C O N T E N T S

Contents

BATTEN & ALLEN
PROGRESSION IN STAMPING

Tel: +44(0)1285 655220
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sales@batten-allen.co.uk
www.batten-allen.com

Quality Policy Statement

Batten and Allen Ltd is a designer / manufacturer and electroplater of precision stampings, with over forty years experience. We provide parts for electronics, medical, automotive, telecommunications and solar applications from our base in Cirencester UK. We supply hundreds of millions of components worldwide each month.

It is our policy to improve the performance of our Management System through a continuous programme of data collection, analysis and action. The purpose of our Management System is to satisfy or exceed customer expectations; helping us to maintain or improve the high standard of products and services that we provide. In addition to improving our performance we will reduce our environmental impact by complying with relevant environmental legislation and through progress towards our targets and objectives.

We are also committed to continual improvement, prevention of pollution and reducing risks associated with emergency situations (such as fire, flood and chemical release). To this end we will appraise our performance during management review, and also review our targets and objectives to ensure that they remain appropriate.

This policy will be communicated to all company employees and subcontractors and is available to all interested parties, including the public, on request, or by visiting our company web site (www.batten-allen.com).

Alan Batten
Chairman

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Pre Plating Specification

Type of plating: Hot Tin Dip

Plating Code: **1A** = 100% Sn

RoHS Compliant

Thickness: 3 to 7 Microns

Shelf life: 1 Year from date of despatch:
Depending on storage conditions

Finish: Bright

Melting Point: 232°C (Approx)

Ageing test: Test to be performed in accordance with BS 2011 Test "Ta"

Method 1 (Solder Bath Method)
1) Accelerated ageing for 16 hours @ 155°C
2) Immersion in SM/NA flux for 5 seconds
3) Immersion in solder at 250°C ±5°C for 5 seconds, No Dewetting Permissible

Additional test on request:-

Hot Plate test:

Place material on Hot Plate at 325°C minimum for
Both sides of material to be inspected,
Top side to be considered as test side.
No Dewetting Permissible.
Pin holes acceptable (Areas less than 0.125mm)
Maximum of 20 per 50mm² area

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Post Plating Specification

Type of plating: Electroplated

Plating Code: 4 to 8 Microns Pure Tin, Matt Finish (Non Reflow)

4A Pure Tin
4B Nickel flash under Pure Tin
4C 0.25 Micron Min Nickel under Pure Tin

The Nickel Flash is believed to reduce the risk of Tin whiskers forming, but can cause the tin to discolour during the reflow process. The discolouration does not affect the solderability.

The advantage of post plating over pre plating is that there are no bare edges and therefore a better solder joint should be achieved.

Other plating specifications on request include
4 to 8 Microns 60/40 Tin/Lead for RoHS exempt products designation "2A"

Shelf Life: 1 Year from date of despatch:
Depending on storage conditions

Melting Point: Pure Sn 231.9°C

Ageing test: Test to be performed in accordance with BS 2011: Part 2.1T:1981 Method 1, ageing 3.
1) Accelerated ageing for 16 hours @ 155°C
2) Immersion in non-activated flux for 5 seconds
3) Immersion in solder at 235°C ±5°C for 5 seconds
The dipped surface shall be covered with a smooth bright solder coating with no more than small amounts of scattered imperfections such as pin holes and dewetting. Within the significant surface these imperfections shall not exceed 5% of the area.

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Base Material Specification

Material Designation	**Alloy:**	Copper Tin	(Phosphor Bronze)
	DIN		CuSn6
	Designation		2.1020
	UNS		C51900
	BS		PB103
	NF		CuSn6P
Composition (nominal)	**Weight Percentage**		Cu 94 Sn 6
Physical Properties (nominal)	**Electric Conductivity**	m/Ωmm²	9.0
		% IACS	15
	Thermal Conductivity	W/m K	75
	Coefficient of Thermo Expansion	10^{-6}/K	18.5
	Elastic Modulus	KN/mm²	118
	Density	g/cm³	8.8

