



SMOOTH N SLEEK SDN BHD

(Co. Reg. No: 321141-K) ESTD. SINCE 1994.

UNIT 1-05-12, KRYSAL POINT CORPORATE PARK, KRYSAL POINT II,
LEBUH BUKIT KECIL 6, 11900 BAYN LEPAS, PENANG, MALAYSIA.

TEL : (6)04-644 8029, 644 9029 FAX : (6)04-644 0107 E-mail : sales@snspcb.com

WEBSITE : www.snspcb.com

Circuit Frames

Imagine replacing damaged circuits without the mess of liquid epoxy, with a bond strength equal to the original, on bare or loaded circuit boards -- all in about 30 seconds. Our replacement Circuit Frames with dry-film epoxy backing make this delicate, precise procedure quick and neat. Trim out the circuit you need and bond it to the circuit board surface with a bonding iron or bonding press.

Choose from hundreds of different shapes or let us custom design and fabricate that special shape for you.

Replacing circuits and pads is done in 4 steps.

Step 1 (See Figure 1.)

Evaluate the damaged circuits. If the base material is severely damaged it may have to first be repaired using epoxy. See Epoxy Kits. Remove the defective pad or conductor and scrape off any soldermask from the connecting circuit. Apply liquid flux to the connecting circuit on the board surface and tin with solder.

Step 2 (See Figure 2 & 3)

Select a replacement pad that matches the missing pad. Scrape off the adhesive bonding film from the solder joint area on the back of new pad. Trim out the new pad from the Circuit Frame. Cut from the plated side.

Step 3 (See Figure 4.)

Temporarily place the new pad in position using Kapton tape. Then permanently bond the new pad using the Bonding System or Bonding Iron. Bonding time is only 30 seconds.

Step 4 (See Figure 5.)

If the new conductor has a connecting circuit, apply liquid flux to the lap solder joint connection area and solder the circuit of the new pad to the circuit on the printed circuit board surface. If desired, apply epoxy to the lap solder joint connection.



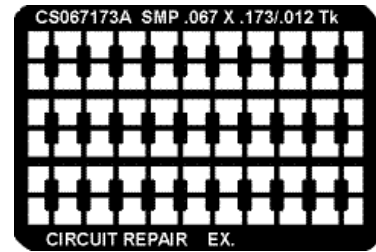
This symbol indicates that product meet RoHS compliance

Material Specifications

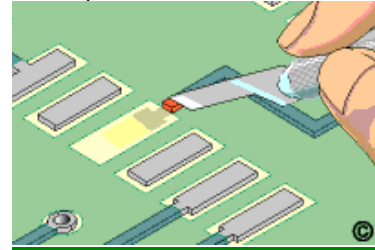
Frame Size:	2.25" x 1.50" (57 x 38 mm)
Base Material:	Rolled annealed copper foil .0014" (0.036 mm) thick
Adhesive Backing:	Nitrile Phenolic Film Adhesive ① 0.002" (0.051 mm) thick
Adhesive Liner	Silicone Paper .003" (0.076mm) thick
Bonding Temperature:	475°F ± 25°F (246°C ± 14°C)
Bonding Time:	30 seconds
Bonding Load:	See Calibration Settings below
Peel Strength:	Minimum 8 lbs/inch (1.43 kg/cm) after cure to FR-4 material
Shelf Life:	6 months minimum.

Plating Option Specifications

Bright Tin (Lead Free)	0.0005" (.0127 mm) 100% Tin
Tin/Lead	0.0005" (.0127 mm) 60/40 Tin/Lead
Gold - Nickel/Gold:	0.000050" (0.00127 mm) Gold over 0.000100" (0.00254 mm) Nickel.



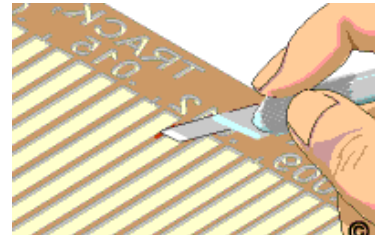
Sample of replacement surface mount pads.



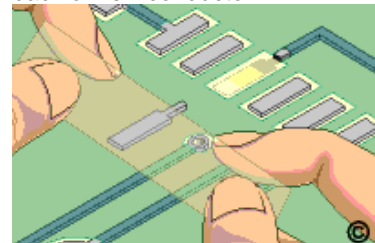
1. Remove the damaged pads and prepare the area.



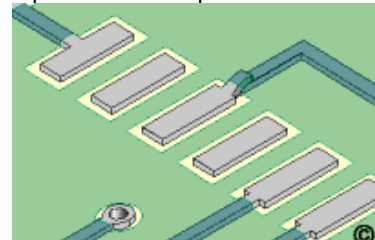
2. Select a replacement pad and trim it out from the Circuit Frame.



