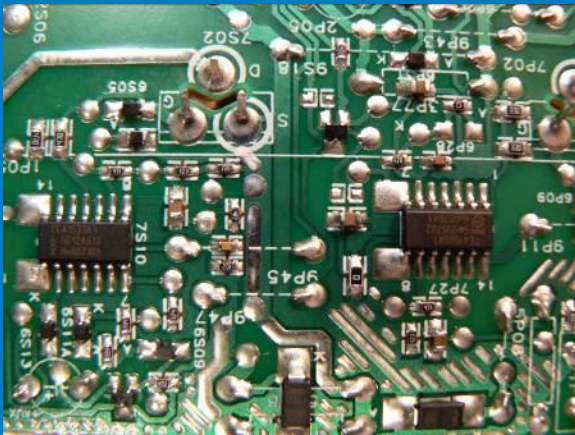
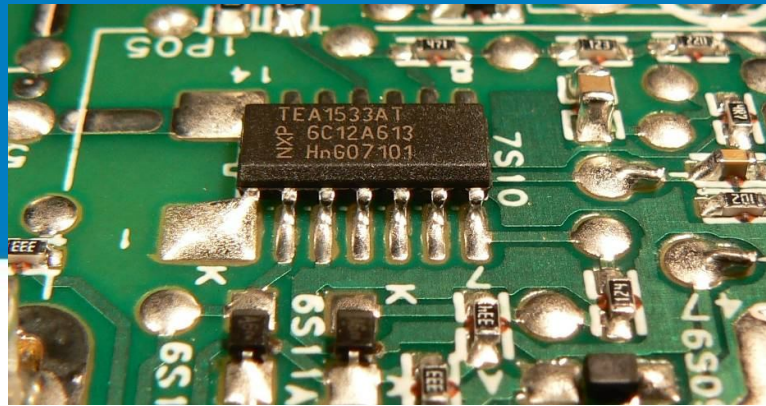


alpha



# ALPHA<sup>®</sup> SACX<sup>™</sup> Plus 0107 Product Information



# Overview

- ALPHA SACX™ Plus 0107 is a new wave solder alloy based on the very successful ALPHA SACX™ platform
- The alloy is designed to offer low cost high performance for FR2 and simple FR4 boards.
- The product has been formulated to deliver high reliability and excellent wetting.

