REV	COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE	REV	COUNT	DESCRIPTION OF REVISIONS	BY	CHKD	DATE
1	–	Revised	KYG	LHJ	21.08.30	3	1	RE-2-2139	PYB	LHJ	23.02.07
2	–	Revised	KYI	LHJ	21.12.16	4	4	RE-2-2437	OSW	LHJ	23.10.24

APPLICABLE STANDARD		Universal Serial Bus Type-C Cable and Connector Specification Release 2.1 Universal Serial Bus Type-C Connectors and Cable Assemblies Compliance Document Revision 2.1b
RATING	CURRENT	1.50A max. for each power pin (i.e. A1, A4, A9, A12, B1, B4, B9, B12) 1.25A max. for VCON(i.e. B5), 0.25A for the other pins
	VOLTAGE	48V AC/DC
OPERATING CONDITION		-40℃ ~ +105℃ (Including Temp. rise), 95% RH Max. (Non-condensing)
STORAGE CONDITION		-10℃ ~ +60℃ (With packing), 15% ~ 70% RH

Para.	Test Description	Test Procedure	Test Requirement	QT	AT
1	Examination of product	EIA 364-18 Visual inspection	No physical damage.	O	O
Electrical Requirements					
2	Low Level Contact Resistance	EIA 364-23 Measure at 20mV max open circuit at 100mA max. (DC or 1000Hz) 4-wire measurement is required and the resistance of PCB termination shall be deducted from the reading.	Initial : 40mΩ max After test : 50mΩ max	O	–
3	Dielectric Withstanding Voltage	EIA 364-20 Measure per Method B with unmated condition. 100V AC RMS for 1 minute at sea level.	No disruptive discharge.	O	–
4	Insulation Resistance	EIA 364-21 500V DC with unmated and mated condition.	100MΩ min.	O	–
Mechanical Requirements					
5	Insertion force	EIA 364-13 Measure at 12.5mm/minute min.	Initial : 5N ~ 20N After test : 5N ~ 20N (with virgin plug)	O	–
6	Extraction force	EIA 364-13 Measure at 12.5mm/minute min.	Initial : 8N ~ 20N After test : 6N ~ 20N (with virgin plug)	O	–
7	Durability	EIA 364-09 Mated 10,000 times Mechanically operated : 500cycles/hr Mating stroke : 2.75mm Insertion, extraction force shall be measured at a maximum speed of 12.5mm/min	No physical damage.	O	–
8	Random Vibration	EIA 364-28 Test Condition VII, Test Letter D Mated specimens to 3.10 G's RMS between 20 to 500Hz 15 minutes in each of 3 mutually perpendicular planes.	No physical damage. No discontinuity of 1μs of longer duration when mated connector during test.	O	–

REMARKS	DRAFT	DESIGN	CHECK	APPROVAL	RELEASE
	Y.B.PARK 21.08.05	Y.B.PARK 21.08.05	H.J.LEE 21.08.05	H.J.LEE 21.08.05	DEPT 23.10.24 ENG

NOTE) QT : QUALIFICATION TEST, AT : ASSURANCE TEST, O : Applicable Test

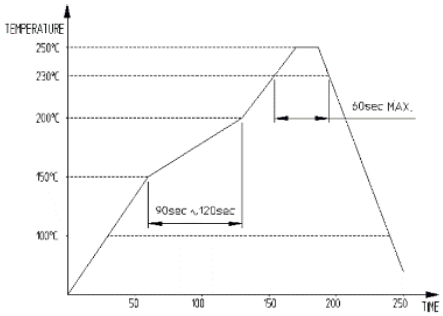
DWG NO	CL NO	PART NO
ELC4-633145-00	CL 6249-0002-9-000	CX90MW6-16P

HRS HIROSE KOREA.CO.,LTD	PRODUCT SPECIFICATION	1 / 3

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Para.	Test Description	Test Procedure	Test Requirement	QT	AT
Environmental Requirements					
9	Temperature Life	EIA 364-17, Method A 105℃ without applied voltage for 120 hours.	No physical damage.	O	-
10	Cyclic Temperature and Humidity	EIA 364-31 25±3°C at 80±3% RH for 1 hour. 65±3°C at 50±3% RH for 1 hour. Thermal ramp : 0.5 hour Number of cycles : 24 cycles	No physical damage.	O	-
11	Thermal Shock	EIA 364-32 10 cycles -55°C and +105°C	No physical damage.	O	-
12	Solderability	EIA 364-52 Dwell in 245±5℃ of the solder bath for 5 sec.	Solder coverage shall be 95% min. of the immersed surfaces.	O	-
13	Salt Spray	EIA 364-26 5% of NaCl in 35℃ for 48 hours.	No corrosions that affect to the connector operation.	O	-
14	Co-Planarity	Measure Co-planarity of each contact lead.	0.08 Max before reflow. 0.10 Max after reflow 2times.	O	-
15	④ High Temperature and Humidity	EIA-364-31 High-temperature 85℃/85% RH for 120 hours.	No physical damage. No change to performance.	O	-
16	IPX8	IEC 60529 Immersion in the water at the depth of 1.5m for 30min.	No water leakage.	O	-
17	④ IP6X	IEC 60529 Duration : 8hours at least. Amount of talcum powder of the test chamber : 2 kg/m^3 Dust type : Talcum Powder (less than 75㎛)	No ingress of dust	O	-
18	Temperature Rise	IEC60529, EIA-364-70, method B : A current of 6.0 A shall be applied collectively to VBUS pins (i.e., pins A4, A9, B4, and B9) and 1.5 A applied to the Vconn pin (i.e., B5 of the plug connector) with the return path through the corresponding GND pins (i.e., pins A1, A12, B1, and B12). A minimum current of 0.25 A shall also be applied individually to all the other contacts.	Temperature rise shall not exceed 30℃	O	-
19	Reflow Heat	Reflow profile [Fig.1] Peak 250°C max for 10 sec 2 times.	No deformation of mold No shape of blister and popcorn	O	-

REMARKS



③ [Fig.1] REFLOW TEMPERATURE

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Qualification Test Sequence Table

Para.	Test Description	Test Group										
		A	B	C	D	E	F	G	H	I	J	K
1	Examination of product	1, 6	1, 14	1, 6	1, 6	1, 6	1, 3	1, 6	1, 4	1, 4	1, 4	1,9
2	Low Level Contact Resistance	3, 5	3, 13	3, 5	3, 5	3, 5		3, 5				3,8
3	Dielectric Withstanding Voltage		4, 12									
4	Insulation Resistance		5, 11									
5	Insertion force		6, 10									
6	Extraction force		7, 9									
7	Durability		8									4
8	Random Vibration	4										
9	Temperature Life			4								
10	Cyclic Temperature and Humidity				4							
11	Thermal Shock					4						5
12	Solderability						2					
13	Salt Spray							4				
14	Co-planarity								3			
15	④ High Temperature and Humidity											6
16	IPX8									3		
17	④ IP6X											7
18	Temperature Rise										3	
19	Reflow Heat	2	2	2	2	2		2	2	2	2	2

REMARKS
1) Numbers in the table above indicate the sequence corresponding to each test group.

NOTE) QT : QUALIFICATION TEST, AT : ASSURANCE TEST, O : Applicable Test

DWG NO	CL NO	PART NO
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