WESURGE Spezifikation für Freigabe / specification for release

Kunde / customer :

Artikelnummer / part number : **823 57 120 050** Datum / Date : **2006-10-15**

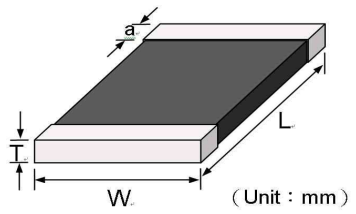
Bezeichnung :

description : **0402 ESD Suppressor "LC"** SMD size: **0402** **ROHS Compliant**

A Mechanische Abmessungen / dimensions :

SIZE (Unit : mm)

SISE	W	L	T	a
0201	0.3	0.6	0.3	0.15
0402	0.5	1.0	0.6	0.25
0603	0.8	1.6	0.9	0.3
0805	1.25	2.0	1.2	0.3
1206	1.6	3.2	1.5	0.5
1210	2.5	3.2	1.5	0.5
1812	3.2	4.5	2.0	0.5
2220	5.0	5.7	2.5	0.5



B Elektrische Eigenschaften / electrical properties :

TECHNICAL DATA

Part Number	Working Voltage	Max. Clamping Voltage	Typ. Clamp. V	Leakage Current	ESD Pulse Withstand	ESD Voltage air discharge	Capacitance
	DC	V (*1)	V (*2)	µA (*3)		kV (*4)	pF
823 57 120 050	**12**	**80**	**-**	**1**	**-**	**+/-15**	**5**

* 1 Max. Clamping Voltage at 8/20 waveformand 1 A pulse current

* 2 Typ. Clamping Voltage per 8 kV ESD contact discharge method

* 3 Leakage Current at max operating voltage, the max leakage current was measured at reliability test

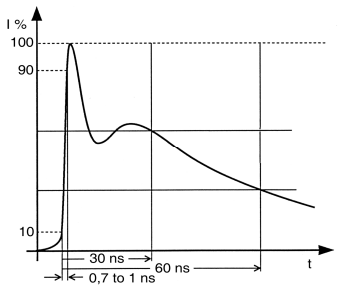
* 4. ESD Typ. Withstands Voltage design and method guarantee this property

Capacitance tolerance:	+80/-20%
Capacitance measured at:	1MHz

ESD LEVEL IEC61000-4-2

Severity Level	Air Discharge	Direct Discharge
1	2 kV	2 kV
2	4 kV	4 kV
3	8 kV	6 kV
4	15 kV	8 kV
5	Special	Special

WAVE FORM



REFERENCE DATA

Response time	T_{rise}	<	1	ns
Operating ambientg temperature			-40～+85	℃
Storage temperature			-50～+125	℃
Max. temperature solder			260/10s	℃

OTHER DATA

Body	ZnO
End termination	Ag/Ni/Sn
Packaging	Reel
Complies with Standard	IEC61000-4-2
Procedure	Solgel
Marking	None

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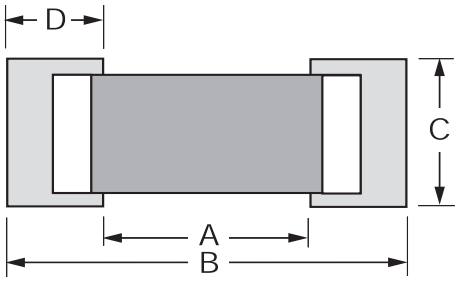
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Bezeichnung :
description : **0402 ESD Suppressor "LC"** SMD size: **0402**

C Lötpad / soldering spec. :

RECOMMENDED SOLDER PAD LAYOUT (Unit : mm)

SISE	A	B	C	D
0201	0.25	0.32	0.85	0.3
0402	0.4 ~ 0.6	1.0 ~1.8	0.6 ~0.7	0.6 ~1.2
0603	0.8 ~ 1.2	1.7 ~3.0	1.2 ~1.6	0.9 ~1.8
0805	1.0 ~1.5	2.1 ~3.8	1.5 ~2.1	1.1 ~2.3
1206	1.8 ~2.5	3.0 ~5.8	1.8 ~2.6	1.2 ~3.3
1210	1.8 ~2.5	3.2 ~6.1	2.8 ~3.8	1.3 ~3.5
1812	2.5 ~3.5	4.0 ~7.3	3.3 ~4.5	1.5 ~3.8
2220	3.5 ~4.6	5.0 ~8.5	5.2 ~6.2	1.5 ~3.9



