### **ELECTRONICS CO., LTD,**

### **SPECIFICATION**

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 S JACK
 KM09005
 DATE: 2008.07.09

#### **SPECIFICATION**

#### 1. Standard atmospheric condition:

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows:

Ambient temperature:  $15^{\circ}$ C to  $35^{\circ}$ C Relative Humidity : 45% to 85%

Air pressure : 86kPa to 106kPa

If there is any doubt about the results, measurements shall be made within the following limits:

Ambient temperature:  $20 \pm 2^{\circ}\mathbb{C}$ Relative Humidity : 60% to 70%Air pressure : 86kPa to 106kPa

Storage Temperature Range:  $-20^{\circ}$ C to  $70^{\circ}$ C Operating Temperature Range:  $-10^{\circ}$ C to  $60^{\circ}$ C

ISSUE	DATE	WRTN	CHKD	APVD	DESCRIPTIONS
	2008.07.09	PATRICK	JOHNSON	Dick	

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#### 2. Electrical characteristics

	Item	Condition	Specifications
	Rated voltage/		AC 100V 1A
1	Rated current		or
	Rated Current		DC 12V 2A MAX.
2	Dielectric strength	Conductors which should not make contact under normal conditions.  250V AC r.m.s (50 to 60Hz) for 1 minute.  (trip current: 2mA)	Without breakdown
3	Insulation resistance	A voltage of 250V DC shall be applied for one minute. Conductors which should not make contact under normal conditions after which measurement shall be made.	50MΩ MIN.
4	Contact	Measurement shall be made at 1000Hz with small current: 50mA	
	resistance	Pin—Contact	$30$ m $\Omega$ MAX.
		Plug cover—Socket	$50 \mathrm{m}\Omega$ MAX.

#### 3. Mechanical characteristics

	Item Condition		Specifications
		Insertion force	44.1N (4.5kgf) MAX
1	Operating force	Withdrawal force	$8.82N\sim29.4N (0.9\sim3kgf)$
12	_	Contact shall withstand a steady strength pull of 2kg in the direction of contact breakout for 20 seconds.	Without parting
3		Every terminal shall be capable of withstand a force of 9.8N (1kgf)	Without loosing and breakdown, but deformation of terminal is authorized.

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#### 4. Endurance characteristics

