PRODUCT SPECIFICATION

(產品規格書)

Ordering information

2537-A	40	T	D	B	T
Series	No. of Pin Count 04~80	T：Tin Plated G00:Gold Flash	D：SMD Type	B:0.3mm Thickness FFC/FPC	U：Tube Package T：Tape & Reel Package

PRODUCT NAME (產品名稱)	DOCUMENT No.: (文件編號)	Rev. (版本)	OUPIIN (歐品)
FFC/FPC Connector 0.5mm(0.02”) Flip Lock Type (H=2.0mm) (RoHS)	2537spec-A	A2	
	Approved (核準)	**Checked** (審核)	**Prepared** (製作)
	Q.A. Section Chief	Amy Chiu	MAR.01/2012

1. SCOPE （範圍）

This product specification defines the product performance and the test methods to ascertain the performance of the FFC/FPC Connector 0.5mm Flip Lock Type **,** which is designed and manufactured by Oupiin Electronic Co.,Ltd.

(本產品規格書規定了由歐品電子有限公司生產的 FFC/FPC Connector 0.5mm Flip Lock Type 型連接器,產品的特性及測試方法.)

2. REFERENCE DOCUMENTS （參考文件）

MIL-STD-1344A	Test method for electrical connector （電子連接器測試方法）
MIL-STD-202	Test method for electrical components (電子零件測試方法）
EIA 364	Test method for electrical components （電子零件測試方法）

3. FEATURE & DIMENSIONS （特徵及尺寸）

3.1. ***PRODUCT DIMENSION （產品尺寸）***

These connectors shall have the dimensions as shown in drawing.

(本產品的相關尺寸參考圖面.)

3.2. ***PCB/PANEL LAYOUT （印刷電路板佈局）***

The recommended PCB layout is shown in drawing.
(本產品適用的 PCB layout 參考圖面.)

3.3. ***BILL OF MATERIAL （材料清單）***

Harmful material control follow the requirement of RoHS. The bill of material and product number is described in drawing.
(有害物質控制符合RoHS指令要求.本產品使用的材料參考附件.)

3.4. ***MECHANICAL & ELECTRICAL CHARACTERISTIC（機械及電氣特性）***

The connector shall have the mechanical and electrical performance as described in drawing.

(本產品的機械及電氣特性見圖面：)

3.5. ***PACKAGING （包裝）***

Products shall be packaged according to requirements specified in purchase order for safe delivery, connector container and the packaging method are shown in package specification.

(產品可依客戶指定要求包裝，包裝材料與包裝方式參見產品包裝規範。)

3.6 RATING CURRENT AND RATING VOLTAGE *額定電流與額定電壓*

Rating current is 0.5 A, rating voltage is 50V DC/AC RMS.
額定電流 0.5 A，額定電壓 50V DC/AC RMS。

3.7 STORAGE AND OPERATING TEMPERATURE *儲存與使用溫度*

Temperature range: -25°C~+85°C, including terminal temperature rise for rating current.
溫度範圍：-25°C~+85°C，包含接觸端子的額定電流溫升。

4. ENVIRONMENTAL（環境要求）

*4.1. **SOLDERABILITY** （可焊性）*

Connectors meet solder ability to MIL-STD-202. Finish shall be free of contaminants.
(產品可焊性符合 MIL-STD-202 標準規定的相關要求，表面不得有污染物.)

*4.2. **RESISTANCE TO SOLDER HEAT** （耐焊接熱）*

INFRARED REFLOW （紅外線回流焊接）

Three cycles. Each cycle consisting of three consecutive phased.
(三個週期，每個週期包括三個連續的階段完成；)

1. Preheat （預熱）

Increase in temperature not to exceed 4℃ per second.
(溫度增加不超過 4℃ /秒,)

2. Soldering （焊接）

Maximum allowable time above reflow temperature of 150~200℃ is 90~120 seconds. Maximum temperature in this interval is 260℃, not to exceed 5 seconds.
(回流焊溫度150~200℃時最長不超過90~120秒. 最高溫度260℃時間不超過5秒.)

3. Cool Down （冷卻）

Cool down shall not exceed 6℃ per second.
(冷卻速度不超過6℃/秒.)

