

FrelTec GmbH

Mathildenstr. 10A
82319 Starnberg
Germany

Shielded SMD Power Inductors

SMD

SPECIFICATION

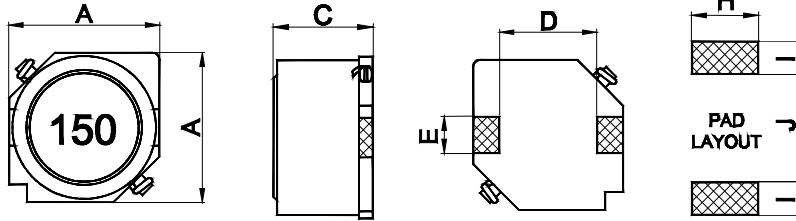
Part Number

101	0628*	101*	M	E01**
Type	Size	Value	Tolerance	Packing
101 : Shielded SMD Power Inductor	0628: 6,0×2,8	The value is given in μH and "u" indicates the decimal point. When higher than $100\mu\text{H}$ then the last digit is the multiplier	M : $\pm 20\%$	L01 : 1000pcs for 0628, 0728, 0730, 0732 and 0745 (13" reel)
	0728: 7,0×2,8	which denotes the number of zero following	N : $\pm 30\%$	L0U : 750pcs for 1045 (13" reel)
	0730: 7,0×3,0	Example:		L0A : 500pcs for 1255 and 1265 (13" reel)
	0732: 7,0×3,2	3U3 : 3,3 μH		L0V : 350pcs for 1275 (13" reel)
	0745: 7,0×4,5	220 : 22 μH		
	1045: 10,1×4,5	101 : 100 μH		
	1255: 12,5×5,5			
	1265: 12,5×6,5			
	1275: 12,5×7,5			* not all combination is possible

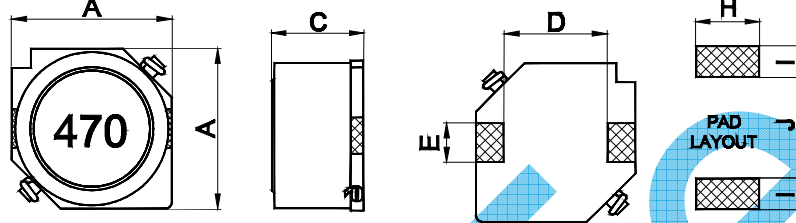
All products according to RoHS (2015/863/EU)

Dimensions and land pattern:

0628 / 0728 / 0730 / 0732 / 0745 /



1255 / 1265 / 1275



Type	A	C	D	E	H	I	J
0628	6,0±0,20	2,8±0,20	4,00	2,00	2,20	1,50	4,00
0728	7,0±0,20	2,8±0,20	4,00	2,00	2,20	1,50	4,00
0730	7,0±0,20	3,0±0,20	4,00	2,00	2,20	1,50	4,00
0732	7,0±0,20	3,2±0,20	4,00	2,00	2,20	1,50	4,00
0745	7,0±0,20	4,5±0,30	4,00	2,00	2,20	1,50	4,00
1045	10,1±0,30	4,5±0,30	6,00	3,00	3,20	2,50	5,60
1255	12,5±0,30	5,5±0,35	8,60	3,00	3,20	2,50	8,60
1265	12,5±0,30	6,5±0,35	8,60	3,00	3,20	2,50	8,60
1275	12,5±0,30	7,5±0,35	8,60	3,00	3,20	2,50	8,60

unit: mm

Inductance and rated current ranges

0628	1,0~1000µH	2,1 ~0,12A
0728	3,3~56µH	1,6 ~0,5A
0730	3,3~100µH	1,8 ~0,35A
0732	1,0~1000µH	2,2 ~0,13A
0745	1,0~1500µH	4,0 ~0,10A
1045	1,0~1500µH	7,8 ~0,22A
1255	6,0~1500µH	3,6 ~0,29A
1265	2,0~150µH	10~1,00A
1275	1,2~330µH	13~1,10A