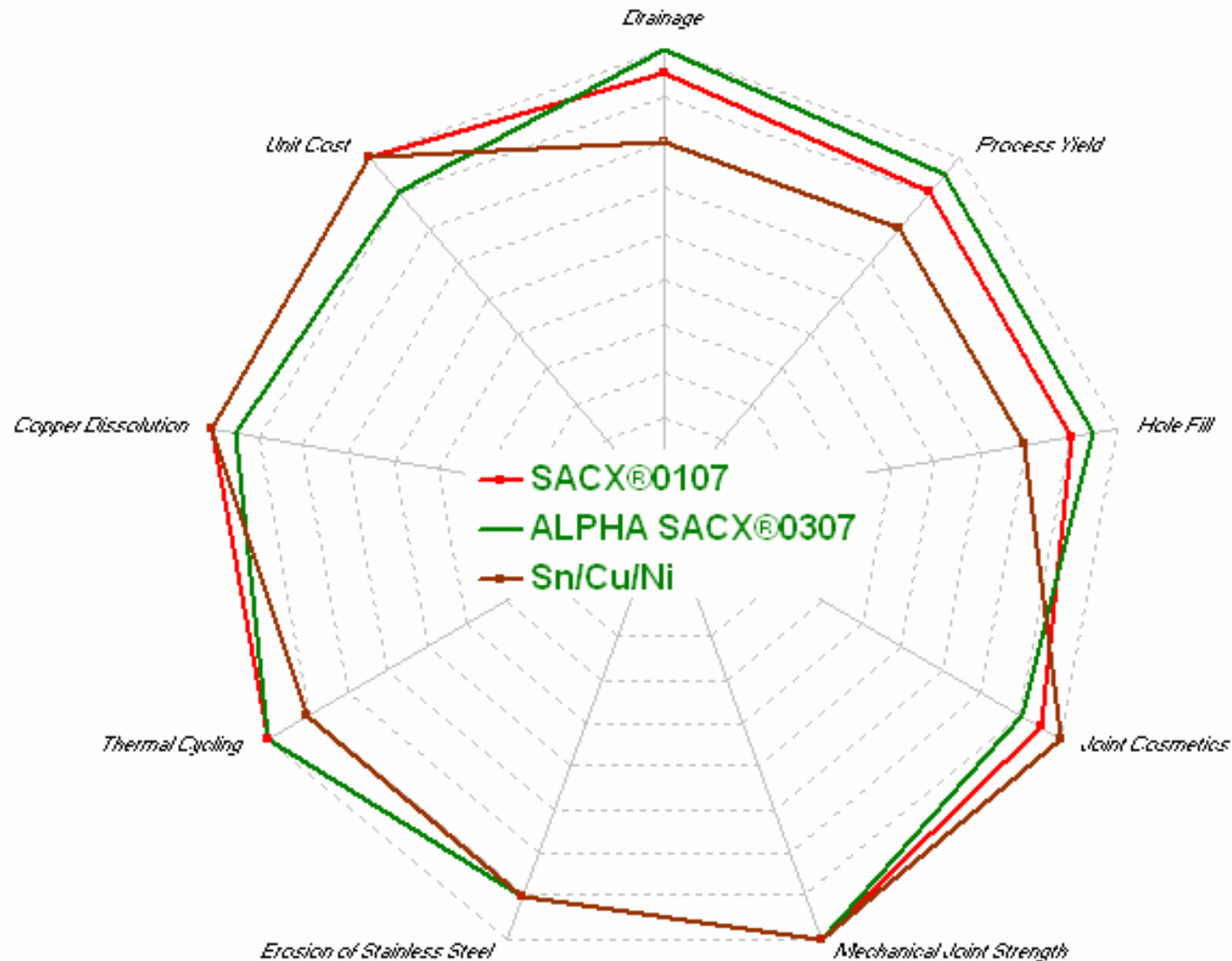
# Formulation Highlights

- **Process Yield** : A fast wetting speed and high wetting force is achieved by selecting combination of elements to optimise the wetting performance of the alloy while keeping material costs as low as possible.
- **Hole Fill** : Formulated to deliver *Superior Hole fill* to Sn/Cu (Ni or Co) alloys.
- **Bridging Performance** : Specific addition of elements improve the bridging performance compared to Sn/Cu (Ni or Co) alloys
- **Copper Dissolution Rate** : Additives to the alloy reduce the copper dissolution rate.
- **Dross Rates** : The successful anti-oxidant technology used in SACX0307 has been incorporated into SACX™ Plus 0107.
- **Value** : Delivers greater value than any competitive product.

# SACX™ Plus 0107 Data Table

SACX™ Plus 0107 Data table			
Characteristic	SACX® 0107	Units	
Liquidus	228	°C	
Solidus	217	°C	
Wetting Time To (EF-8000 Flux)	1.10	Sec	
Wetting Force Max	6.09	mN	
Density	7.40	g/cc	
Process Yield data (PCV Phase)	38	Defects	
Drossing Levels	13.36	g/hr	
Tensile - Max stress at break	31.3	MPa	
Tensile - Elongation % at break	17%	%	
Hardness - As cast	21.98	Hv2.5	
Hardness - aged 125°C for 24 hours	17.89	Hv2.5	

