SOFT SMD CONTACT

INTRODUCTION

Laird Soft SMD (Surface Mount Device) Contact is used for circuit grounding and shielding of SMT (Surface Mount Technology) devices. This contact is designed to be solder reflow compatible and suitable for automatic processing.

PRODUCT SERIES DEFINITION

Laird offers several series of Soft SMD Contact:

HB-SMD (SLG/SLH SERIES)

- Metalized PI film over PU foam, rectangular shape (SLG series) or hourglass shape (SLH series).

HT-SMD (SLM/SSM SERIES)

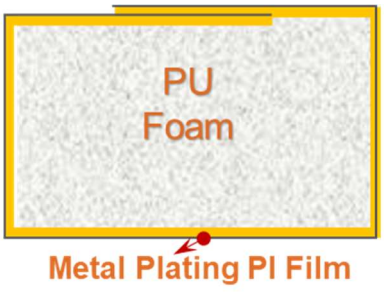
- Metalized PI film over silicone foam, rectangular shape in general; two different compression strength for selection; customized dimension available for SSM series.

ULH-SMD

- Electrically conductive elastomer with metalized fabric, designed for low height (0.6mm-1.5mm) or small width/length, and available for further customized shape by die-cutting.

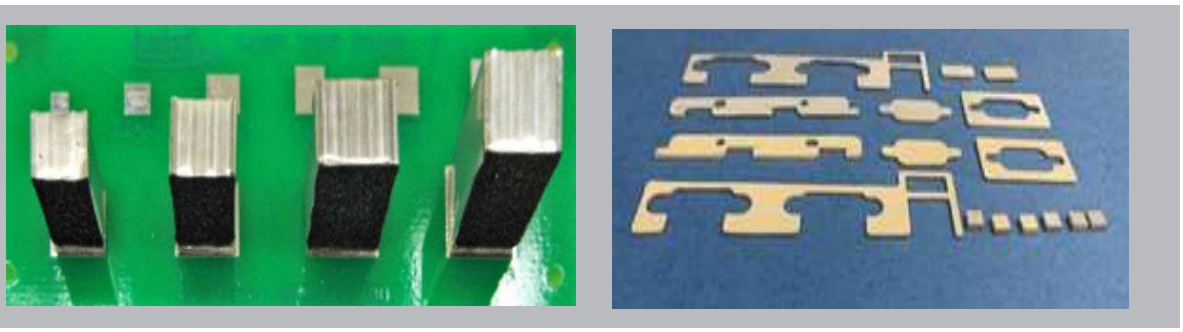
CONSTRUCTION

HB-SMD (SLG/SLH SERIES)



HT-SMD (SLM/SSM SERIES)

ULH-SMD SERIES



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SOFT SMD CONTACT

SELECTION TABLE

Series		Elastomer Based	Operation Temperature	Flame Retardance	Dimensions (mm)			Profile
					Height	Width	Length	
HB-SMD	SLG	PU	85°C	UL94 HB	≥2	≥2	≥2	Rectangular
	SLH	PU	85°C	UL94 HB	≥4	≥4	≥2	Hourglass shape
HT-SMD	SLM	Silicone	125°C	UL94 V1	1.8, 2.5, 3.4, 4.8, 6.5	≥2	≥2	Rectangular
	SSM	Silicone	125°C	UL94 V1	1.8, 2.5, 3.4, 4.8, 6.5**	≥3*	≥2	Rectangular**
ULH-SMD	ULH	Silicone	125°C	UL94 V1 equivalent	0.6, 0.8, 1.0, 1.2, 1.5	≥1	1-5	Rectangular***

* SSM series with Min. width of 1.8mm to be launched in Q3 CY20

** SSM series available for customized height and shape

*** Shapes of ULH-SMD can be further customized by die-cutting

FEATURES

HB-SMD (SLG/SLH SERIES)

- Metalized PI film over PU foam
- Rectangular shape (SLG series) or hourglass shape (SLH series)

HT-SMD (SLM/SSM SERIES)

- Metalized PI film over silicone foam
- Rectangular shape (standard types)
- Different compression strength available
- SSM series with customized dimensions

ULH-SMD

- Electrically conductive elastomer with metalized fabric
- Miniature profile - 0.6mm-1.5mm for height
- Shapes customizable

MARKETS

- Consumer Electronics
- Automotive

SOFT SMD CONTACT

SPECIFICATION

SLG/SLH SERIES (HB-SMD)

Item	Unit	Value	Test Method
Z-axis Resistance @30% Compression			Laird Internal
before reflow	Ω	<0.06	(5mm x 5mm x 5mm)
after reflow	Ω	<0.10	
Flammability		PASS	UL94 HB*
Solder Adhesion Strength (contact to PCB)	Kgf	> 0.2	Laird Internal method (3mm x 3mm x 3mm)
Hardness (Shore A)	durometer	<20	ASTM D 2240
Compression Set	%	<20%	ASTM D3574(70°C,22hr)
Operation Temperature	°C	-40 to 85	

*UL file number E170327, UL designation code HB026

SLM/SSM SERIES (HT-SMD)

