ALPHA® TELECORE XL-825

NO-CLEAN, FLUX COATED, WIRE SOLDER

DESCRIPTION

ALPHA Telecore XL-825 is a cored wire that is specifically designed to meet JIS Grade AA requirements, with halide content <1,000ppm, for no-clean lead-free applications. It offers the balance of high SIR reliability and excellent spread characteristics. It is among the best performing products in the ALPHA Cored Wire Product portfolio. Excellent soldering performance provides users with efficiency gains from higher first pass yields and faster soldering.

ALPHA Telecore XL-825 fast wetting and low spattering characteristics make it excellent for manual assembly and "drag soldering" technique. It is safe to use and operator friendly. Inspection is also made easier by its clear residue.

FEATURES & BENEFITS

- *Very fast wetting* → *Excellent for "Drag Solder" Technique. High Throughput.*
- *Very low flux spatter* → *Safe to use, Operator Friendly Less Residues on Boards.*
- *Good spread characteristics* → *Excellent First Pass Solder Joints, conferring high throughput. JIS Spread ≥ 80%.*
- *Very low levels of fumes* → *Cleaner Working Environment. Less Extraction Maintenance.*
- *Vanilla scented* → *Users experience improved comfort levels of fumes odour.*
- *Clear non-tacky residue* → *No-Clean Residues. Useful for all Applications.*
- *Provides good joint appearance* → *Makes Inspection easy.*

ALPHA Telecore XL-825 is suitable for use in any commercial no-clean hand soldering application that specifies compliance to JIS grade AA standard.

It is suited to such areas of industry (subject to the above criteria) as TV, Audio equipment, Video/DVD, Games box, Automotive, Computer and peripherals, mobile and hand held devices and all types of household appliances. Flux content of 2.2% would be sufficient for most soldering applications as mentioned.

PRODUCT INFORMATION

Standard	Alloy Designation	Melting or Solidus / Liquidus Temp °C	Flux Amount
J-STD-006B	SAC305	217 - 221	2.2% & 3.3%
Proprietary	SACX Plus 0807	217 - 228	2.2% & 3.3%
Proprietary	SACX Plus 0307	217 - 228	2.2% & 3.3%
Proprietary	SnCX Plus 07	227 – 229	2.2% & 3.3%
ISO 9453	Sn99.3/Cu0.7	227	2.2% & 3.3%
ISO 9453	Sn40/Pb60	183 - 238	2.2%
ISO 9453	Sn60/Pb40	183 - 190	2.2%
J-STD-006B	Sn63/Pb37	183	1.1%, 2.2% & 3.3%
ISO 9453	Sn60/Pb38/Cu2	183 - 191	1.1% & 2.2%

** Telecore XL-825 may also available in other alloys and flux amounts on request.*

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APPLICATION

A soldered joint is formed by heating the parts to be soldered to a temperature in excess of the melting point of the alloy to be used – in hand soldering this is how a soldering iron is used. By feeding the cored wire onto the parts, the flux is able to flow and remove oxidized metal, while the solder creates a thin inter-metallic bond which becomes the solder joint. ALPHA® Telecore XL-825 is also ideal for robotic soldering applications.

Note the following tips:

- Use a soldering iron tip size and form to suit the operation: small tips for soldering large components may prevent the formation of a joint or slow the process down.
- Select a solder wire diameter to suit both the soldering iron tip and the parts/components to be soldered.
- Soldering iron systems should provide sufficient heat to satisfy the requirements of the points above.
- A typical solder tip temperature would be between 120°C and 160°C above the liquidus temperature of the alloy. The ideal temperature to use is dependent on how thermally demanding the assembly is.
- Cored solder wires can be provided in different grades of alloy so always ensures that you have selected the right grade for the application.
- Do not overheat as this causes an increase in the depth of the inter-metallic layer, which in turn weakens the joint.

TECHNICAL DATA

Physical Properties	Typical Values
Rosin Softening Point:	70-80°C
Acid Value:	160-180 mg KOH/g flux
Halide Content:	< 1,000ppm per JIS Z 3197
Classification:	JIS - 1a3N Grade AA IPC J-STD-004B - ROL1

Electrical Reliability Test	Requirements	Results
Automotive Damp-Heat Cyclic Test (IEC 60068-2-78)	1.0×10^8 Ω minimum *	PASS
JIS SIR Test (JIS-Z-3197)	1.0×10^{11} Ω minimum	PASS
JIS WER Test (JIS Z 3283:2006)	WER Class AA >1000 ohm-m	PASS
IPC SIR Testing (J-STD-004B)	1.0×10^8 Ω minimum	PASS
Bellcore SIR Test (GR-78-CORE)	1.0×10^{11} Ω minimum	PASS
Bellcore EM Test (GR-78-CORE)	SIR(initial)/SIR (Final) < 10	PASS

* IEC 60068-2-78 does not specify a minimum resistance value. Alpha has adopted the stated value.

Chemical Reliability Test	Requirements	Results
Copper Mirror Test JIS	No complete removal of copper	PASS
Copper Mirror Test IPC-TM 650 TM 2.3.32	No complete removal of copper	PASS
Copper Corrosion Test JIS	No evidence of corrosion	PASS
Copper Corrosion Test IPC-TM 650 TM 2.6.15	No evidence of corrosion	PASS

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SAFETY

Observe standard precautions for handling and use. Use in well ventilated areas. DO NOT SMOKE.
ALPHA Telecore XL-825 wire is not considered toxic. However, its use in typical soldering applications will generate a small amount of decomposition and fumes. These fumes should be adequately exhausted / vented for operator safety and comfort. Consult the MSDS for additional safety information.

STORAGE

ALPHA Cored Solder Wires should be stored in dry conditions and within a temperature range of 0°C to 40°C. When stored under these conditions the product shelf life is indefinite. However, Alpha guarantees the product shelf life for three years from the date of manufacture when stored in dry conditions and within 0°C to 40°C.