



Product information

FELDER-ISO-Core[®] "EL" - LEADFREE

Flux-cored, halide free activated soft solder wire,
Flux according to DIN EN 29454.1, 1.1.3.B respectively DIN EN 61190-1-1, ROLO

RoHS-conformity according to 2002/95/EG*

Art.-Nr.: (55)20.....

Description

Low residue, halide free, no-clean solder wire, especially adapted to the requirements in the electronic production. The flux characterises itself by its high temperature constancy and does not spatter during the reflow soldering. The bright, solid flux residues are neither corrosive nor electrical conductive and may therefore remain on the soldering joint.

FELDER- ISO-Core® "EL" – lead-free has been tested and released by **Siemens AG** in Berlin (Certification Body **CT MM6**) on its electrical conductivity and its electrolytic corrosion effect (dendrite growth) (if desired we will place the certificates at your disposal).

*Lead-free FELDER- ISO-Core® "EL"-solder wires do not contain any substances, that are subject to restriction by directive 2002/95/EG ("RoHS").

Lead free standard solder alloys

Alloys	DIN EN ISO 9453	DIN EN 61190	Melting range	Articel- No.
Sn100Ni+ (SnCu0,7)	S-Sn99Cu1(AgNiGe)	Sn99Cu.7	227°C	552094....
Sn99Ag+ (SnCu0,7Ag0,3)	S-Sn98AgCu1Ag(NiGe)	-	217 – 227°C	552081....
Sn96Ag+ (SnAg3Cu0,5)	S-Sn96Ag3Cu1(NiGe)	Sn96Ag03Cu0,4	217 – 219°C	552076....
Sn95Ag+ (SnAg3,8Cu0,7)	S-Sn95Ag4Cu1(NiGe)	Sn96Ag04Cu0,7	217°C	552084....
Sn96,5Ag3Cu0,5	S-Sn96Ag3Cu1	Sn96Ag03Cu0,4	217-219°C	2076....
Sn95,5Ag3,8Cu0,7	S-Sn95Ag4Cu1	Sn96Ag04Cu0,7	217°C	2084....
Sn95Ag5	S-Sn95Ag5	Sn95Ag05	221 – 240°C	2092....
Sn96,5Ag3,5	S-Sn96Ag4	Sn96Ag04	221°C	2096....
Sn97Ag3	S-Sn97Ag3	-	221 – 224°C	2095....
Sn99,3Cu0,7	S-Sn99Cu1	Sn99Cu.7	227°C	2094....
Sn97Cu3	S-Sn97Cu3	-	227 – 310°C	2097....

Further lead-free alloys can be delivered on customer's request.

Patents

FELDER GMBH produces all NiGe-alloys with the licence for Fuji-patents (JP 3296289, USP 6.179.935 B1 and DE 198 16 671 C2), as well as (if desired) all SAC-solders according to Senju-patent (JP 3027441) and ISURF-patent (US 5.527.628).

Properties

Flux type	:	No-Clean 1.1.3.B, (ROL0, F-SW32)
Flux content	:	3,5 % standard
Flux distribution	:	1 – (standard), 3 – and 5 – cored
Halide content	:	halide free
Ø in mm	:	0,25, 0,35, 0,50, 0,75, 1,00, 1,50, 2,00, 3,00, 4,00
Spool sizes in kg	:	0,10, 0,25, 0,50, 1,00, 2,50, 5,00

Impurities /tolerances according to DIN EN ISO 9453:2006

e.g.: SAC 305

Element	Ag	Al	As	Bi	Cd	Cu	Fe
Content (%)	3,0± 0,2	0,001	0,03	0,1	0,002	0,5± 0,2	0,02
Element	Pb*	Sb	Sn	Zn			
Content (%)	0,07	0,1	Balance	0,001			

e.g.: Sn100Ni+

Element	Ag	Al	As	Bi	Cd	Cu	Fe
Content (%)	0,06	0,001	0,03	0,1	0,002	0,7± 0,2	0,02
Element	Ge	Ni	Pb*	Sb	Sn	Zn	
Content (%)	0,01±0,002	0,07±0,02	0,07	0,1	Balance	0,001	

*The upper limit of lead in FELDER lead-free electronic solder wires is 0,07% (standard default 0,1%)

Surface insulation resistance (SIR) according to IPC-TM-650

after 24 h*	:	5,8E+11 Ω
after 96 h*	:	1,8E+11 Ω
after 504 h*	:	9,8E+10 Ω
Reference sample (24 h*)	:	9,8E+11 Ω

*Storage of sample-pcb's at conditioned atmosphere 40°C/ 93% rel. humidity.
Measuring voltage = 5V DC

Electrolytic corrosion

After storage for 504 hours (h) of tested PC-board from the SIR-test at testing climate 40°C/ 93% rel. humidity with 5V persistently set-up DC voltage.

after 504 h : no electrolytic-corrosion

Cleaning

The flux residues do not evoke corrosion at non-ferrous metals and show highest surface resistance values. Therefore, they may remain on the soldering joint. However, if cleaning is desired, it can be performed with any common cleaning agents.

Storage

Store dry and dust-free as far as possible. Use best before end of 24 months.

Advices for handling

Please refer to the corresponding MSDS (Material Safety Data Sheet).

Further advices

We are delighted to produce all solder wires according to your company standards.