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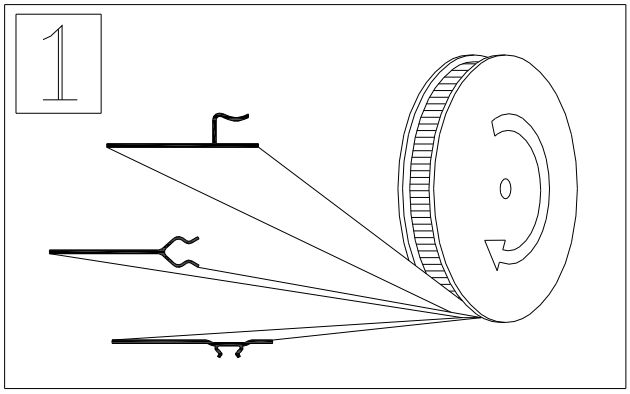
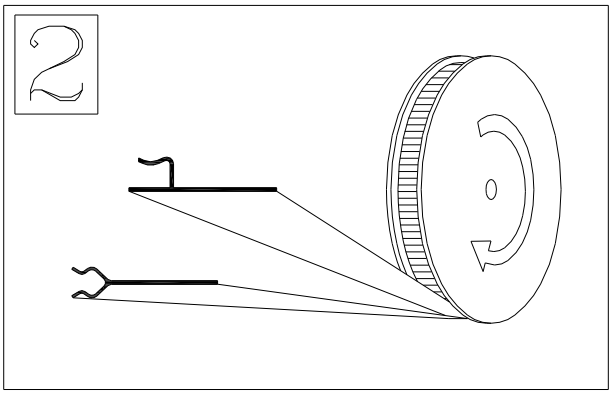
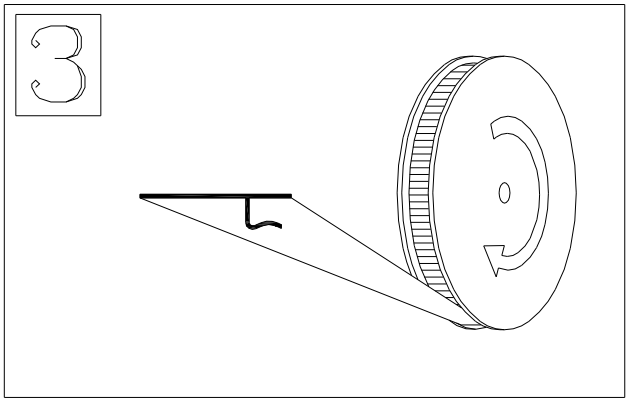
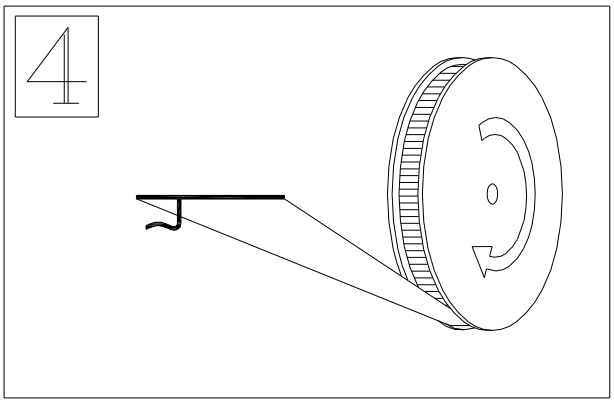
Winding Styles