Electrical specifications at 25°C

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Electrical Characteristics

0628 Type

L (μ H)	Tolerance	Test Condition	DCR (Ω) $\pm 20\%$	IDC (A) max
1,0	M	1KHz, 0,5V	0,024	2,10
1,5			0,025	2,00
1,8			0,026	1,95
2,2			0,022	1,90
2,8			0,025	1,80
3,5			0,030	1,70
4,1			0,035	1,65
4,7			0,036	1,60
6,8			0,052	1,50
8,2			0,061	1,35
10			0,068	1,30
12			0,081	1,10
15			0,100	1,00
18			0,129	0,87
22			0,120	0,77
27			0,179	0,71
33			0,180	0,69
39			0,239	0,61
47			0,270	0,59
56			0,330	0,51
68			0,390	0,50
82			0,459	0,43
100			0,620	0,42
120			0,659	0,33
150			0,919	0,30
180			1,049	0,28
220			1,219	0,25
270			1,598	0,22
330			1,789	0,21
390			2,289	0,20
470	2,698	0,18		
560	3,198	0,16		
680	4,310	0,15		
820	4,698	0,13		
1000	5,790	0,12		

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0728 Type

L (μ H)	Tolerance	Test Condition	DCR (Ω) $\pm 20\%$	IDC (A) max
3,3	M	1KHz, 0,5V	0,037	1,60
4,7			0,045	1,50
6,8			0,059	1,30
10			0,083	1,10
15			0,130	0,88
22			0,180	0,75
33			0,240	0,65
47			0,340	0,54
56			0,420	0,50

0730 Type

L (μ H)	Tolerance	Test Condition	DCR (Ω) $\pm 20\%$	IDC (A) max
3,3	M	1KHz, 0,5V	0,023	1,80
4,7			0,036	1,60
6,8			0,041	1,50
10			0,053	1,30
15			0,084	1,00
22			0,110	0,86
33			0,160	0,65
47			0,240	0,57
56			0,280	0,53
68			0,310	0,49
100			0,450	0,35

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0732 Type

L (μH)	Tolerance	Test Condition	DCR (Ω) $\pm 20\%$	IDC (A) max
1,0	M	1KHz, 0,5V	0,019	2,20
2,2			0,021	2,00
3,3			0,023	1,90
3,9			0,029	1,85
4,7			0,036	1,70
5,6			0,039	1,65
6,8			0,041	1,60
8,2			0,049	1,50
10			0,053	1,40
12			0,071	1,20
15			0,075	1,10
18			0,099	1,00
22			0,110	0,96
27			0,150	0,85
33			0,160	0,75
39			0,230	0,70
47			0,240	0,67
56			0,300	0,60
68			0,310	0,59
82			0,424	0,49
100			0,450	0,45
120			0,620	0,40
150			0,650	0,37
180			1,020	0,30
220			1,050	0,29
270			1,530	0,24
330			1,670	0,22
390			1,990	0,21
470			2,050	0,20
560			3,100	0,17
680	3,150	0,16		
820	4,500	0,14		
1000	4,780	0,13		

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0745 Type

L (μH)	Tolerance	Test Condition	DCR (Ω) $\pm 20\%$	IDC (A) max
1,0	M	1KHz, 0,5V	0,019	4,00
1,2			0,019	3,20
3,3			0,020	2,50
4,7			0,029	2,00
6,8			0,039	1,70
10			0,036	1,30
15			0,052	1,10
22			0,061	0,90
33			0,096	0,82
47			0,125	0,75
56			0,130	0,67
68			0,200	0,60
82			0,244	0,52
100			0,250	0,50
150			0,480	0,40
220			0,850	0,33
330			1,100	0,25
470			1,050	0,22
680	2,080	0,20		
1000	2,280	0,14		
1500	3,500	0,10		

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1045 Type

L (μH)	Tolerance	Test Condition	DCR (Ω) $\pm 20\%$	IDC (A) max
1,0	M	1KHz, 0,5V	0,012	7,80
1,5			0,014	5,80
2,2			0,015	5,60
3,3			0,016	5,10
3,9			0,018	4,10
4,7			0,020	3,70
5,6			0,022	3,40
6,8			0,025	3,20
8,2			0,027	3,10
10			0,036	3,00
12			0,033	2,50
15			0,047	2,40
18			0,052	2,20
22			0,059	2,10
27			0,073	1,70
33			0,082	1,60
39			0,099	1,50
47			0,100	1,40
56			0,110	1,30
68			0,140	1,20
82			0,190	1,10
100			0,200	1,00
120			0,280	0,80
150			0,350	0,79
180			0,420	0,69
220			0,470	0,65
270			0,620	0,55
330			0,680	0,54
390			0,900	0,49
470			1,030	0,47
560	1,300	0,40		
680	1,600	0,38		
820	1,800	0,33		
1000	2,800	0,32		
1500	3,400	0,22		