Note: （說明）
Device temperature measurements are referenced from the top-center of the package outer surface.
(設備溫度量測時以從頂部中間位置測量為准.)

5. PERFORMANCE AND TEST DESCRIPTION

（性能及測試）

5.1. REQUIREMENT　（要求）

Product is designed to meet electrical, mechanical, and environmental performance requirements specified in **Table I**.

(本產品設計符合**附表一**所列的機械，電氣及環境要求.)

5.2. TEST CONDITION　(測試條件)

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

(除非特別注明，所有測試在室溫條件下完成；)

5.3. SAMPLE SELECTION　（樣品選擇）

Test samples shall be selected at random from current production. No test samples shall be reused. Samples are pre-conditioned with 10cycles of durability. Each group shall be containing 5 test samples.

(測試樣品從現生產的產品中隨機抽取，所有測試過的樣品不得重複使用. 樣品已預先插拔10次，每組測試有5個樣品；)

Table I: Test Requirements and Procedures

(附錄一:測試要求)

Items (項目)	Requirements (要求)	Test Methods (檢測方法)
1. Confirmation of Product (產品確認)	Product shall be conforming to the requirements of applicable product drawing. (產品必須滿足相關檔的規定)	Check the dimensions and functions per applicable product drawing in your eyes. (目視，尺寸及功能依產品圖面檢查)
2. Contact Resistance (接觸阻抗)	30 mΩ Max. initial (最大.初態)	Subject mated contacts assembled in housing to closed circuit of 10 mA max. at open circuit voltage of 20 mV max. (所述固定在外殼裏的端子連結到一個封閉回路中測試：電流 10 mA，電壓 20 mV max.)
3. Insulation Resistance (絕緣阻抗)	500 MΩ Min. (最小)	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. MIL-STD-202, Method 302, Condition B (100 V DC±10%). (測試產品端子間以及端子與接地間的電阻，適用：MIL-STD-202,方法 302，條件 B)(100V DC±10%)
4. Dielectric Strength (耐電壓)	Connector must withstand test potential of 200 V AC for 1 minute. Current leakage must be 0.5 mA max. (樣品必須承受測試電壓 200V AC，時間一分鐘，漏電流不大於 0.5 mA.)	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. MIL-STD-202, Method 301. (測試產品端子間以及端子與接地間的電壓，適用：MIL-STD-202，方法 301。)
5. Durability (Repeated Mating/Unmated) (耐久性)	Contact Resistance: 50 mΩ Max. after testing. (測試後接觸阻抗最大 50mΩ)	The sample should be mounted the tester and fully mated and unmated 20 cycles specified at the rate of 25mm/min (重復進行配合產品 20 次插拔.)
6. Humidity (恆溫恆濕)	After testing, no damage, Contact Resistance 50 mΩ max.. (測試後,產品無損壞，接觸阻抗：50 mΩ最大)	Temperature :40±2˚C 96 hours. (溫度：40±2˚C 96 小時) Relative Humidity : 90-95%; (相對濕度 ：90-95%；) Duration :96 Hours. MIL-STD-202, Method 108, (時間：96 小時；MIL-STD-202，方法 108。)