Single In Line Winding Styles

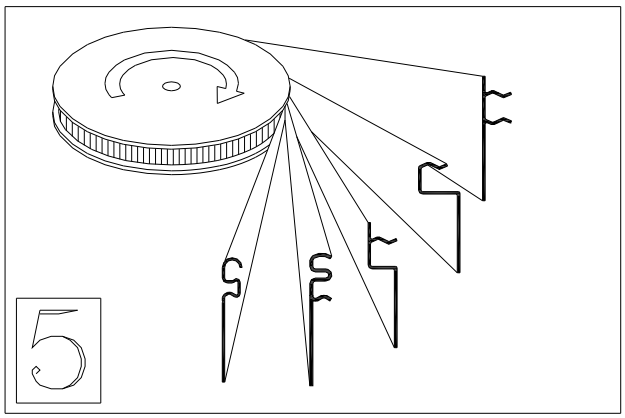


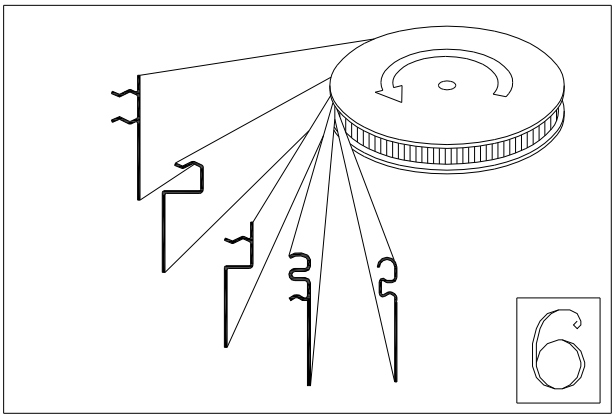


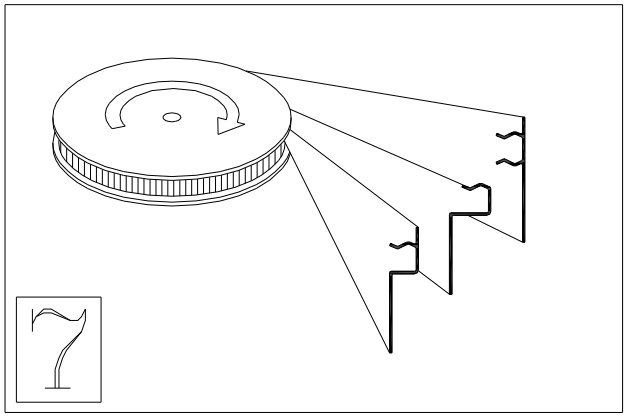


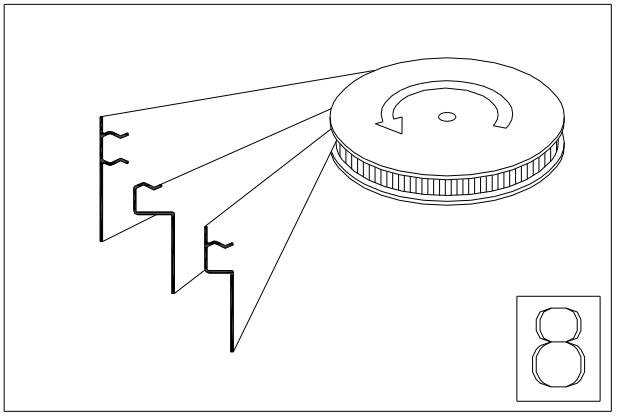


Dual In Line Winding Styles



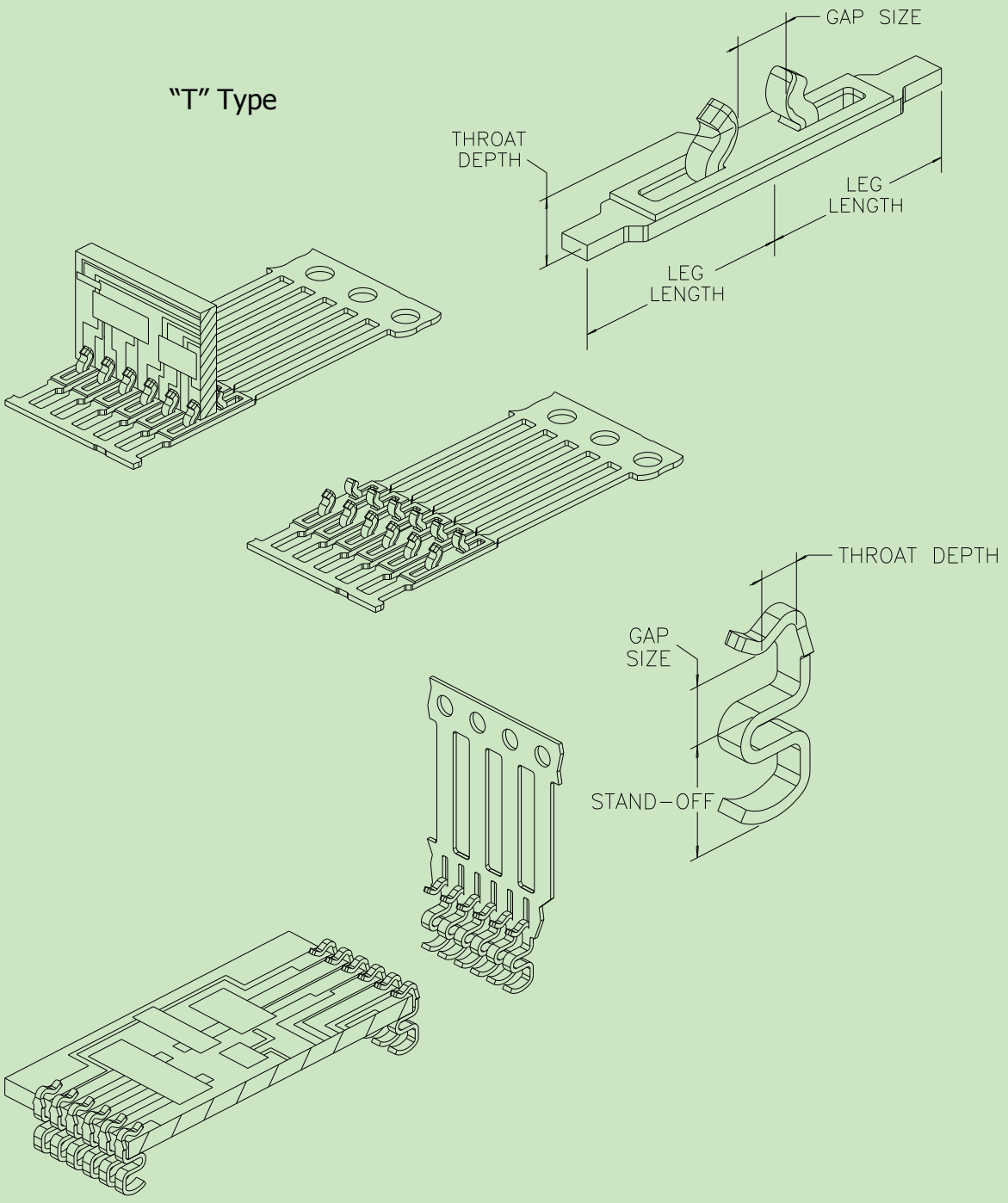






Surface Mount Leadframes

"T" Type



Clip Design & Series Numbers

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SM6700-UBBF-A1-4A-G1

EXAMPLE OF POSSIBLE ORDER CODE

Part Number	Top Bar *T*	Bottom Bar *B*	On Lay Style	Plating Code	Quantity Per Reel	Wind Style
SM6700	UB	BF	A1	4A	G	1

Series & Part Number

Top Bar Break

Bottom Bar Break Off

On Lay Style

Plating Specification

Quantity Per Reel

Winding Style

THE PATTERNS ILLUSTRATED IN THIS CATALOGUE ARE OPEN TOOLED AND MANY ARE AVAILABLE FROM STOCK, UNLESS NOTED AT THE BOTTOM OF EACH PAGE, THEN A MINIMUM ORDER QUANTITY APPLIES. PLEASE EMAIL, FAX OR TELEPHONE TO CONFIRM PRICE AND AVAILABILITY. IF YOUR REQUIREMENT IS NON-STANDARD, PLEASE DO NOT HESITATE TO CONTACT OUR SALES TEAM

Keith Hanning
Sales Manager

Steve Mitchell
Sale Engineer

SML Component Ordering Key

Break Off				On Lay Specifications				Plating Specifications		Quantity Per Reel		Winding Style	
Top Bar T.B.B.O.		Bottom Bar B.B.B.O.										See Winding Style Page For more Details	
Code	Size	Code	Size	Code	On Lay Type	Code	Th'k	Code	Type of Plating	Code	Quantity		
TZ	None	BZ	None							E	40,000	1	SIL
UB	4.0mm	BF	4.0mm			1	0.1mm			F	50,000	2	SIL
UF	3.00mm	BR	12.78mm							G	80,000	3	SIL
		BS	7.24mm									4	SIL
				B	Sn96.5%	3	0.03mm	4A	POST-PLATE ELECTROLYTIC Pure Sn 4-8 MICRONS No Reflow Matt			5	DIL
					Ag3.5%							6	DIL
												7	DIL
												8	DIL