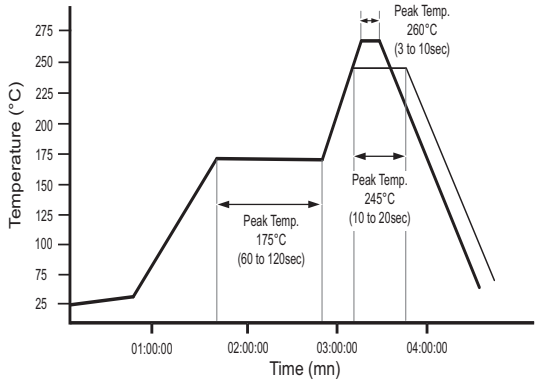
1 - The solder paste shall be printed in a thickness of 150 to 200µm.
2 - The SIR test of the solder paste shall be done（Based on JIS-Z-3284）
3 - IR reflow Pb Free Process suggestin profile (Based on J-STD-020-C):

Rapid heating, partial heating or rapid cooling will easily cause defect of the component. So preheating and gradual cooling process is suggested. IR soldering has the highest yields due to controlled heating rates and solder liquidus times. Make sure that the element is not subjected to a thermal gradient steeper than 3 degrees per second. 2 degrees per second is the ideal gradient. During the soldering process, pre- heating to within 175 degrees of the solders peak temperature is essential to minimize thermal shock.

Soldering recommend paste is Sn 96.5/Ag 3.5

- Preheat
  1.The temperature rising speed is suggested to be 2~3℃/s.
  2.Appropriate preheat time will be from 60 to 120 seconds.
  3.Temp. maintain at 175 +/-25℃ 120 seconds.
- Heating
  1.Careful about sudden rise in temperature as it may worsen the solder ability.
  2.Set the peak temperature in 235℃10-20s or 260℃ 3-10s.
- Cooling
  1.Ramp down rate 6℃/s max.

※Perform adequate test in advance as the reflow temperature profile will vary according to the conditions of the manufacturing process, and the specification of the reflow furnace



4 - Hand Soldering Process
Preheating 150℃
Temperature of soldering iron tip 380℃ max. 3 to 5 sec
The Varistorrs shall be cooled gradually at room ambient temperature

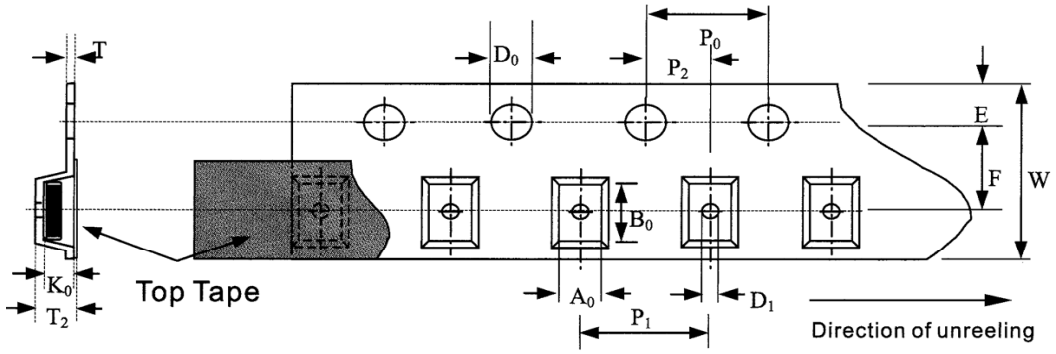
5 - Ultrasonic cleaning
For preventing failures or damages. Frequency 29MHz max - radied Power 20W/l max - Period 5mn max

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D Rollenspezifikation / tape and reel specification :

1 - Carrier tape and transparent cover tape should be heat-sealed to carry the products, and the reel should be used to reel the carrier tape.
2 - The adhesion of the heat-sealed cover tape shall be 40 + 20/ - 15grams.
3 - Both the head and the end portion of the taping shall be empty for reel package and SMT auto-pickup machine. And a normal paper tape shall be conected in the head of taping for the operator to handle.