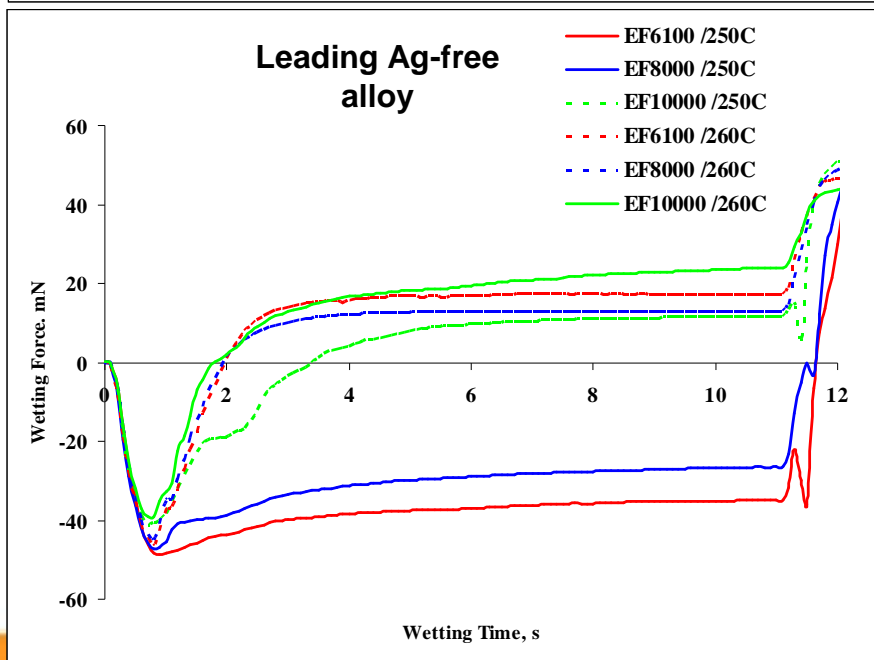
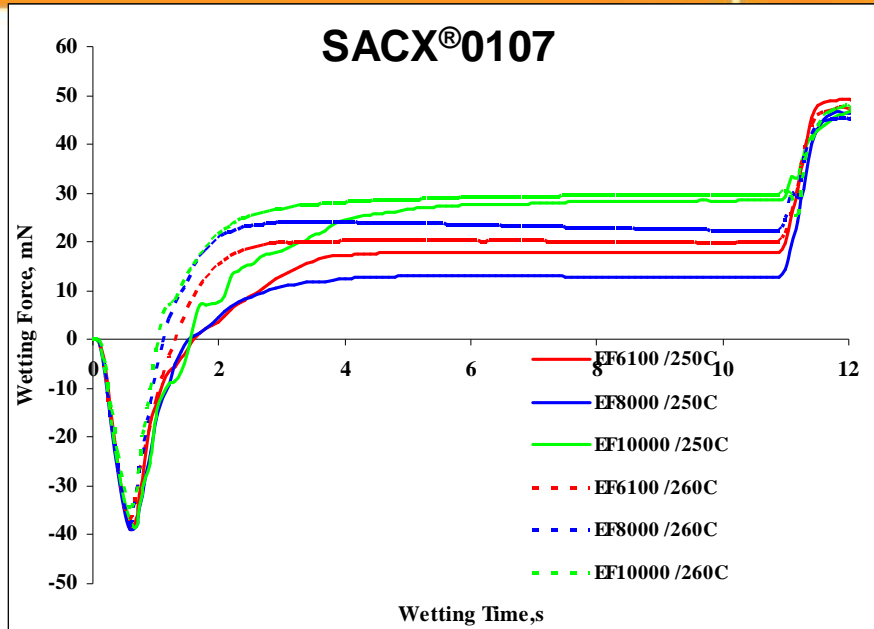
## PbFree Wave Solder Alloy Attribute Balance



- SACX™ Plus 0107 delivers very fast wetting speed and highest wetting force
- This superior performance is maintained with different flux chemistries.
- High wetting forces are robust at the lower operating temperature of 250C

