH
A	REVISED	’09/04/23	KOR2009-	S.H.JOO	Y.SOO.KIM
B	REVISED	’11/07/12	KOR2012-0006	I.H.YOU	Y.SOO.KIM

REVISE ON PC ONLY		TITLE: microSD/SIM COMBO MEMORY CARD SOCKET PRODUCT SPECIFICATION
B	SEE SHEET 1 OF 10	
REV.	DESCRIPTION	

DOCUMENT NUMBER		FILE NAME	SHEET
PS-49448-001		PS49448001.doc	10 OF10