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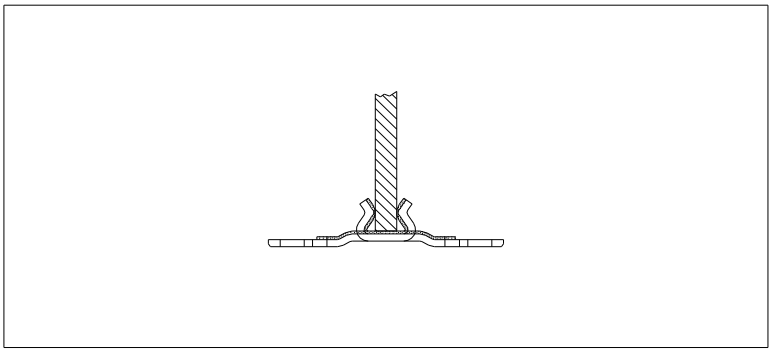
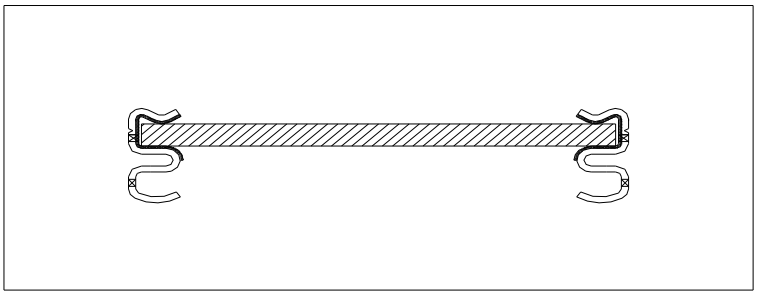
SML Clip Design And Series Numbers



Series	Pitch	Strip Width	Substrate Size	Material Thickness	Page
SM6700	1.27mm	18.1mm	0.85 to 1.08mm	0.25mm	70
SM6900	2.54mm	18.1mm	0.96 to 1.11mm	0.25mm	72

SML Clip Design And Series Numbers



Series	Pitch	Strip Width	Substrate Size	Material Thickness	Page
SM6800	1.27mm	15.8mm	0.64– 0.75mm	0.25mm	71
SM7600	1.91mm	11.2mm	0.86-1.00mm	0.20mm	73

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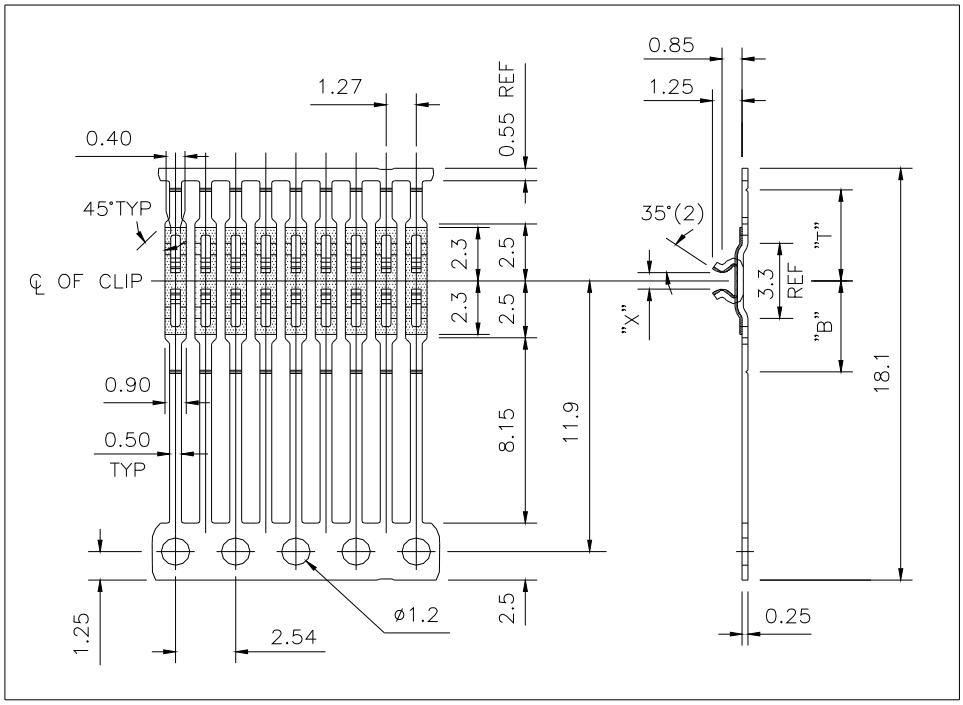