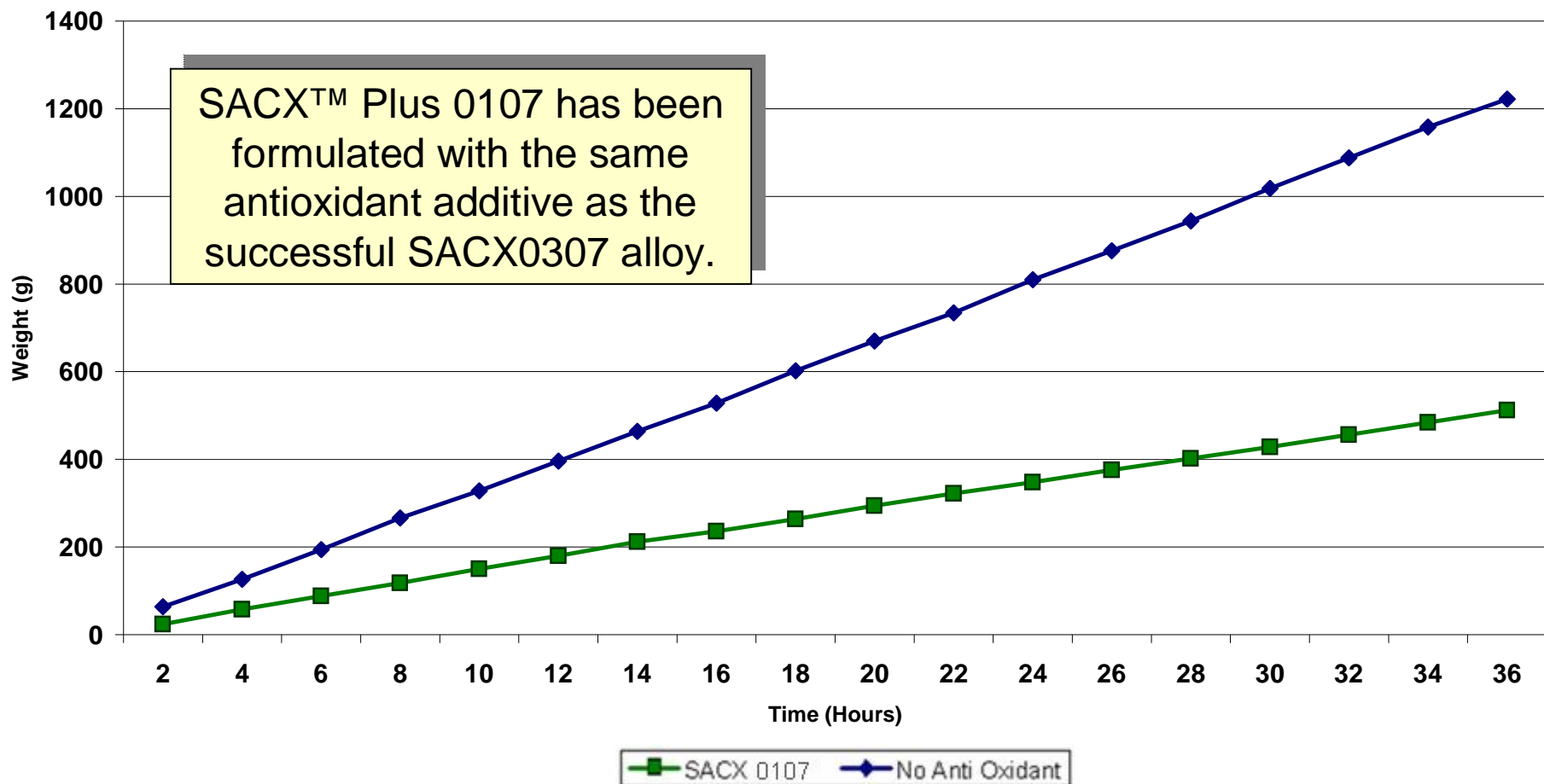
*Test considerations:*

- 3 Flux Types
- 2 Temperatures



# SACX™ Plus 0107 Oxidation Results

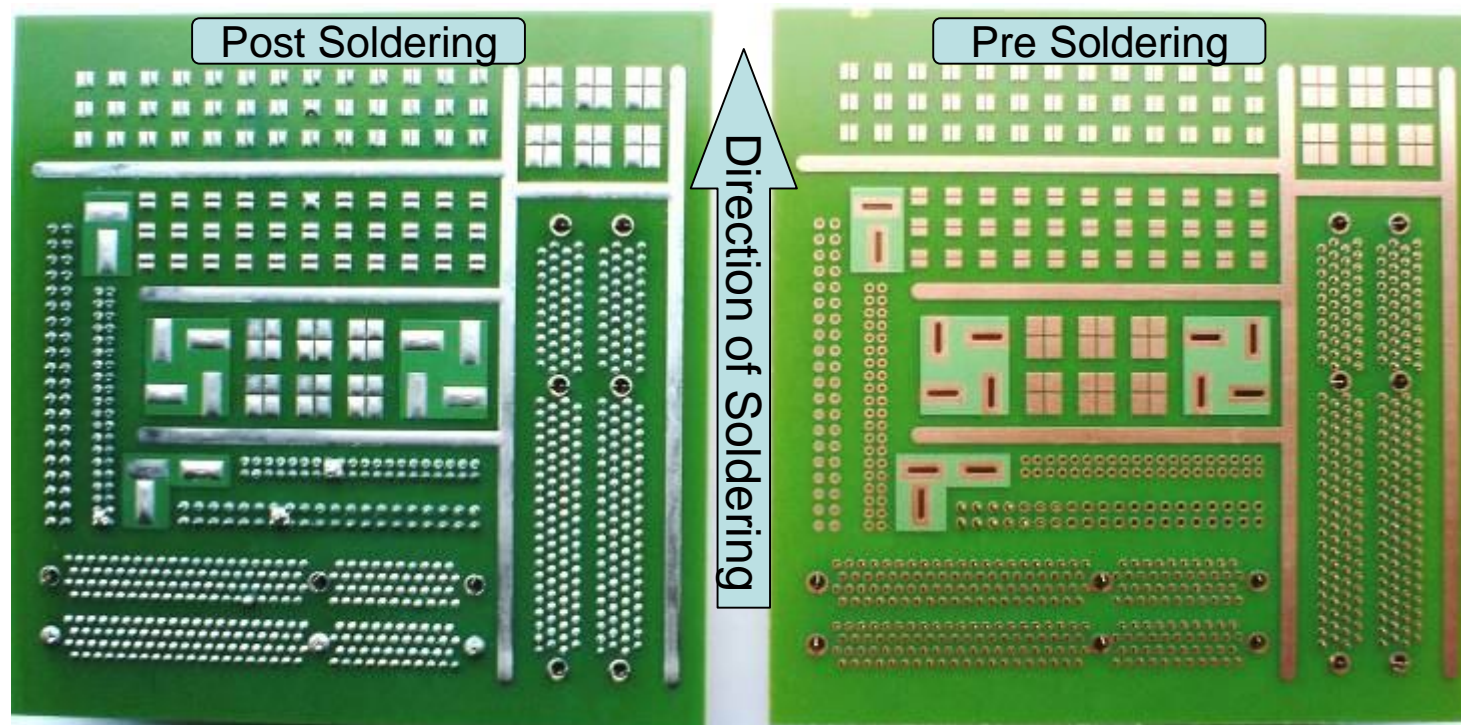
## SACX™ Plus 0107 Dross Levels Comparison