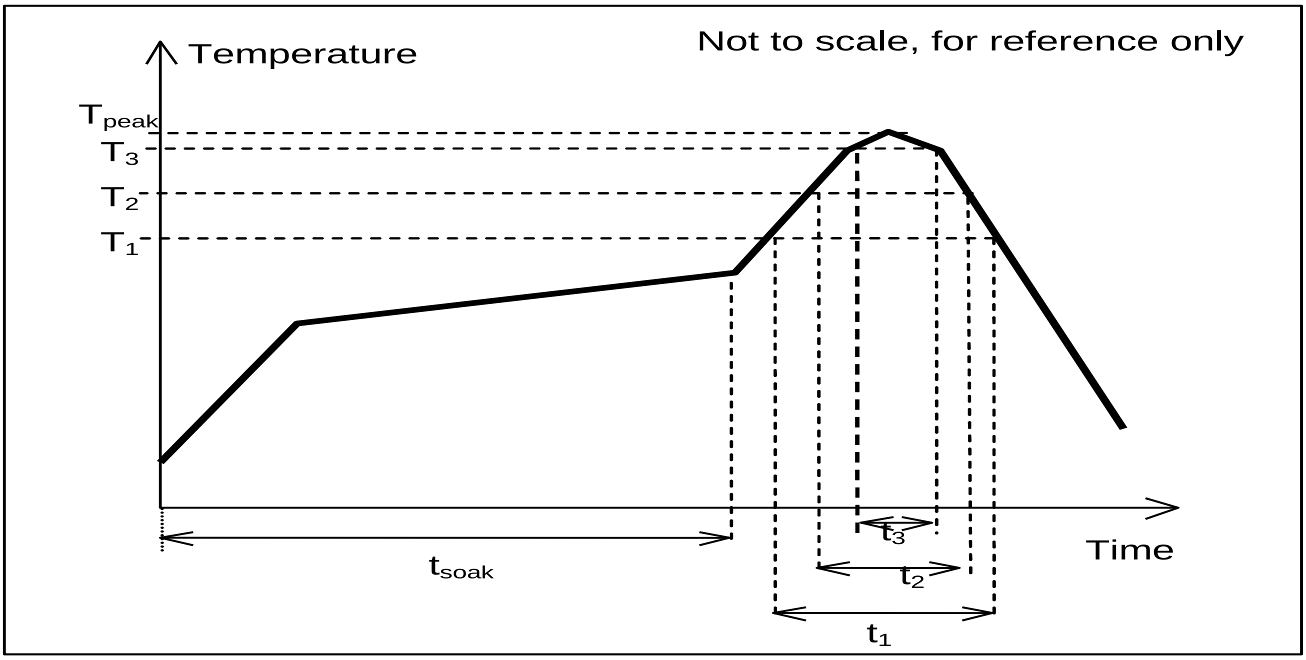
7.Cold Test (耐冷測試)	After testing, no damage, Contact Resistance 50 mΩ max.. (測試後,產品無損壞，接觸阻抗： 50 mΩ最大)	Subject product to -20±2°C for 96 hours continuously. MIL-STD-202, Method 108. (產品置於-20±2°C 連續 96 小時， 適用 MIL-STD-202, 方法 108。)
8. Solder ability (可焊性)	Appearance of the specimen shall be inspected after the test with the assistance of a magnifier capable of giving a magnification of 10 X for any damage such as pinholes, void or rough surface. (樣品在測試完成後，在放大倍數為 10 倍的顯微鏡下，檢查外觀損壞如：小孔，空焊，外觀粗糙度；)	Soldering time: 3 to 5 Seconds (焊接時間：3~5 秒) Soldering Temperature: 245±5°C. (焊接溫度：245±5°C.)
9.Resistance to soldering heat 耐焊接热	No damage 產品無損壞	Leave subject product in the 260±5°C chamber for 5 Seconds 產品置於 260±5°C 烘箱内 5 秒。

Table II: Reflow soldering profile

(附錄二:回流焊接曲線圖)

Pb-free reflow profile requirements: (無鉛回流焊接曲線)

Parameter (參數)	**Reference (參考)**	**Specification (規格)**
Average Temperature Gradient in Preheating (平均預熱溫度)		2.5°C/s
Soak Time 25~150°C	T_{soak}	60 Seconds (max)
Time Above 150~200°C	t_1	120 Seconds (max)
Time Above 200~230°C	t_2	50 Seconds (max)
Time Above 230~255°C	t_3	5 Seconds (max)
Peak temperature in reflow (回流焊接中最高溫度)	T_{peak}	260°C (–5/+0°C)
Temperature Gradient in Cooling (冷卻時溫度幅度)		Max -5°C/s



This profile is the minimum requirement for evaluating soldering heat resistance of components. Heat transfer method used for reflow soldering is hot air convection. The actual air temperatures used to achieve the specified profile largely dependent on the reflow equipment.
(這個曲線圖是評估原器件焊接抗熱的基本要求. 應用在對流焊接中的熱傳遞方式是熱氣對流. 達到特定曲線圖的實際溫度主要依賴於回流焊接設備.)