SML SM6700
SERIES
SHEET 1 OF 1

Pitch
1.27 mm
0.050 inch

Strip Width
18.1mm
0.713 inch

Material Thickness
0.25mm
0.010 inch

Technical Information

Ordering Information

Substrate Size	Gap Size *X*	Stand Off	Clip Length	Part Number	Top Bar *T*	Bottom Bar *B*	On Lay Code	Plating Code	Quantity Per Reel	Wind Style
1.00-1.08mm 0.039-0.045"	**0.90mm** 0.035"		**1.05mm** 0.041"	**SM6700**	**UB TZ**	**BF BZ**	**B3**	**4A**	**G (80K)**	**5 to 8**
0.85-1.00mm 0.033-0.039"	**0.73mm** 0.029"	**Sized on Ass'y To Suit FR4**	**1.05mm** 0.041"	**SM6701**	**UB TZ**	**BF BZ**	**B3**	**4A**	**G (80K)**	**5 to 8**
0.87-0.94mm 0.034-0.037"	**0.79mm** 0.031"		**1.05mm** 0.041"	**SM6702**	**UB TZ**	**BF BZ**	**B3**	**4A**	**G (80K)**	**5 to 8**

*Shaded Part Numbers are subject to Minimum Order Quantities of 480,000

EXAMPLE OF POSSIBLE ORDER CODE

Part Number	Top Bar *T*	Bottom Bar *B*	On Lay Code	Plating Code	Quantity Per Reel	Wind Style
SM6700	**UB**	**BF**	**B3**	**4A**	**G**	**5**

Other plating styles on request

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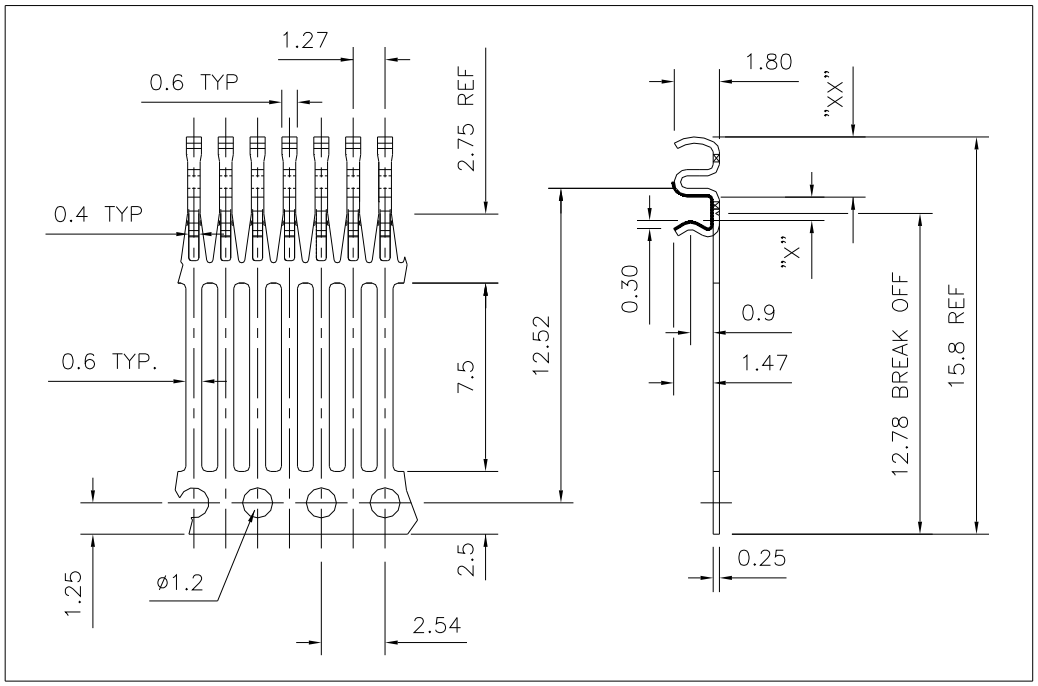

