

# FrelTec GmbH

Mathildenstr. 10A  
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Germany

## **Shielded SMD Power Inductors**

## SMD

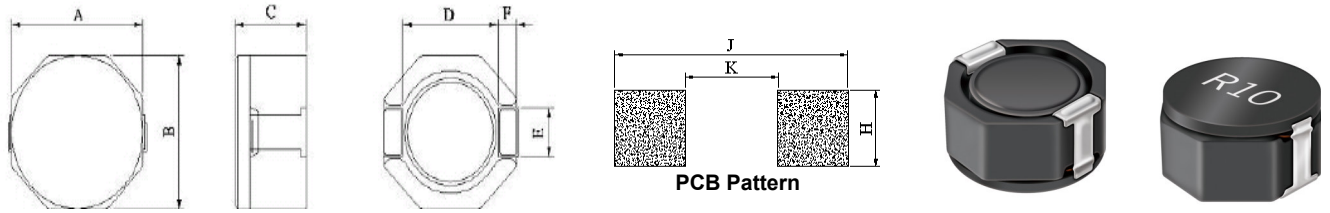
## SPECIFICATION

## Part Number

117	0830*	101*	M	L01**
Type	Size	Value	Tolerance	Packing
117 : Shielded SMD Power Inductor	0830: 8,0x8,0x3,0	The value is given in $\mu\text{H}$ and "u" indicates the decimal point. When higher than 100 $\mu\text{H}$ then the last digit is the multiplier	N: $\pm 30\%$	L01 : 1000pcs (13" reel)
	0840: 8,0x8,0x4,0	which denotes the number of zero following		
	0845: 8,0x8,0x4,5	Example:		
		3U3 : 3,3 $\mu\text{H}$		
		220 : 22 $\mu\text{H}$		
		101 : 100 $\mu\text{H}$		
				* not all combination is possible

All products according to RoHS (2015/863/EU)

Dimensions and recommended PCB pattern for reflow soldering:



Code	A	B	C max.	D ref	E ref	F ref	H	J	K
0830	8,0±0,3	8,0±0,3	3,0	6,3	2,5	1,2	2,8	10,1	6,1
0840	8,0±0,3	8,0±0,3	4,0	6,3	2,5	1,2	2,8	10,1	6,1
0845	8,0±0,3	8,0±0,3	4,5	6,3	2,5	1,2	2,8	10,1	6,1

unit: mm

### Inductance and rated current ranges

0830	1,0~100µH	6,5~0,75A
0840	1,8~100µH	7,0~1,05A
0845	1,0~330µH	9,0~0,65A

Electrical specifications at 25°C

## SMD

## Electrical Characteristics

## 0830

Part No	L ( $\mu$ H)	Tolerance	Test Condition	DCR (m $\Omega$ ) max.	IDC (A) max.
11708301U0	1,0	N	100KHz, 0,25V	11,0	6,50
11708302U5	2,5			15,6	4,50
11708303U3	3,3			18,2	4,00
11708304U7	4,7			24,7	3,40
11708307U3	7,3			39,0	2,80
1170830100	10			47,0	2,50
1170830150	15			69,0	1,90
1170830220	22			99,0	1,60
1170830330	33			156	1,30
1170830470	47			195	1,15
1170830680	68			286	0,92
1170830101	100			430	0,75

## 0840

Part No	L ( $\mu$ H)	Tolerance	Test Condition	DCR (m $\Omega$ ) max.	IDC (A) max.
11708401U8	1,8	N	100KHz, 0,1V	15,6	7,00
11708402U5	2,5			17,5	6,50
11708403U5	3,5			24,0	5,00
11708404U7	4,7			29,0	4,60
11708406U0	6,0			32,0	4,20
1170840100	10			48,0	3,00
1170840150	15			67,0	2,75
1170840220	22			105	2,30
1170840330	33			157	1,75
1170840470	47			189	1,52
1170840680	68			290	1,30
1170840101	100			410	1,05