Item   Condition   Specifications	l		4. Endurance characteristics							
The S-Jack shall be subject to 1,000 cycles, at the rate electrical and mechanical characteristics shall be satisfied.  Pin—Contact  Plug cover—Socket  The S-Jack shall be stored at 90% $\sim$ 95% RH, 40°C±3 °C for 96 hours. Then shall be maintained at room ambient conditions for a period of 1 $\sim$ 2 hours.  Pin—Contact  Pin—Contact  Pin—Contact  Pin—Contact  Pin—Contact  Pin—Contact  Pin—Contact  Plug cover—Socket  Plug cover—Socket  Plug cover—Socket  Plug cover—Socket  Plug cover—Socket  Pin—Contact  Plug cover—Socket  Pin—Contact  Pin			Item	Specifications						
Operating endurance $\frac{1}{2}$ of $10\sim20$ cycles per minute. $\frac{1}{2}$ characteristics shall be satisfied. $\frac{1}{2}$					• '					
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$										
endurance $\frac{\text{Pin-Contact}}{\text{Pin-Contact}} = \frac{80 \text{m} \Omega \text{ MAX.}}{80 \text{m} \Omega \text{ MAX.}}$ $\frac{\text{Plug cover-Socket}}{\text{Plug cover-Socket}} = \frac{100 \text{m} \Omega \text{ MAX.}}{100 \text{m} \Omega \text{ MAX.}}$ $\frac{\text{The S-Jack shall be stored at } 90\% \sim 95\% \text{ RH, } 40^{\circ}\text{C} \pm 3}{\text{Contact}} = \frac{100 \text{m} \Omega \text{ MAX.}}{\text{Dimensional requirements, electrical and mechanical characteristics shall be satisfied.}}$ $\frac{\text{Pin-Contact}}{\text{Pin-Contact}} = \frac{80 \text{m} \Omega \text{ MAX.}}{100 \text{m} \Omega \text{ MAX.}}$ $\frac{\text{Plug cover-Socket}}{100 \text{m} \Omega \text{ MAX.}} = \frac{100 \text{m} \Omega \text{ MAX.}}{100 \text{m} \Omega \text{ MAX.}}$ $\frac{\text{The S-Jack shall be stored at a temperature of } 70 \pm 3^{\circ}\text{C}}{100 \text{m} \Omega \text{ MIN.}} = \frac{100 \text{m} \Omega \text{ MAX.}}{100 \text{m} \Omega \text{ MAX.}}$ $\frac{\text{Plug cover-Socket}}{100 \text{m} \Omega \text{ MAX.}} = \frac{100 \text{m} \Omega \text{ MAX.}}{100 \text{m} \Omega \text{ MAX.}}$ $\frac{\text{Plug cover-Socket}}{100 \text{m} \Omega \text{ MAX.}} = \frac{100 \text{m} \Omega \text{ MAX.}}{100 \text{m} \Omega \text{ MAX.}}$ $\frac{\text{Plug cover-Socket}}{100 \text{m} \Omega \text{ MAX.}} = \frac{100 \text{m} \Omega \text{ MAX.}}{100 \text{m} \Omega \text{ MAX.}}$ $\frac{\text{Plug cover-Socket}}{100 \text{m} \Omega \text{ MAX.}} = \frac{100 \text{m} \Omega \text{ MAX.}}{100 \text{m} \Omega \text{ MIN.}}$		1	Operating	of $10\sim20$ cycles per minute.	characteristics shall be					
Plug cover—Socket  The S-Jack shall be stored at 90% ~95% RH, 40°C±3 Dimensional requirements, °C for 96 hours. Then shall be maintained at room electrical and mechanical ambient conditions for a period of 1~2 hours.  Pin—Contact  Plug cover—Socket  Plug cover—Socket  100mΩ MAX.  Plug cover—Socket  100mΩ MAX.  Plug cover—Socket  100mΩ MAX.  Electrical and mechanical characteristics shall be satisfied.  The S-Jack shall be stored at a temperature of 70±3°C Electrical and mechanical for 96 hours, Then the jack shall be maintained at room characteristic shall be ambient conditions for 1~2 hours.  Pin—Contact  Pin—Contact  Pin—Contact  Pin—Contact  200mΩ MAX.  Plug cover—Socket  500mΩ MAX.  Insulation resistance		1	endurance		satisfied.					
The S-Jack shall be stored at 90% $\sim$ 95% RH, 40°C±3 Dimensional requirements, °C for 96 hours. Then shall be maintained at room ambient conditions for a period of 1 $\sim$ 2 hours.  Pin—Contact  Pin—Contact  Plug cover—Socket  Insulation resistance  The S-Jack shall be stored at a temperature of $70\pm3$ °C Electrical and mechanical for 96 hours, Then the jack shall be maintained at room ambient conditions for $1\sim2$ hours.  Dry heat  Pin—Contact  Pin				Pin—Contact	$80 \text{m} \Omega \text{ MAX}.$					
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				Plug cover—Socket	$100$ m $\Omega$ MAX.					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				The S-Jack shall be stored at 90% $\sim$ 95% RH, 40°C±3	Dimensional requirements,					
$ \begin{array}{ c c c c c c } \hline 2 & Humidity test & satisfied. \\ \hline & Pin-Contact & 80m\Omega & MAX. \\ \hline & Plug cover-Socket & 100m\Omega & MAX. \\ \hline & Insulation resistance & 1M\Omega & MIN. \\ \hline & The S-Jack shall be stored at a temperature of 70\pm3^{\circ}C Electrical and mechanical for 96 hours, Then the jack shall be maintained at room characteristic shall be ambient conditions for 1\sim2 hours.  \hline & Pin-Contact & 200m\Omega & MAX. \\ \hline & Plug cover-Socket & 500m\Omega & MAX. \\ \hline & Insulation resistance & 10M\Omega & MIN. \\ \hline \end{array} $				°C for 96 hours. Then shall be maintained at room	electrical and mechanical					
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				ambient conditions for a period of $1 \sim 2$ hours.	characteristics shall be					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		2	Humidity test		satisfied.					
Insulation resistance $1M\Omega$ MIN.  The S-Jack shall be stored at a temperature of $70\pm3^{\circ}$ C Electrical and mechanical for 96 hours, Then the jack shall be maintained at room characteristic shall be ambient conditions for $1\sim2$ hours.  Pin—Contact $200m\Omega$ MAX.  Plug cover—Socket $500m\Omega$ MAX.  Insulation resistance $10M\Omega$ MIN.				Pin—Contact	$80$ m $\Omega$ MAX.					
The S-Jack shall be stored at a temperature of $70\pm3^{\circ}$ C Electrical and mechanical for 96 hours, Then the jack shall be maintained at room characteristic shall be ambient conditions for $1\sim2$ hours.  Pin—Contact  Plug cover—Socket  Soom $\Omega$ MAX.  Insulation resistance  The S-Jack shall be stored at a temperature of $70\pm3^{\circ}$ C Electrical and mechanical characteristic shall be satisfied.  Pin—Contact  10M $\Omega$ MIN.				Plug cover—Socket	$100$ m $\Omega$ MAX.					
$\begin{array}{c} \text{ Tor 96 hours, Then the jack shall be maintained at room characteristic shall be ambient conditions for $1\sim2$ hours.} \\ \text{ Pin-Contact } & 200\text{m}\Omega \text{ MAX.} \\ \text{ Plug cover-Socket } & 500\text{m}\Omega \text{ MAX.} \\ \text{ Insulation resistance } & 10\text{M}\Omega \text{ MIN.} \\ \end{array}$				Insulation resistance	$1M\Omega$ MIN.					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				The S-Jack shall be stored at a temperature of 70±3°C	Electrical and mechanical					
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				for 96 hours, Then the jack shall be maintained at room	characteristic shall be					
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		2			satisfied.					
Insulation resistance $10 \text{M}\Omega$ MIN.		3	Dry heat	Pin—Contact	$200 \text{m} \Omega$ MAX.					
				Plug cover—Socket	$500$ m $\Omega$ MAX.					
Temperature of solder: 250°C±5°C  The soldered area shall be				Insulation resistance	$10M\Omega$ MIN.					
The solution and shall be				Temperature of solder : 250°C±5°C	The soldered area shall be					
4 Soldering test Time of dip: 3±0.5 seconds covered a minimum of 90% of		4	Soldering test	Time of dip: 3±0.5 seconds	covered a minimum of 90% of					
Length of dip: 2±0.5mm (from top of terminal) the surface being immersed.				Length of dip: 2±0.5mm (from top of terminal)	the surface being immersed.					