SMD 1255 Type

L (μ H)	Tolerance	Test Condition	DCR (Ω) $\pm 20\%$	IDC (A) max	
				I sat	I rms
6,0	N	1KHz, 0,5V	0,016	3,60	4,90
10	M		0,022	3,40	4,30
15			0,026	2,80	3,90
22			0,034	2,30	3,40
33			0,042	1,90	3,10
47			0,062	1,60	2,50
56			0,075	1,45	2,30
68			0,083	1,30	2,20
100			0,117	1,10	1,80
150			0,190	0,88	1,40
220			0,270	0,72	1,20
330			0,410	0,59	1,00
470			0,520	0,49	0,88
680			0,760	0,43	0,73
1000			1,120	0,34	0,60
1500			1,7300	0,29	0,48

1265 Type

L (μ H)	Tolerance	Test Condition	DCR (Ω) $\pm 20\%$	IDC (A) max	
				I sat	I rms
2,0	N	1KHz, 0,5V	0,012	10,0	8,00
4,2			0,015	7,30	5,80
7,0			0,018	5,70	4,50
10			0,020	5,00	4,50
15	M		0,024	4,20	4,40
22			0,032	3,50	2,80
33			0,041	2,80	2,20
47			0,058	2,40	1,90
56			0,075	2,20	1,70
68			0,079	2,00	1,60
100			0,123	1,60	1,30
120			0,184	1,30	1,00
150			0,273	1,00	0,80

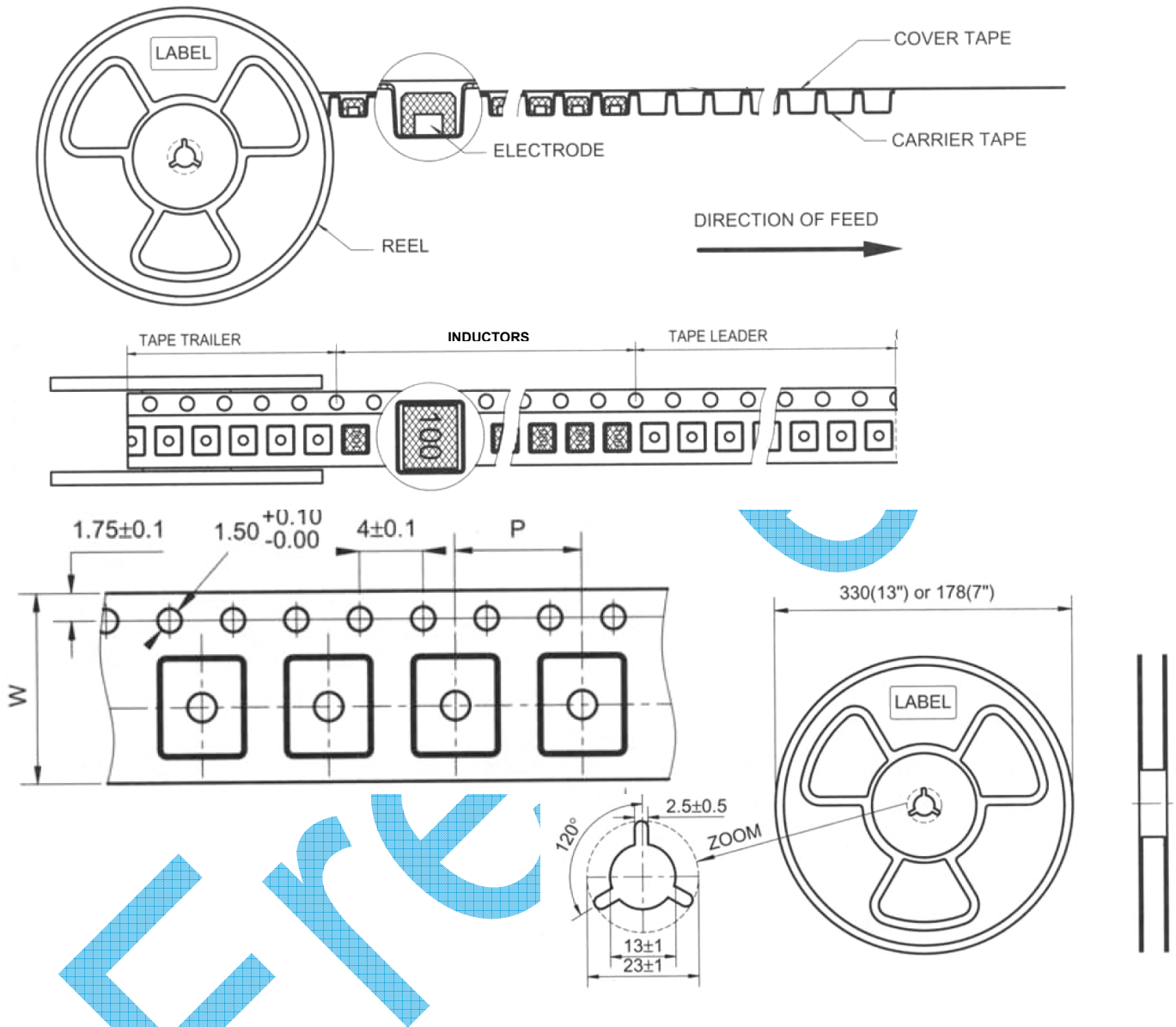
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1275 Type