Material Housing：036-LCP (MG350PRL)

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Product Data

XYDAR®
liquid crystal polymer

MG-350

XYDAR MG-350 Liquid Crystal Polymer (LCP) is a mineral and glass-filled injection molding grade developed specifically for cost-effective performance in applications where a balance of flatness and strength are required. The moldability of this resin is exceptional. XYDAR MG-350 resin can fill very thin walls over long flow lengths with little or no flash, even at mold temperatures below 200°F (93°C). In addition, it has low warpage in molded products and good weld line strength.

Like other XYDAR Liquid Crystal Polymers, this material exhibits high strength and stiffness (even at elevated temperatures), low coefficient of thermal expansion, high deflection temperature, inherent flame resistance, and outstanding resistance to most chemicals, weathering, and radiation.

This resin is particularly well suited for many applications that have difficult-to-fill geometries, and require resistance to warp and strong weld lines. Potential applications for this resin include electronic connectors, burn-in sockets, automotive components, chemical processing and other mechanical devices.

Typical Properties OF XYDAR MG-350 LCP RESIN

	ASTM	TYPICAL VALUES[1]			
	Test	U.S. Customary Units		SI Units	
Property	Method	Value	Units	Value	Units
Mechanical					
Tensile Strength	D 638	13.1	kpsi	90	MPa
Tensile Modulus	D 638	2,330	kpsi	16.1	GPa
Tensile Elongation	D 638	0.9	%	0.9	%
Flexural Strength	D 790	23.2	kpsi	160	MPa
Flexural Modulus	D 790	2,170	kpsi	15.0	GPa
Izod Impact, Notched	D 256	0.9	ft-lb/in	48	J/m
Izod Impact, Un-notched		5	ft-lb/in	260	J/m
Thermal					
Deflection Temperature at 264 psi (1.82 MPa)	D 648	532	°F	278	°C
Flammability Rating[2] at 0.034 in. (0.8 mm)	UL-94	V-0		V-0	
Coefficient of Thermal Expansion, FD[3]	E 831	4	ppm/°F	7	ppm/°C
Coefficient of Thermal Expansion, TD[4]		33	ppm/°F	60	ppm/°C
Electrical					
Dielectric Strength at 0.062 in. (1.6 mm)	D 149	970	V/mil	39	kV/mm
Surface Resistivity	D 257	1.5×10^{16}	ohm	1.5×10^{16}	ohm
Volume Resistivity	D 257	1.8×10^{17}	ohm-cm	1.8×10^{17}	ohm-cm
Dielectric Constant at 10^2 Hz	D 150	4.2		4.2	
Dielectric Constant at 10^6 Hz	D 150	3.9		3.9	
Dissipation Factor at 10^2 Hz	D 150	0.013		0.013	
Dissipation Factor at 10^6 Hz	D 150	0.029		0.029	
General					
Specific Gravity	D 792	1.84		1.84	
Water Absorption at 24 hours	D 570	<0.01	%	<0.01	%
Mold Shrinkage, FD[3]	D 955	0.07	%	0.07	%
Mold Shrinkage, TD[4]	D 955	0.31	%	0.31	%

(1) Actual properties of individual batches will vary within specification limits. Properties are typical of uncolored resin. Colorants or other additives may alter values.
(2) These flammability ratings are not intended to reflect hazards presented by this or any other material under actual fire conditions.
(3) Flow Direction.
(4) Transverse Direction.

Solvay Advanced Polymers

SOLVAY

Solvay Advanced Polymers, L.L.C.
4500 McGinnis Ferry Road
Alpharetta, Georgia 30005-3914
www.solvayadvancedpolymers-us.com

XYDAR MG-350

Drying

Although XYDAR MG-350 resin has low atmospheric moisture absorption, it must be dried before molding. While either a dehumidifying hopper dryer or forced-draft air oven are acceptable methods of drying, the hopper dryer with desiccant beds is preferred. Hopper dryer inlet air temperature should measure 300°F (150°C), at a -20°F (-29°C) dew point, with a residence time of 6 to 8 hours.

For tray drying, pellets should be dried in 1-2" deep layers at 300°F (150°C) for 8 hours.

