



**GRAD CONN LTD.**

**格瑞康實業有限公司**

No. 321 Shuanlian St., Longtan Township, Taoyuan County 32557, Taiwan

TEL: +886-3-4993132 FAX: +886-3-4991561 <http://www.gradconn.com>

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## **PRODUCT SPECIFICATION**

**Grad Conn Part No.:** CH03-AA

**Product Description:** SIM Card Holder SMT Type



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## Specification

### 1. General Characteristics

- .Contact Principle: Friction Technology
- .Mounting type: SMT
- .Durability: 10,000 Cycles Min.

### 2. Material

- .Data Contacts Material: Phosphor Bronze
- .Data Contacts Plating: Gold Or Pd Over Nickel
- .Insulation Material: Thermoplastic, UL 94V-0

### 3. Electrical Characteristic

- .Contact Detecting Switch State: Normally Open
- .Current Rating: 0.5A Max.
- .Dielectric Withstanding Voltage: 500V AC R.M.S For 1 Minute
- .Contact Resistance: 50 Milliohms Max.
- .Insulator Resistance: >1000Megohms/500VDC

### 4. Mechanical Characteristics

- .Data Contact's Contact Force: 0.2N~0.6N
- .Card Insert/Withdraw Force: 3N/1.5N Max.
- .Contact Retention Force: 0.3kg Min.

### 5. Solderability

- .Vapor Phase: 215°C, 30 Sec. Max.
- .IR Re-flow: 260°C, 15 Sec. Max.
- .Manual Soldering: 360°C, 3 Sec. Max.

### 6. Environmental Characteristics

- .Operating Temperature: -40°C~+85°C
- .Operation Humidity: 10%~95%
- .Thermal Shock: -40°C~+85°C, 5 Cycles
- .Damp Heat: 40°C, 90%RH, 500 Hours
- .Salt-mist: 35°C, 5%, NaCl, 48 Hours
- .RoHS Compliant

### 7. Pin Out Information

Contact No.	Assignment	Description	Remark
C1	VCC	Power Voltage	
C2	RST	Reset Signal	
C3	CLK	Clocking Dignal	
C4	.....	Reserved for future use	Optional
C5	GND	Power and Signal Ground	
C6	VPP	Programming Voltage	
C7	I/O	Serial Data input/output	
C8	.....	Reserved for future use	Optional

## Testing Standard

### 1.Electrical Performance

Item	Requirement	Definition	Test condition	Test Procedure	Equipment
Contact resistance	50mΩ max.per contact	Connection between contact of IC card and connector		IEC-512-2-2a	Micro Ohms tester
Insulation resistance	1000MΩ Min.	Performance of insulation between contacts.	500V DC for 1 minuty between adjacent and ground.	IEC-512-2-3a	Insulation Resistance tester
Dielectric withstand voltage	500V AC 1Min.	Dielectric withstand voltage tester	No Break Down		Dielectric withstand voltage tester

### 2.Mechanical Performance

Item	Requirement	Test condition	Test Procedure	Equipment
Vibration	1.No discontinuity when detected 1 μ second. 2.No damage.	10-500Hz 10G 2hr in each perpendicular planes.	IEC-512-4-6d	Vibration tester.
Temperature shock	1.No damage. 2.Contact resistance change <20mΩ.	One cycle consists of: -40°C for 30 minutes, +85°C for 30 minutes. Times of cycle: 5 cycles.		Temperature chamber. Micro Ohms Tester
Damp heat	1.No damage. 2.Contact resistance change <20mΩ .	40°C 90% RH 500 hours	IEC-68-2-3	Damp heat machine. Micro Ohms Tester
Durability	1.Contact resistance<100mΩ 2.Normal contact force OK	10,000cycles of rate 10 cycles to 1 minute.	As per procedure of aging maching.	Durability machine.
Data contact's contact force	0.2N~0.6N		EMV (Ver.3.1.1 and 4.0) ISO 7816	Weight tester
Contact retention force	0.3kg Min.			Force tester
Card insert/withdraw force	3N/1.5N Max.			Insert & withdraw force tester

### 3.Solder ability

Item	Requirement	Definition	Test condition	Test Procedure	Equipment
Solderability	The surface shall be covered with enough solder.	Vapor phase	215°C, 30 Sec. Max.	IEC-68-2-20	Vapor Phase soldering tester
		IR Re-flow	260°C, 15 Sec. Max.		IR Re-Flow soldering Tester
		Manual soldering	360°C, 3 Sec. Max.		Soldering Iron

Component - Plastics

E41938

**E I DUPONT DE NEMOURS & CO INC**

ENGINEERING POLYMERS, CHESTNUT RUN PLAZA, PO BOX 80713, WILMINGTON DE 19880

**6130L(m)**

Liquid Crystal Polymer (LCP), "ZENITE", furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
BK	0.38	V-0	-	-	240	130	130
	0.75	V-0	3	4	240	220	240
WT	1.0	V-0	3	4	240	220	240
ALL	1.5	V-0	1	4	240	220	240
	3.0	V-0	0	4	240	220	240

Comparative Tracking Index (CTI): 3

Dimensional Stability (%): -

High-Voltage Arc Tracking Rate (HVTR): 4

High Volt, Low Current Arc Resis (D495): -

Dielectric Strength (kV/mm): 21

Volume Resistivity (10<sup>x</sup> ohm-cm): -

(m) - Virgin and regrind up to 50% have the same basic characteristics except for the Electrical RTI rating below the 0.75 mm thickness.

NOTE - (1) Material designations that are color pigmented may be followed by suffix letters and numbers. (2) Material designations may be prefixed by "ZYT" or "MIN" or "ZEN" or "DEL" or "CRA" or "RYN".

UL94 small-scale test data does not pertain to building materials, furnishings and related contents. UL94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by ULL.

Report Date: 1989-10-11

Last Revised: 2004-03-09

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**IEC and ISO Test Methods**

Test Name	Test Method	Units	Thickness Tested (mm)	Value
IEC Flammability	IEC 60695-11-10	Class (color)	0.38	V-0 (BK)
			0.75	V-0 (BK)
			1.0	V-0 (WT)
			1.5	V-0 (ALL)
			3.0	V-0 (ALL)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	0.75	960
			1.0	960
			1.5	960
			3.0	960
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	0.75	850
			1.0	825
			1.5	825
			3.0	875
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	C	-	-
ISO Heat Deflection (1.80 MPa)	ISO 75-2	C	-	-
ISO Tensile Strength	ISO 527-2	MPa	-	-
ISO Flexural Strength	ISO 178	MPa	-	-
ISO Tensile Impact	ISO 8256	kJ/m <sup>2</sup>	-	-
ISO Izod Impact	ISO 180	kJ/m <sup>2</sup>	-	-
ISO Charpy Impact	ISO 179-2	kJ/m <sup>2</sup>	-	-

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The materials covered in this database are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. THE FINAL ACCEPTANCE OF THE COMPONENT IS DEPENDENT UPON ITS INSTALLATION AND USE IN COMPLETE PRODUCTS SUBMITTED TO UNDERWRITERS LABORATORIES INC.

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