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	Item	C	Condition		Specifications		
		Wave soldering Process					
		D CI E	Pb-Free A	Assembly			
		Profile Feature	Topside PCB   Padside PCB				
		Preheat -Temperature min -Temperature max -Time (ts min to max)	120°C (Ts1 max)	110°C (Ts min) 150°C (Ts max) 75 sec	Electrical and mechanical characteristics shall be satisfied,		
		Peak/Classification	165°C	260°C ±5°C	and not show remarkable		
		Temperature Time within 5°C of	(Tp <sub>1</sub> )	(Tp) 10 sec (within	failure.		
		actual Temperature (tp)		2 times every time 2-3 sec)			
		Time 25°C to Peak		3 minutes max			
		temperature  Waya Saldaring Temperatura Profile are as below			tp		
5	Resistance to Soldering Heat	Wave Soldering Temperature Profile are as below  Temperature					
	Test	Ts max Ts min			Tp1 max TS1 max		
		0		Time			
		Topside PCB					
			—— Pad				
		Soldering Iron Test Temperature of soldering Soldering time: 3±1 se	_	Same as Wave soldering Process			
			ertion force		44.1N (4.5kgf) MAX.		
			drawal force	8.82N~29.4N (0.9~3kgf)			

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**PAGE**: **TITLE** SPC. NO. 5 OF DATE: 2008.07.09 S JACK KM09005 5. Standard plug 1.2±0.05  $1.9^{+0.1}_{-0.05}$ R / /\*<sub>0.3</sub> R  $0.4 \pm 0.05$ 1.6±0.05  $4.875 \pm 0.1$  $0.6^{+0}_{-0.03}$ RO.2 ±0.1 6±0.15 MAX Ø12.5

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#### 6. Test Group

	Test Group							
Test of Examination	A	В	C	D	Е	F	G	
	Test Sequence							
Examination of product	1	1	1	1	1	1	1	
2-2 Dielectric strength			2,7	2,7	2,7			
2-3 Insulation resistance			3,8	3,8	3,8			
2-4 Contact resistance			4,,9	4,,9	4,,9			
3-1 Operating force			5,10	5,10	5,10			
3-2 Contact pull strength	2							
3-3 Terminal strength		2						
4-1 Operating endurance			6					
4-2 Humidity test				6				
4-3 Dry heat					6			
4-4 Soldering test						2		
4-5 Resistance to Soldering Heat Test							2	

<sup>\*</sup>Test sample :  $2 \sim 4 \text{ pcs} / \text{group}$