SML SM6800
SERIES
SHEET 1 OF 1

Pitch
1.27 mm
0.050 inch

Strip Width
15.8mm
0.622 inch

Material Thickness
0.25mm
0.010 inch

Technical Information				Ordering Information						
Substrate Size	Gap Size *X*	Stand Off *XX*	Clip Length	Part Number	Top Bar *T*	Bottom Bar *B*	On Lay Code	Plating Code	Quantity Per Reel	Wind Style
0.64-0.75mm 0.025-0.029"	**0.58mm** 0.0228"	**2.3mm** 0.091"	**1.47mm** 0.058"	**SM6800**	**TZ**	**BR**	**B3**	**4A**	**G (80K)**	**5 to 8**

*Shaded Part Numbers are subject to Minimum Order Quantities of 480,000

EXAMPLE OF POSSIBLE ORDER CODE

Other plating styles on request

Part Number	Top Bar *T*	Bottom Bar *B*	On Lay Code	Plating Code	Quantity Per Reel	Wind Style
SM6800	**TZ**	**BR**	**B3**	**4A**	**G**	**5**

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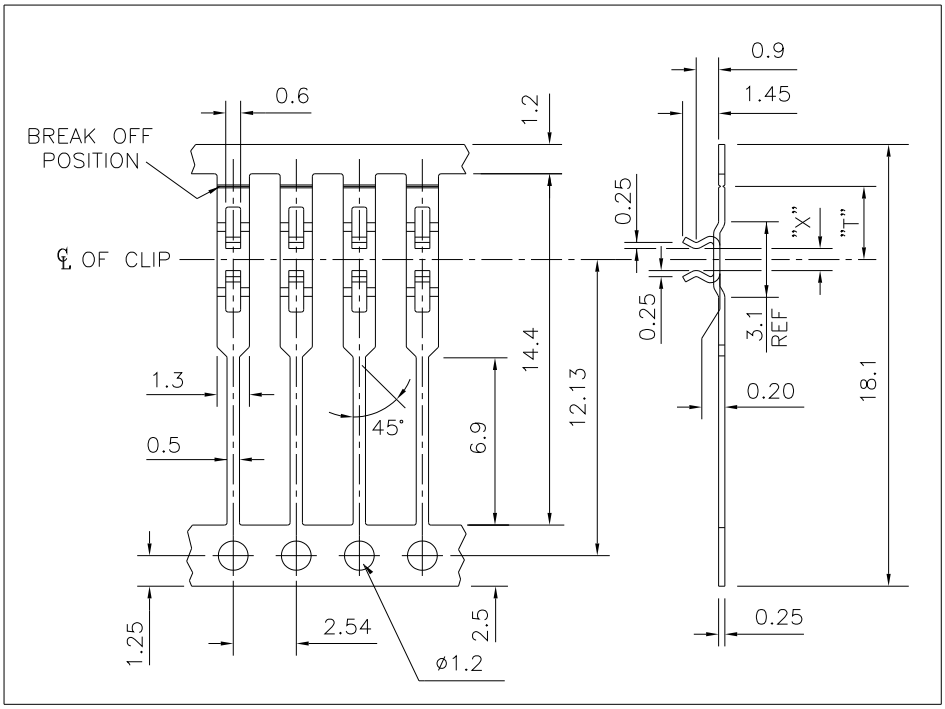

SML SM6900
SERIES
SHEET 1 OF 1

Pitch
2.54 mm
0.100 inch

Strip Width
18.1mm
0.713 inch

Material Thickness
0.25mm
0.010 inch

Technical Information				Ordering Information						
Substrate Size	Gap Size *X*	Stand Off *XX*	Clip Length	Part Number	Top Bar *T*	Bottom Bar *B*	On Lay Code	Plating Code	Quantity Per Reel	Wind Style
0.96-1.11mm 0.038-0.044"	**0.92mm** 0.036"	**-**	**1.45m** 0.057"	**SM6902**	**UF**	**BZ**	**-**	**4A**	**E (40K)**	**5 to 8**

