



# Customized Silver Paste Product Lines

Parameter	Test/ Measure	DX-30	DX-09E	DX-09G-4	DX-23
Viscosity (cP) @25deg.C	E-viscometer @5rpm	8,500 ± 1,000	20,000 ± 5,000	20,000 ± 5,000	45,000±5,000
Thixotropic index @25deg.C	0.5rpm/5rpm	4.0	--	--	1.1
Volume resistance	Ohm.cm	1*10 <sup>-4</sup>	5*10 <sup>-5</sup>	8*10 <sup>-5</sup>	~10 <sup>-4</sup>
Curing condition		130 °C for 60min	80 °C for 30min	80 °C for 30min	180 °C for 20sec
Recommended process		Dispensing	Dispensing	Dispensing	Dispensing
Application		Electronics Joint	Electronics Joint	Electronics Joint	Electronics Joint
Remark				Low Temp. Curing Good adhesion on metal finishes	Snap Curing



		Pure Silver Sintering Paste			175°C Curing Pure Silver Sintering	Hybrid Silver Sintering Paste		Conductive Silver Paste		
Parameter	Test/Measure	DN-1206QB	DN-1206CR	DN-1208	DN-1301B	DN-1806	DN-1906	DN-1705	DN-1715	DN-1718
Viscosity @25deg.C	E-viscometer@5rpm	11,000	10,000	12,000	13,000	14,000	16,000	8,500	8,000	9,100
Thixotropic Index @25deg.C	0.5rpm/5rpm	5.5	6	3.0	5.5	7.0	3.85	5.2	5.3	4.84
Open Time (for 1*1 mm2 die size)	Hour	6	3	6	6	4	4	6	8	3
Volume Resistance	Ohm.cm	$5.5*10^{-6}$	$9.0*10^{-6}$	$3.9*10^{-6}$	$2.5*10^{-6}$	$9.0*10^{-5}$	$9.2*10^{-5}$	$4.0*10^{-4}$	$2.4*10^{-5}$	$3*10^{-5}$
Thermal Conductivity	W/mk	140	120	230	130	85	70	2	15	22
Die Shear Strength @25 Deg.C with 2*2 mm Ag BSM Die	On Ag/Cu LF (Mpa)	35	40	100	32	30	28	37	30	42.8 (1x1 for Au)
	On Cu PCB (Mpa)	15	25	12	25	22	20	45	30	
Die Shear Strength @260 Deg.C 2*2 mm Ag BSM Die	On Ag/Cu LF (Mpa)	15	15	100	19	10	10	7	8	4.3 (1x1 for Au)
	On Cu PCB (Mpa)	10	10	12	12	12	11	7	8	
Storage Modulus@25 Deg.C	GPa	15.1	13	18	18	6.8	5.3	8.7	12	10
Tg	dC					72	78	73	121	120
CTE	ppm	40	30	15.2	51	25/79	25/79	40/182	49/160	50/160
Product Benefit		1.Good Reliability 2.Long open time	1.For printing & dispensing 2.Chemical resistance	1.Extreme high TC 2.Great adhesion on Ag & Au finish	1.Good workability 2.Long open time 3.Less CTE mismatch	1.Good Workability 2.Solution for die size up to 15*15mm2	1.Good Workability 2.Solution for die size up to 15*15mm2	1.Low modulus 2.High adhesion on Ag, Au & Cu finish	1.Good TC 2.Good reliability	1.Good TC 2.Good reliability



# Screen Printing Silver Paste Product Lines

Parameter	Test/ Measure	PL-09F	PL-10	PS-07
Viscosity (cP) @25deg.C	E-viscometer @5rpm	30,000 ± 5,000	25,000 ± 5,000	27,000 ± 5,000
Thixotropic index @25deg.C	0.5rpm/ 5rpm	2.9	6.0	5.0
Volume resistance	Ohm.cm	5*10 <sup>-5</sup>	8*10 <sup>-5</sup>	2*10 <sup>-5</sup>
Curing condition		130 °C for 30min	130 °C for 30min	130 °C for 30min
Recommended process		Screen printing/ Laser stripping	Screen printing/ Laser stripping	Screen printing
Application		Touch Panel	Touch Panel	Fine Pitch Screen
Remark		Resolution (L/S): ≥200/200 um (Screen) ≥30/30 um (Laser)	Resolution (L/S): ≥150/150 um (Screen) ≥30/30 um (Laser)	Resolution (L/S): ≥100/100 um (Screen)