## SMD

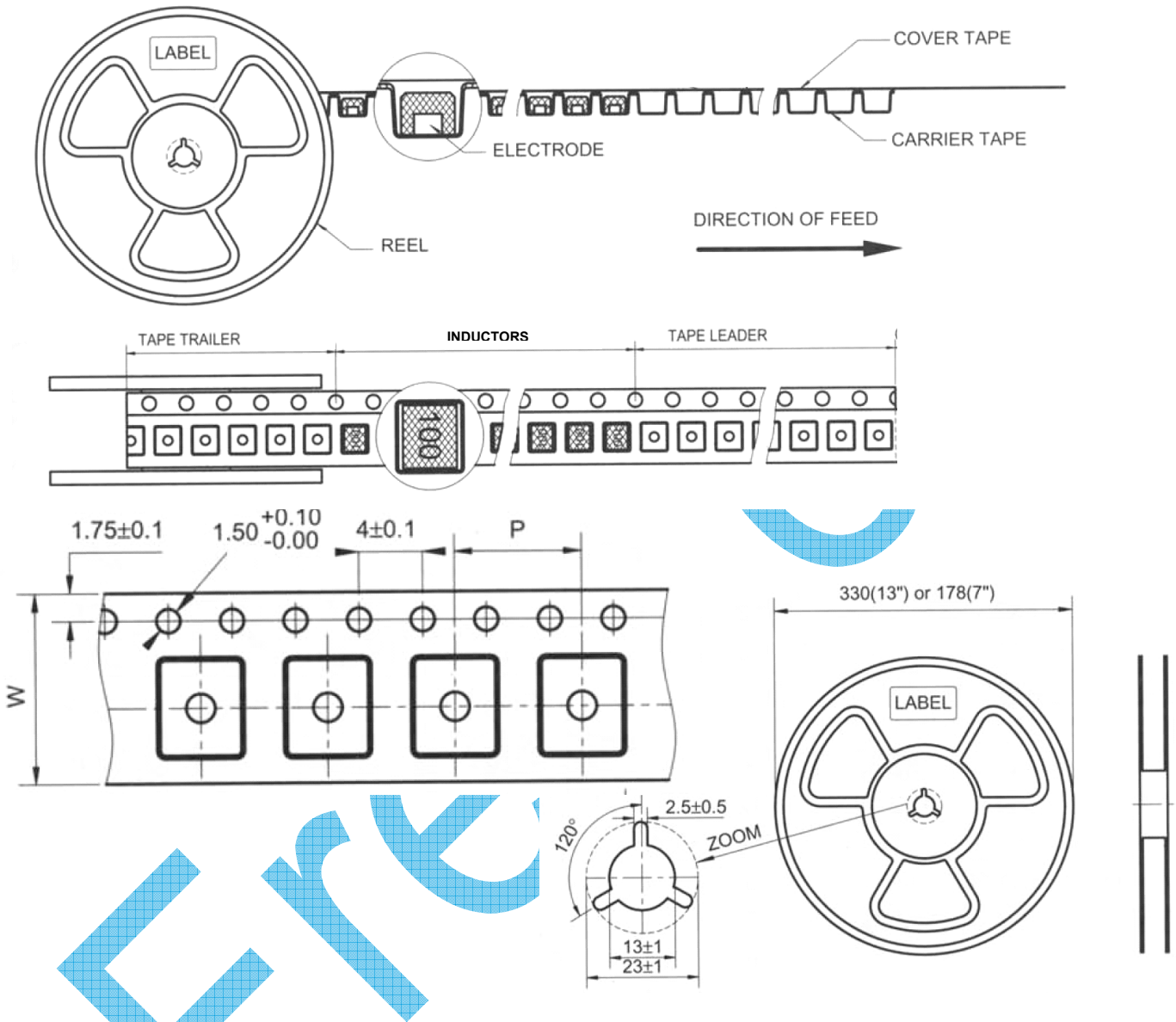
0845

Part No	L ( $\mu$ H)	Tolerance	Test Condition	DCR (m $\Omega$ ) max.	IDC (A) max.
11708451U0	1,0	N	100KHz, 0,1V	9,50	9,00
11708451U2	1,2			12,2	8,00
11708451U5	1,5			13,0	7,80
11708452U0	2,0			14,0	7,00
11708452U2	2,2			15,0	6,80
11708452U5	2,5			16,0	6,60
11708453U3	3,3			17,0	6,20
11708453U9	3,9			19,0	5,90
11708454U7	4,7			22,0	5,60
11708456U8	6,8			32,0	4,40
1170845100	10			36,0	4,00
1170845150	15			53,0	2,90
1170845180	18			72,0	2,70
1170845220	22			75,0	2,60
1170845270	27			100	2,25
1170845330	33			125	2,20
1170845470	47			150	1,80
1170845680	68			240	1,50
1170845101	100			360	1,30
1170845121	120			500	1,00