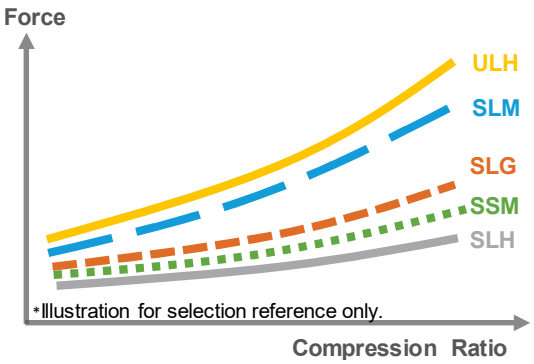
Item	Unit	Value	Test Method
Z-axis Resistance @30% Compression			Laird Internal
before reflow	Ω	<0.06	(5mm x 5mm x 5mm)
after reflow	Ω	<0.10	
Flammability		PASS	UL94 V1*
Solder Adhesion Strength (contact to PCB)	Kgf	>0.2	Laird Internal (3mm x 3mm x 3mm)
Compression Set	%	<20%	ASTM D3574(125°C,22hr)
Operation Temperature	°C	-40 to 125	

*UL file number E170327, UL designation code V1 051

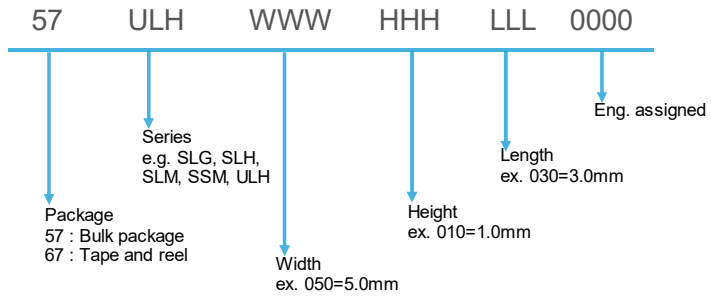
ULH-SMD

Item	Unit	Value	Test Method
Z-axis resistance @30% compression, after reflow	Ω	<0.2	Laird internal method 5mmW x 5mmL x 1mmH
Flammability		PASS	UL94 V1 equivalent
Hardness, Shore A	-	<30	ASTM D2240
Solder Adhesion Strength (contact to PCB)	gf	>180	Laird internal method 5mmW x 5mmL x 1mmH
Compression Set	%	<20%	ASTM D3574(125°C,22hr)
Operation Temperature	°C	-40 to 125	

COMPRESSION FORCE



PART NUMBER STRUCTURE



Ex. "67ULH050010030PI00" for ULH-SMD in dimension of 5mmW x 1mmH x 3mmL

SHELF LIFE

12 months at 23°C / 60% R.H.

SELECTION OF FLUX

- Flux identification matrix is below.

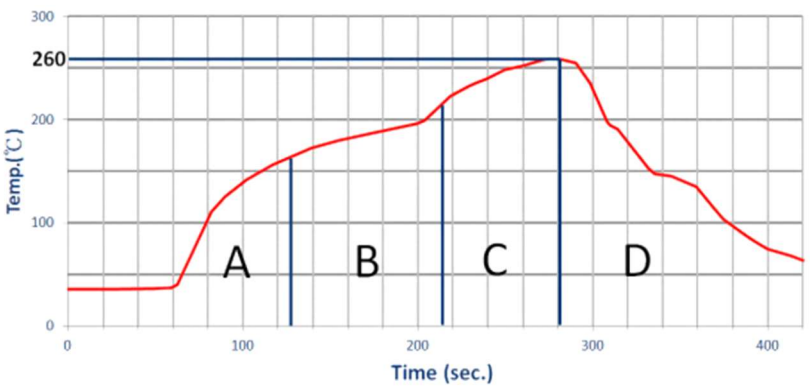
Flux Composition	Flux/Flux Residue Activity Levels	% Halide[1] (by weight)	Flux Type[2]	Flux Designator
Rosin (RO)	Low	<0.05%	L0	ROL0
		<0.5%	L1	ROL1
	Moderate	<0.05%	M0	ROM0
		0.5-2.0%	M1	ROM1
	High	<0.05%	H0	ROH0
		>2.0%	H1	ROH1
Resin (RE)	Low	<0.05%	L0	REL0
		<0.5%	L1	REL1
	Moderate	<0.05%	M0	REM0
		0.5-2.0%	M1	REM1
	High	<0.05%	H0	REH0
		>2.0%	H1	REH1
Organic (OR)	Low	<0.05%	L0	ORL0
		<0.5%	L1	ORL1
	Moderate	<0.05%	M0	ORM0
		0.5-2.0%	M1	ORM1
	High	<0.05%	H0	ORH0
		>2.0%	H1	ORH1
Inorganic (IN)	Low	<0.05%	L0	INL0
		<0.5%	L1	INL1
	Moderate	<0.05%	M0	INM0
		0.5-2.0%	M1	INM1
	High	<0.05%	H0	INH0
		>2.0%	H1	INH1

1. Halide measuring <0.05% by weight in flux solids and may be known as halide-free. This method determines the amount of ionic halide present
2. The 0 and 1 indicate the absence or presence of halides, respectively.

Source : IPC J-STD-004B

- Flux with low solid content, level 0 is preferred.

REFLOW TEMPERATURE PROFILE RECOMMENDATION



REFLOW TEMPERATURE PROFILE RECOMMENDATION

Stage	Condition Temperature	
Preheating Stage	Room Temp.-170°C	125sec
Heating/Soaking Stage	170-217°C	92sec
Reflow Stage	217-Peak Temp.(～265°C Max)	63sec
Cooling Stage	Peak Temp.-Room Temp.	>60sec

- Longer residual time or higher peak temperature may damage the Soft SMD Contact.
- Reflow at 265°C shall be less than 5 seconds.
- Air flow rate shall be set at 0.5-1.6 meters/sec for reflow ovens heated by air.
- For reflow ovens with 8 different zones or more, below are temperature setting for reference.

Temperature Setting (°C)	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
Top side	155	170	180	200	210	230	255	260
Bottom side	155	170	180	200	210	230	255	260

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