*Shaded Part Numbers are subject to Minimum Order Quantities of 480,000

EXAMPLE OF POSSIBLE ORDER CODE

Other plating styles on request

Part Number	Top Bar *T*	Bottom Bar *B*	Plating Code	Quantity Per Reel	Wind Style
SM6902	**UF**	**BZ**	**4A**	**E**	**5**

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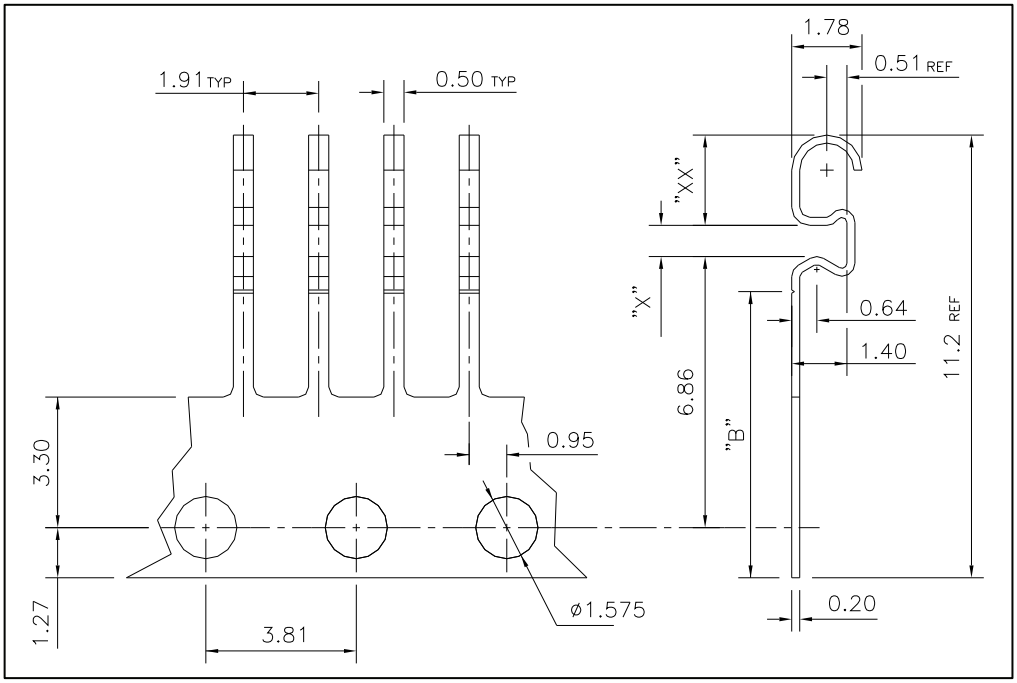

SML SM7600
SERIES
SHEET 1 OF 1

Pitch
1.91 mm
0.075 inch

Strip Width
11.2mm
0.441 inch

Material Thickness
0.20mm
0.008 inch

Technical Information				Ordering Information						
Substrate Size	Gap Size *X*	Stand Off *XX*	Clip Length	Part Number	Top Bar *T*	Bottom Bar *B*	On Lay Code	Plating Code	Quantity Per Reel	Wind Style
0.86-1.00mm 0.034-0.039"	**0.79mm** 0.031"	**2.3mm** 0.090"	**1.40mm** 0.055"	**SM7600**	**TZ**	**BS**	**-**	**4A**	**E (40K)**	**5 to 8**

*Shaded Part Numbers are subject to Minimum Order Quantities of 480,000

EXAMPLE OF POSSIBLE ORDER CODE

Part Number	Top Bar *T*	Bottom Bar *B*	Plating Code	Quantity Per Reel	Wind Style
SM7600	**TZ**	**BS**	**4A**	**E**	**5**

Other plating styles on request

Assembly Systems

Single in Line
&
Dual in Line

Please Contact
Batten & Allen Ltd
For details of a range of Assembly Systems from Hand Operated to Fully Automatic.