# FrelTec Shielded SMD Power Inductors

## SMD

### Tape and Reel Dimensions



Type	Tape size	
	W	P
0830	24	12
0840		
0845		

unit: mm

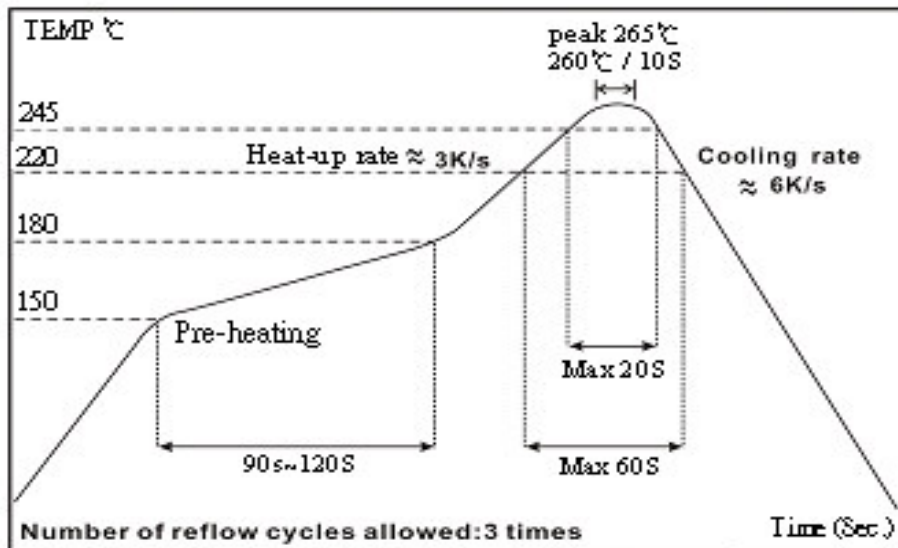
## SMD

## Characteristics

Operating temperature range:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$

Rated DC Current: The current when the inductance becomes 35% lower than its initial value.

## Lead Free Reflow Soldering Profile



## Stock period

The performance of these products, including the solderability, is guaranteed for 12 month after production date code, provided that they remain packed as they were when delivered and stored at a temperature of  $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$  and a relative humidity less than 80%RH

## SMD

## Environmental Test

Test Items	Specifications	Test Conditions / Test Methods
High temperature Storage test	No case deformation or change in appearance. $\Delta L/L \leq 10\%$	Temperature $85 \pm 2^\circ\text{C}$ , Time: $48 \pm 2$ hours, Tested after 1 hour at room temperature.
Low temperature Storage test		Temperature $-25 \pm 2^\circ\text{C}$ , Time: $48 \pm 2$ hours, Tested after 1 hour at room temperature.
Humidity test		Temperature $40 \pm 2^\circ\text{C}$ , 90~95% relative humidity Time: $96 \pm 2$ hours, apply rated current, Tested after 1 hour at room temperature.
Thermal shock test		First $-25^\circ\text{C}$ 30minutes then $25^\circ\text{C}$ 10 minutes last $85^\circ\text{C}$ 30 minutes, as 1 cycle. Go through 5 cycles. Tested after 1 hour at room temperature.

## Mechanical Test

Test Items	Specifications	Test Conditions / Test Methods
Solderability test	Terminal area must have 90% minimum solder coverage.	Product with Lead-free terminal: Dip pads in flux then dip in solder pot at $245 \pm 5^\circ\text{C}$ for 3 seconds.
Resistance to Soldering Heat	No case deformation or change in appearance.	Flux should cover the whole of the sample before heating, then be preheated for about 2 minutes over temperature of $130 \sim 150^\circ\text{C}$ . Immersing to $260 \pm 5^\circ\text{C}$ for 10 seconds.
Vibration test	No case deformation or change in appearance. $\Delta L/L \leq 10\%$	Apply frequency 10~55Hz. 1,5mm amplitude in each of perpendicular direction for 2 hours.
Shock resistance		Drop down with $981\text{m/s}^2$ (100G) shock attitude upon a rubber block method shock testing machine, for 1 time. In each of three orientations.



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