L (μ H)	Tolerance	Test Condition	DCR (Ω) $\pm 20\%$	IDC (A) max	
				I sat	I rms
1,2	N, M	1KHz, 0,5V	0,007	13,00	10,40
2,0			0,008	11,00	8,80
2,7			0,009	10,00	8,00
3,3			0,010	9,50	7,60
3,9			0,010	9,00	7,20
5,6			0,012	7,80	6,20
6,8			0,013	7,20	5,90
10			M	0,016	5,50
15	0,018			4,70	3,70
22	0,026			4,00	3,50
33	0,039			3,20	3,40
39	0,044			3,00	3,10
47	0,053			2,70	3,00
56	0,069			2,30	1,80
68	0,078			2,00	2,40
82	0,110			1,95	1,50
100	0,125			1,90	1,50
150	0,175			1,60	1,30
180	0,200			1,45	1,20
220	0,258		1,30	1,00	
330	0,370	1,10	0,88		

FrelTec Shielded SMD Power Inductors

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Tape and Reel Dimensions



Type	Tape size	
	W	P
0628	16	12
0728		
0730		
0732		
0745		
1045	24	16
1255		
1265		
1275		

unit: mm

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Stock period

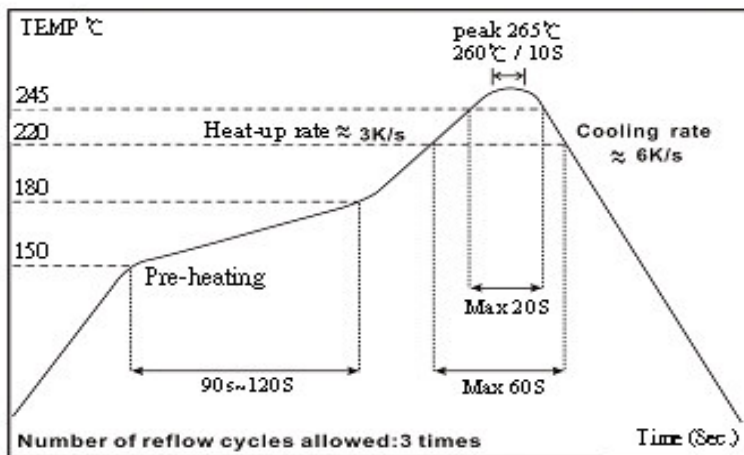
The performance of these products, including the solderability, is guaranteed for 12 month after production date code, provided that they remain packed as they were when delivered and stored at a temperature of $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and a relative humidity less than 80%RH

Characteristics

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

Saturation Rated Current (I_{sat}): The current when the inductance becomes 30% lower than its nominal value. ($T_a=25^{\circ}\text{C}$)

Temperature Rated Current (I_{rms}): The actual current when the temperature of coil becomes to $\Delta 40^{\circ}\text{C}$. ($T_a=25^{\circ}\text{C}$)

Lead Free Reflow Soldering Profile

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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 ± 2 hours, Tested after 1 hour at room temperature.
Low temperature Storage test		Temperature $-40 \pm 2^\circ\text{C}$, Time: 48 ± 2 hours, Tested after 1 hour at room temperature.
Humidity test		Temperature $40 \pm 2^\circ\text{C}$, 90~95% relative humidity Time: 96 ± 2 hours Tested after 1 hour at room temperature.
Thermal shock test		First -25°C 30 minutes then 25°C 10 minutes last 85°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.	Apply frequency 10~55Hz. 1.5mm amplitude in each of perpendicular direction for 2 hours.
Shock resistance	$\Delta L/L \leq 10\%$	Drop down with 981 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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