Injection Molding

XYDAR MG-350 LCP can be processed on any reciprocating screw injection molding machine with standard features. Conventional screw designs such as 20-24:1 L/D and 2.5-3:1 compression ratios are recommended. Clamp pressure should be 2-4 tons per square inch of projected area. The ratio of barrel capacity to total shot weight should be no greater than 5:1 with 2.5:1 preferred.

XYDAR MG-350 resin has a comfortably wide processing window. Melt temperatures can range from 610°F to 680°F (320°C to 360°C). Because the flow of XYDAR LCP resins responds to shear, increasing injection velocity is more effective in promoting flow than raising the melt temperature.

Because XYDAR LCP resins have excellent thermal stability, regrind is completely reusable. Although the general guidelines of UL 746D preclude the use of greater than 25 percent regrind in an application without submittal for UL testing, laboratory tests at regrind levels up to 100 percent have shown little or no degradation of electrical and/or mechanical properties.

Usually, mold temperatures should be between 150°F (65°C) and 200°F (95°C).These temperatures can be achieved with conventional water systems, synthetic oil or electric cartridge heaters. If a high gloss finish is needed, then higher mold temperatures may be used.

Standard Packaging and Labeling

XYDAR MG-350 resin is packaged in multi-wall paper bags containing 25 kg (55.115 pounds). Special packaging can be supplied upon request. Individual packages will be plainly marked with the product number, the color, the blend number, and the net weight.

Precautionary Labeling

On the basis of the toxicological, physical and chemical properties of XYDAR MG-350 resin, labeling used on containers is as follows:

Caution! Handling and/or processing this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose, and throat.

Product Safety and Emergency Service

For product safety information or a Material Safety Data Sheet on a product of Solvay Advanced Polymers

1 (800) 621-4557
1 (770) 772-8880 outside of U.S.

For information or help in an emergency such as a spill, leak, fire or explosion, call day or night:

Emergency Health Information

1 (800) 621-4590
1 (770) 772-5177 outside of U.S.

Emergency Spill Information

CHEMTREC 1 (800) 424-9300
1 (703) 527-3887 outside of U.S.
collect calls accepted

For Additional Information

Technical Service
1 (800) 621-4557

Customer Service
1 (800) 848-9744

XYDAR is a registered trademark of Solvay Advanced Polymers, L.L.C.

To our actual knowledge, the information contained herein is accurate as of the date of this document. However, neither Solvay Advanced Polymers, L.L.C. nor any of its affiliates makes any warranty, express or implied, or accepts any liability in connection with this information or its use. This information is for use by technically skilled persons at their own discretion and risk and does not relate to the use of this product in combination with any other substance or any other process. This is not a license under any patent or other proprietary right. The user alone must finally determine suitability of any information or material for any contemplated use, the manner of use and whether any patents are infringed.

X-49945 R11/01

Material Housing :UL

QMFZ2 Component - Plastics Monday, March 20, 2006 E91944

NIPPON OIL CORP

3-1 YAKO 2-CHOME KAWASAKI-KU KAWASAKI-SHI KANAGAWA 210-8545 JP

Material Designation: MG-350(r3), LCP MG-350(r3)

Product Description: Liquid Crystal Aromatic Polymer (LCAP), designated "Xydar" furnished as pellets.

Color	Min. Thick. (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str	IEC GWIT	IEC GWFI
BK	0.17	V-0	-	-	130	130	130	-	-
NC	0.3	V-0	-	-	130	130	130	-	-
	0.5	V-0	2	2	130	130	130	-	-
	0.89	V-0	3	0	240	220	240	-	-
	1.5	V-0	1	1	240	240	240	-	-
	3	V-0	1	0	240	240	240	-	-

CTI: 3 **IEC CTI** (V): - **HVTR:** 0 **D495:** 4 **IEC Ball Pressure** (°C): -

Dielectric Strength (kV/mm): 45 **Volume Resistivity** (10^x ohm-cm): 12 **Dimensional Stability** (%): 0

ISO Tensile Strength (MPa): - **ISO Flexural Strength** (MPa): - **ISO Heat Deflection** (°C): -

ISO Tensile Impact (kJ/m^2): - **ISO Izod Impact** (kJ/m^2): - **ISO Charpy Impact** (kJ/m^2): -

r3 Virgin and Regrind from 26-50% by weight inclusive have the same Flame and Tensile Impact characteristics.