3. Scrape off epoxy bonding film from solder joint connection area on back of new conductor.



4. Place the pad in position using tape and bond in place.



5. Complete the connection to the existing circuit.



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NOTE Ⓞ : Effective May 1, 2013, all Circuit Frames will use a Nitrile Phenolic film adhesive backing. This adhesive contains less than 0.1% by weight any substance listed as a very high concern in /Article 59 of REACH. This product does not exceed the maximum concentration values in RoHS EU Directive 2002/95/EC. The Nitrile Phenolic film adhesive will appear slightly different from the prior adhesive. However, it possesses near identical properties. Please refer to the specifications provided for physical characteristics.

Circuit Frame Table

Frame Number	Order Number	Surface Mount Pad Frames	Plating	Bonding Tip	Load
CS004085AS	118-2215	Surface Mount Pads .004" x .085" (0.10 mm x .20 mm)	Tin	118-1861	A
CS012060AS	118-2220	Surface Mount Pads .012" x .060" (0.30 mm x 1.52 mm)	Tin	118-1860	A
CS012100AS	118-2221	Surface Mount Pads .012" x .100" (0.30 mm x 2.54 mm)	Tin	118-1863 *	A
CS020028AS	118-2227	Surface Mount Pads .020" x .028" (0.508 mm x 0.711 mm)	Tin	118-1864	A
CS025080AS	118-2232	Surface Mount Pads .025" x .080" (0.63 mm x 2.03 mm)	Tin	118-1861	B
CS025080BS	118-2233	Surface Mount Pads .025" x .080" (0.63 mm x 2.03 mm)	Tin	118-1861	B
CS025100AS	118-2236	Surface Mount Pads .028" x .050" (0.71 mm x 1.27 mm)	Tin	118-1866 *	A
CS028185AS	118-2242	Surface Mount Pads .028" x .185" (0.71 mm x 4.70 mm)	Tin	118-1867	C
CS030055AS	118-2243	Surface Mount Pads .030" x .055" (0.76 mm x 1.40 mm)	Tin	118-1866 *	B
CS034030AS	118-2244	Surface Mount Pads .034" x .030" (0.86 mm x 0.76 mm)	Tin	118-1864	A
CS038090AS	118-2245	Surface Mount Pads .038" x .090" (.97 mm x 2.28 mm)	Tin	118-1863	B
CS040070AS	118-2248	Surface Mount Pads .040" x .070" (1.01 mm x 1.77 mm)	Tin	118-1866	B
CS040110AS	118-2249	Surface Mount Pads .040" x .110" (1.01 mm x 2.80 mm)	Tin	118-1863	B
CS045110AS	118-2250	Surface Mount Pads .045" x .110" (1.14 mm x 2.80 mm)	Tin	118-1863	B
CS046106AS	118-2252	Surface Mount Pads .046" x .106" (1.17 mm x 2.70 mm)	Tin	118-1863	B
CS048068AS	118-2255	Surface Mount Pads .048" x .068" (1.22 mm x 1.73 mm)	Tin	118-1866	B
CS050050AS	118-2256	Surface Mount Pads .050" x .050" (1.27 mm x 1.27 mm)	Tin	118-1864	B
CS051087AS	118-2258	Surface Mount Pads .051" x .087" (1.30 mm x 2.21 mm)	Tin	118-1855	B
CS060080AS	118-2260	Surface Mount Pads .060" x .080" (1.52 mm x 2.03 mm)	Tin	118-1866	B
CS065055AS	118-2261	Surface Mount Pads .065" x .055" (1.65 mm x 1.40 mm)	Tin	118-1866	B
CS065095AS	118-2262	Surface Mount Pads .065" x .095" (1.65 mm x 2.41 mm)	Tin	118-1868	C
CS067173AS	118-2263	Surface Mount Pads .067" x .173" (1.70 mm x 4.39 mm)	Tin	118-1869 *	D
CS071106AS	118-2268	Surface Mount Pads .071" x .106" (1.80 mm x 2.69 mm)	Tin	118-1868	C
CS090100AS	118-2272	Surface Mount Pads .090" x .100" (2.28 mm x 2.54 mm)	Tin	118-1857	C
CS095095AS	118-2273	Surface Mount Pads .095" x .095" (2.41 mm x 2.41 mm)	Tin	118-1870	C
CS130177AS	118-2278	Surface Mount Pads .130" x .177" (3.30 mm x 4.42 mm)	Tin	Custom	E