## Process Yield Data

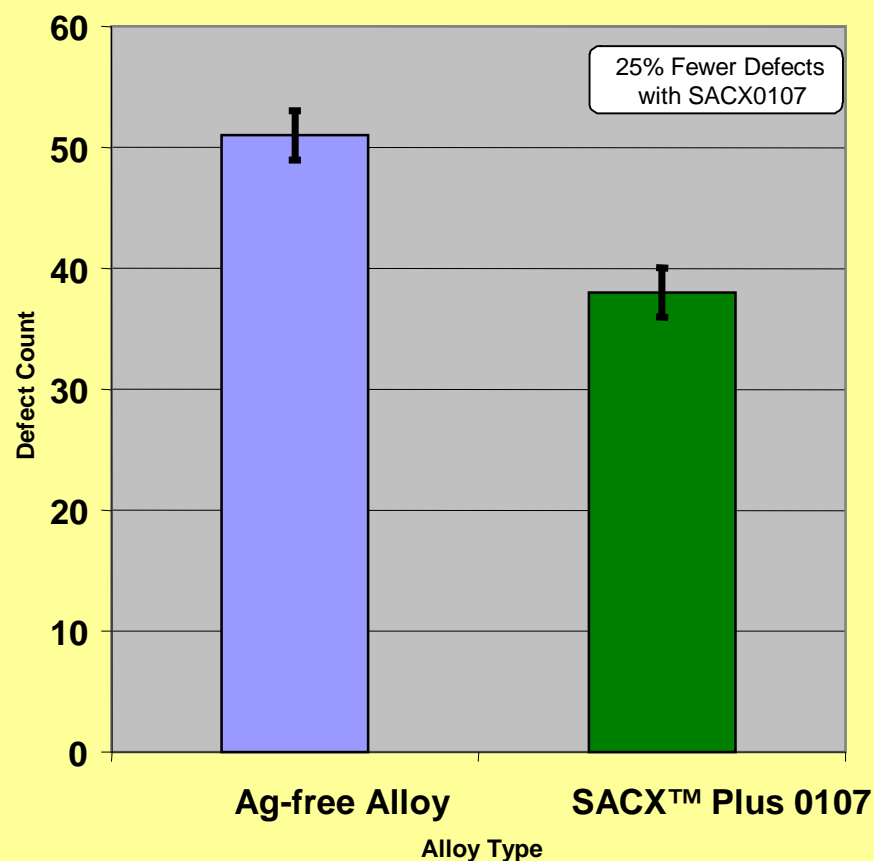
- Test Board FR2 – OSP and Rosin pad finishes.
- 4 AGP connectors, 4 headers





