ALPHA® PV-XS80

Cored Solder Wire

DESCRIPTION

ALPHA PV-XS80 offers the balance of high SIR reliability and excellent spread characteristics for Photovoltaic module assembly. The flux is formulated to meet JIS-Z-3283, Class AA requirements, with halide content <1,000ppm. It is applicable to Photovoltaic no-clean tin lead or lead-free applications. ALPHA PV-XS80 not only has an excellent soldering performance, but also a reliable material that is able to comply to IPC flux ROL1 classification.

ALPHA PV-XS80's fast wetting and low spattering characteristics make it excellent for manual assembly and drag soldering applications. It is safe to use and operator friendly. Inspection is also made easier by its clear residue.

FEATURES & BENEFITS

- *Very fast wetting* → *Excellent for Manual Assembly and "Drag Solder" Technique*
- *Very low flux spatter* → *Safe to use, Operator Friendly, Less Residues on Boards*
- *Good spread characteristics* → *Excellent First Pass Solder Joints. Spread Ability per JIS is ≥ 80%.*
- *Very low levels of fumes* → *Cleaner Working Environment, Less Extraction Maintenance*
- *Clear non-tacky residue* → *No-Clean Residues, Useful for all Applications*
- *Provides good joint appearance* → *Makes Inspection easy*

ALPHA PV-XS80 is suitable for use in any commercial no-clean hand soldering or robotic soldering application that specifies compliance to JIS Class AA standard.

HINTS & TIPS ON SOLDERING IN GENERAL

Always remember that 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 oxide films, while the solder creates a thin inter-metallic bond which becomes the solder joint.

Note the following tips:

- Use a soldering iron bit size and form to suit the operation: small bits for soldering large components may prevent the formation of a joint or slow the process down.
- Always select wire diameters to suit both soldering iron bit and the parts/components to be soldered.
- Soldering iron systems should provide sufficient heat to satisfy the requirements of the points above.
- 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.

All materials from Alpha Metals are manufactured to meet the most stringent of standards and to ensure the best possible finish to every soldering application.

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ALPHA Global Headquarters
300 Atrium Drive, Somerset, NJ 08873 USA ♦ 1-800-367-5460 ♦ www.alpha.alent.com

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TECHNICAL SPECIFICATION

Standard	Alloy Designation	Melting or Solidus / Liquidus Temp °C	Flux Configuration
J-STD-006B	SAC305	217 - 221	2.2% & 3.3%
	Sn60/Pb40	183 - 188	2.2% & 3.3%
Proprietary	SACX Plus 0307	217 - 228	2.2% & 3.3%

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 – Class AA IPC - ROL1
Shelf Life / Storage Temperature	36 months / 10°C - 43°C

Electrical Reliability Test	Requirements	Results
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

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

SAFETY

Observe standard precautions for handling and use. Use in well ventilated areas. DO NOT SMOKE.
ALPHA PV-XS80 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.