(Unit : mm)



TAPE SPECIFICATION (Unit : mm)

Symbol	A_0 ±0.10	B_0 ±0.10	K_0 ±0.10	T_2 ±0.05	T ±0.05	D_0 +0.10 -0.00	D_1 ±0.05	P_1 ±0.10	P_2 ±0.05	P_0 ±0.05	W ±0.20	E ±0.10	F ±0.05
0201	0.38	0.68	0.44	0.22	'-	1.50	'-	2.00	2.00	4.00	8.00	1.75	3.50
0402	0.85	1.25	0.65	0.22	0.10	1.50	1.00	2.00	2.00	4.00	8.00	1.75	3.50
0603	1.05	1.88	0.95	0.22	0.10	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
0805	1.42	2.30	1.04	0.22	0.10	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
1206	1.88	3.50	1.27	0.22	0.10	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
1210	2.18	3.46	1.45	0.22	0.10	1.50	1.00	4.00	2.00	4.00	8.00	1.75	3.50
1812	3.66	4.95	1.74	0.25	0.10	1.50	1.50	8.00	2.00	4.00	12.00	1.75	5.50
2220	5.10	5.97	2.80	0.25	0.10	1.50	1.50	8.00	2.00	4.00	12.00	1.75	5.50

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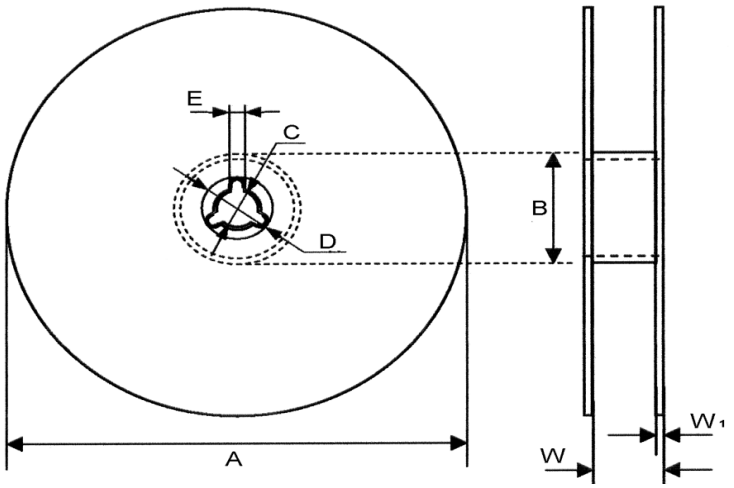
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D Rollenspezifikation / tape and reel specification :

(Unit : mm)



REEL DIMENSION (Unit : mm)

Symbol	A	B	C	D	E	W	W_1
0201	178.0±2.0	50.0 min	13.0±0.5	21.0±0.8	2.0±0.5	9.0±0. 50	1.5 max
0402	178.0±1.0	60.0±0.5	13.0±0.2	21.0±0.2	2.0±0.5	9.0±0. 50	1.5±0.15
0603	178.0±1.0	60.0±0.5	13.0±0.2	21.0±0.2	2.0±0.5	9.0±0. 50	1.5±0.15
0805	178.0±1.0	60.0±0.5	13.0±0.2	21.0±0.2	2.0±0.5	9.0±0. 50	1.5±0.15
1206	178.0±1.0	60.0±0.5	13.0±0.2	21.0±0.2	2.0±0.5	9.0±0. 50	1.5±0.15
1210	178.0±1.0	60.0±0.5	13.0±0.2	21.0±0.2	2.0±0.5	9.0±0. 50	1.5±0.15
1812	178.0±1.0	60.0±0.5	13.5±0.1	21.0±0.2	2.0±0.5	13.6±0 .2	1.5±0.15
2220	178.0±1.0	60.0±0.5	13.5±0.1	21.0±0.2	2.0±0.5	13.6±0 .2	1.5±0.15

QUANTITY PER PACKING UNIT

Type	0201	0402	0603	0805	1206	1210	1812	2220
Pcs/reel	15 000	10 000	4 000	3 000	3 000	2 000	1 000	1 000

Freigabe erteilt / general release:	**Kunde / customer**				
			JP. PENLOU	Update Clamping Voltage	06-10-15
Datum / date	Unterschrift / signature		JP. PENLOU	High Temperature Load	06-07-31
	Würth Elektronik		JP. PENLOU	New P/N	06-06-02
			JP. PENLOU	Operating temp. Range	05-11-30
			JP. PENLOU	Lead free soldering	05-11-04
Geprüft / checked 2006-07-31	Kontrolliert / approved	JP. Penlou	Name	**Änderung / modification**	Datum / date

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