# Process Yield data

## Total Defects on AGP Connectors

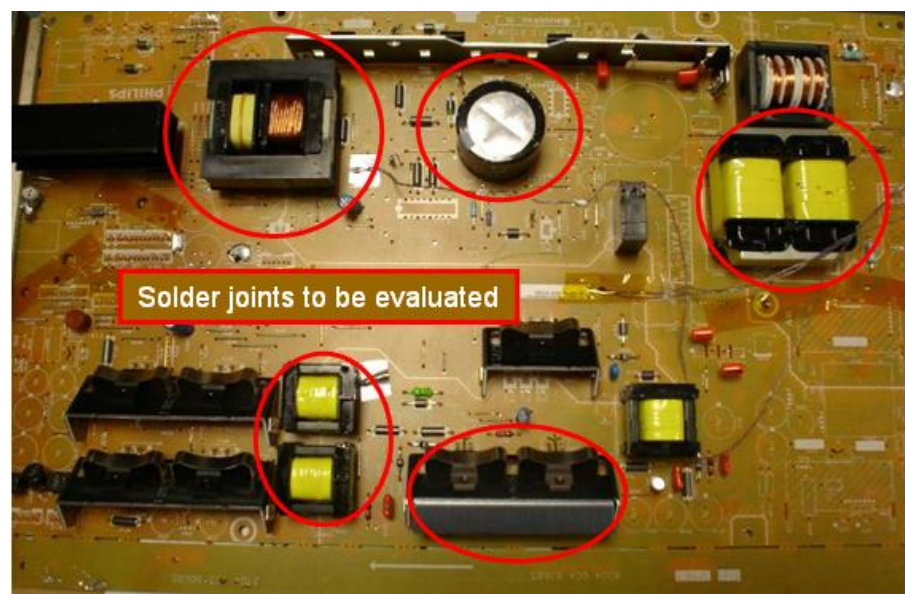


Board ref	Ag-free Alloy			SACX®0107		
	AGP1	AGP2	TOTAL	AGP1	AGP2	TOTAL
A	3	4	7	2	0	2
B	0	0	0	0	4	4
C	3	0	3	3	4	7
D	3	3	6	0	2	2
E	0	3	3	2	0	2
F	2	2	4	4	2	6
G	0	4	4	2	3	5
H	0	4	4	3	0	3
I	2	0	2	2	0	2
J	3	2	5	0	3	3
K	4	3	7	2	0	2
L	3	3	6	0	0	0
Total	23	28	51	20	18	38
Ave	1.92	2.33	4.25	1.67	1.50	3.17
Std Dev	1.51	1.55	2.09	1.37	1.68	1.99

■ Ag-free alloy  
■ SACX0107

# Reliability Data

- Test board : FR2 TV board (LCD TV) with large, high thermal mass power management devices.
- Cycle profile:
  - 1000 x 2 hour cycles
  - -20°C to +85°C
  - Dwell at upper and lower temperature – 45minutes to allow full stress relief of solder joints
- Results:
  - After 500 cycles, no sign of damage could be seen on the SACX™ Plus 0107 boards.
  - After 1000 cycles ... SACX™ Plus 0107 fared the best (of all the alloys tested) with some cracking to two components, and signs of damage to only one other component.



# Available Globally

	New Description
151994	Vaculoy SACX 0107 1Kg Bar
151995	Vaculoy SACX 0107 TRI-KILO
151996	Vaculoy SACX 0107 Chunk
151997	Vaculoy SACX 0107 L/F Feeder Bar
151998	Vaculoy SACX 0107 ULL 1Kg Bar
151999	Vaculoy SACX 0107 ULL TRI-KILO
152000	Vaculoy SACX 0107 ULL Chunk
152001	Vaculoy SACX 0107 ULL L/F Feeder Bar
151990	Vaculoy SACX 0100 1Kg Bar
151991	Vaculoy SACX 0100 TRI-KILO
151992	Vaculoy SACX 0100 Chunk
151993	Vaculoy SACX 0100 L/F Feeder Bar
151987	Vaculoy SACX 0100 ULL 1Kg Bar
151965	Vaculoy SACX 0100 ULL TRI-KILO
151988	Vaculoy SACX 0100 ULL Chunk
151989	Vaculoy SACX 0100 ULL L/F Feeder Bar

Cu free  
replenishment  
alloy

Ultra Low  
Lead version  
(<.05% Pb)