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Frame Number	Order Number	Ball Grid Array Pad Frames	Plating	Bonding Tip	Load
CS015020AS	118-2223	BGA Pads .015"/.020" (0.38 mm x 0.50 mm) Diameter	Tin	118-1852	A
CS020025AS	118-2225	BGA Pads .020"/.025" (0.38 mm x 0.63 mm)	Tin	118-1866	A
CS025035AS	118-2231	BGA Pads .025"/.035" (0.63 mm/.89 mm) Diameter	Tin	118-1853	A
CS051063AS	118-2257	BGA Pads .051"/.063" (1.29 mm/1.60 mm) Diameter	Tin	118-1855	B
Frame Number	Order Number	Conductor Frames	Plating	Bonding Tip	Load
CT006015AS	118-2282	Conductor Tracks .006"/.015" (0.15 mm/0.38 mm)	Tin	118-1867 *	**
CT006025AS	118-2283	Conductor Tracks .006"/.025" (0.15 mm/0.63 mm)	Tin	118-1867	**
Frame Number	Order Number	Variety Frames	Plating	Bonding Tip	Load
CFV002AS	118-2279	Variety	Tin	Variety	**
CVAR0001AS	118-2287	Variety .010" Track (0.254 mm)	Tin	Variety	**
CBLANKAS	118-2121	Circuit Frame, Blank	Tin	Variety	**
Frame Number	Order Number	Gold Edge Contact Frames	Plating	Bonding Tip	Load
CBLANKAG	118-2120	Circuit Frame, Blank	Gold	Variety	**
CC035080AG	118-2122	Gold Edge Contacts .035" x .080" (0.89 mm x 2.03 mm)	Gold	118-1866 *	B
CC038255AG	118-2123	Gold Edge Contacts .038" x .250" (0.97mm x 6.35 mm)	Gold	118-1867 *	C
CC050060AG	118-2124	Gold Edge Contacts .050"/.060" (1.27 mm/1.52 mm)	Gold	118-1867	F
CC050300AG	118-2125	Gold Edge Contacts .050" x .300" (1.27 mm x 7.62 mm)	Gold	118-1867*	E
CC070080AG	118-2127	Gold Edge Contacts .070"/.080" (1.78 mm/2.03 mm)	Gold	118-1869	F
CC070210AG	118-2128	Gold Edge Contacts .070" x .210" (1.78 mm x 5.33 mm)	Gold	118-1869	F
CC076190AG	118-2129	Gold Edge Contacts .076" x .190" (1.93 mm x 4.83 mm)	Gold	118-1869*	D
CC085360AG	118-2131	Gold Edge Contacts .085" x .360" (2.16 mm x 9.14 mm)	Gold	118-1869	F
CC090300AG	118-2132	Gold Edge Contacts .090" x .300" (2.28 mm x 7.62 mm)	Gold	118-1871	F
CC094230AG	118-2133	Gold Edge Contacts .094" x .230" (2.39 mm x 5.84 mm)	Gold	118-1871	D
Frame Number	Order Number	Land Frames	Plating	Bonding Tip	Load
CP050060AS	118-2201	Lands .050"/.060" (1.27 mm/1.52 mm)	Tin	118-1853	C
CP067267AS	118-2203	Lands .067" x .267" (1.70 mm/6.78 mm)	Tin	118-1869 *	E
CP070080AS	118-2204	Lands .070"/.080" (1.78 mm/2.03 mm)	Tin	118-1855	C
CP090100AS	118-2205	Lands .090"/.100" (2.28 mm/2.54 mm)	Tin	118-1857	D
CP090100BS	118-2206	Lands .090" x .100" (2.28 mm x 2.54 mm)	Tin	118-1857	C
CP140210AS	118-2208	Lands .142" ID x 210" OD (3.60 mm ID x 5.33 mm OD)	Tin	Custom	F
CP156097AS	118-2209	Lands .156 OD x .097 ID (3.96 mm OD x 2.46 mm ID)	Tin	Custom	F
CP250125AS	118-2210	Lands .250" OD x .125" ID (6.35 mm OD x 3.18 mm ID)	Tin	Custom	F

Bonding Tip

Bonding Tip listing in the above table is the recommended Bonding Tip to use with the particular Circuit Frame.

* Indicates that the closest size Bonding Tip has been listed, a custom size Bonding Tip may be required.

** Indicates that Bonding Loads will vary depending on the particular circuit selected from the Circuit Frame.



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Manual Bonding Load Table

Circuit Surface Area	Load	Setting	Hand Bonding Setting
Up to .002 in ² Up to 1.29 mm ²	4 oz. (113 grams)	A	A - Very Light Load Approximately equal to the weight of the Bonding Iron.
.002 in ² to .005 in ² 1.30 mm ² to 3.22 mm ²	8 oz. (227 grams)	B	B - Light Load Slightly less than twice the weight of the Bonding Iron.
.005 in ² to .010 in ² 3.22 mm ² to 6.45 mm ²	12 oz (340 grams)	C	C - Light Load Slightly greater than twice the weight of the Bonding Iron.
.010 in ² to .015 in ² 6.45 mm ² to 9.67 mm ²	24 oz. (680 grams)	D	D - Medium Load Approximately half the resting weight of your arm.
.015 in ² to .025 in ² 9.67 mm ² to 16.13 mm ²	32 oz. (907 grams)	E	E - Firm Load Slightly less than the resting weight of your arm.
.025 in ² and greater 16.13 mm ² and greater	48 oz. (1361 grams)	F	F - Firm Load Approximately equal to the resting weight of your arm.

Bonding Loads

To obtain the maximum bond of the Circuit Frame to the circuit board surface, the proper Bonding Tip temperature, Bonding Tip time, and Bonding Tip load are required. The Bonding Load is based upon the approximate surface area of the replacement circuit. Bonding Irons are included in several repair kits or available separately.

Settings A through F are listed on the Calibration Slide of the Bonding System.

- *Country of Origin : United States of America (USA)*