Report Date: 1/5/1990 Underwriters Laboratories Inc®

UL94 small-scale test data does not pertain to building materials, furnishings and related contents. UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in components and parts of end-product devices and appliances, where the acceptability of the combination is determined by ULI.

Material Actuator : 049-LCP (Black)

SGS Test Report Click here

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Dissipation Factor at 10^2 Hz	D 150	0.013		0.013	
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(2) These flammability ratings are not intended to reflect hazards presented by this or any other material under actual fire conditions.

(3) Flow Direction.

(4) Transverse Direction.

Solvay Advanced Polymers

SOLVAY

Solvay Advanced Polymers, L.L.C.
4500 McGinnis Ferry Road
Alpharetta, Georgia 30005-3914
www.solvayadvancedpolymers-us.com

Material Contact : Copper Alloy (Phosphor Bronze)

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MINCHALI

REPORT OF MATERIAL TEST

DATE: FEB.15,2006

Customer: 歐品電子有限公司	Commodity: C 5191 R PHOSPHOR BRONZE STRIP (H)	ISO 9002:4M8Y035-00 台正字第 3545 號
Applied Standard: CNS 9503 Phosphor Bronze Sheets,Plates and Strips		

Chemical Analysis Test

Work No.	Size of Product: Thickness (mm)	Width (mm)	Length (mm)	P(%)	Sn(%)	Cu+Sn+P(%)				P.O. NUMBER
	Standard			0.030 - 0.350	5.50 - 7.00	min. 99.50				
4CC135A	0.200	305.000		0.164	5.829	99.962				
4CC135B	0.200	305.000		0.164	5.829	99.962				

Mechanical & Physical Test

Work No.	Size of Product			Dimension Test		Tension Test		Hardness Test HV	Grain Size (mm)	Electric Conductirity (%)
	Thickness (mm)	Width (mm)	Length (mm)	Thickness (mm)	Width (mm)	Tensile Strength (kgf/mm^2)	Elongation (%)			
	Standard			-	(-) 0.10 - (+) 0.00	min. 58	-	min. 170	-	-
4CC135A	0.200	305.000		GOOD.	GOOD.	60.13	26.54	192.0 - 193.0	0.010	14.1
4CC135B	0.200	305.000		GOOD.	GOOD.	60.13	26.54	192.0 - 193.0	0.010	14.1

QC Supervisor 鄭建益

MINCHALI METAL INDUSTRY CO., LTD.
11, Pei Yuan Road, Chung Li City, Taiwan, R. O. C.
Tel : (03)4526141-5 (03)4526017-9

Material Solder PAD : Copper Alloy (Brass)

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MINCHALI

REPORT OF MATERIAL TEST

DATE: MAR 07,1999

Supplier: 弘振企業股份有限公司

Commodity: C 2680 R BRASS STRIP (H)

Applied Standard: CNS 4383 Brass Sheets,Plates and Strips

台正字第 3544 號

Chemical Analysis Test

Work No.	Size of Product			Cu(%)	Fe(%)	Pb(%)	Zn(%)			
	Thickness (mm)	Width (mm)	Length (mm)							
	Standard			64.00 - 68.00	max. 0.050	max. 0.070	REM.			
62A095B	0.200	0.000		65.140	0.025	0.009	REM.			
62A095C	0.200	0.000		65.140	0.025	0.009	REM.			

Mechanical & Physical Test

Work No.	Size of Product			Dimension Test		Tension Test		Hardness Test HV	Grain Size (mm)	Electric Conductirity (%)
	Thickness (mm)	Width (mm)	Length (mm)	Thickness (mm)	Width (mm)	Tensile Strength (kgf/mm^2)	Elongation (%)			
	Standard			-	(-) 0.10 - (+) 0.00	42 - 55	-	105 - 175	-	-
62A095B	0.200	0.000		GOOD.	GOOD.	47.34	21.86	149.0 - 152.0	-	25.0
62A095C	0.200	0.000		GOOD.	GOOD.	47.34	21.86	149.0 - 152.0	-	25.0

QC Supervisor

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