

### 7. Signal Processing Use (Low Distortion Type) DA, FA\*\*\*D

#### ■ Features

- General use wire wound and resin molded chip inductor.
- Low distortion type suitable for Signal processing.
- 2 line-up of Super low distortion series and low distortion type.
- Good mounting characteristic
- RoHS compliant.



ELJDA



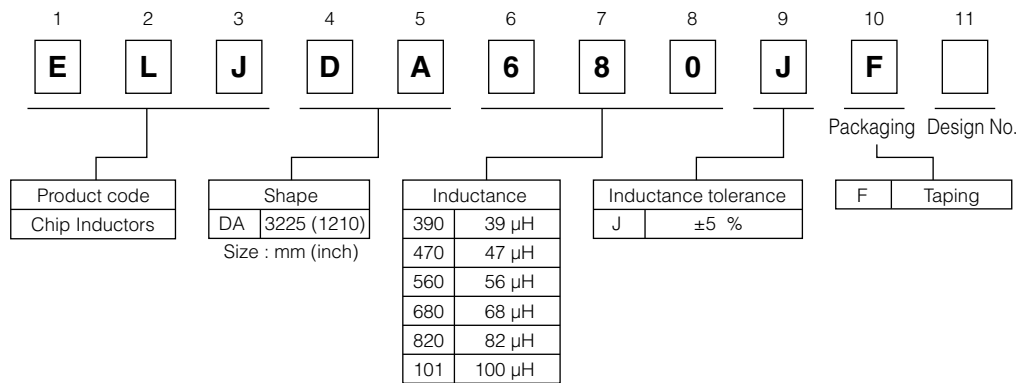
ELJFA

#### ■ Recommended Applications

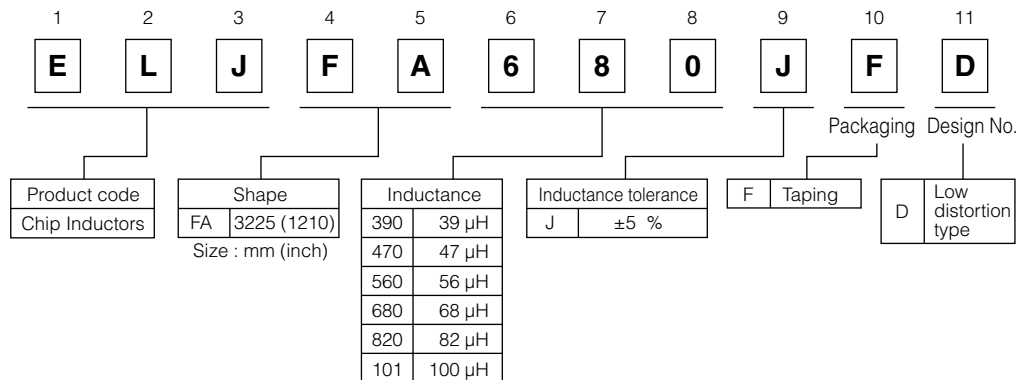
- All kinds of Broadband Modem, Router and STB etc.
- Corresponds to sam IC chipset.

#### ■ Explanation of Part Numbers

- Super Low Distortion type



- Low Distortion type



#### ■ Storage Conditions

- Package : Normal temperature (-5 to 35 °C), normal humidity (85 %RH max.), shall not be exposed to direct sunlight and harmful gases and care should be taken so as not to cause dew.
- Operating Temperature : -20 to +85 °C

#### ■ Storage Period

- Solderability may be reduced due to the conditions of high temperature and high humidity which causes the oxidation of tin-plated terminals. Even if storage conditions are within specified limits, solderability may be reduced with the passage of time. Therefore, please control the storage conditions and try to use the product within 6 months of receipt.

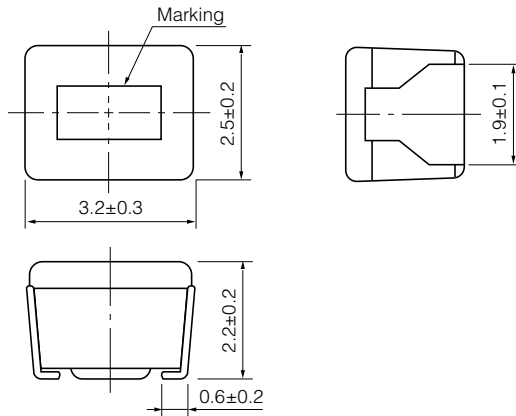
#### ■ Packaging Methods, Soldering Conditions and Safety Precautions

Please see Data Files.

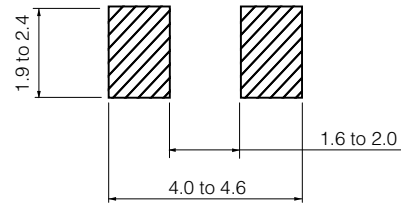
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### ■ DA/FA\*\*\*D Type 3225(1210)

● Dimensions in mm (not to scale)



● Recommended Land Pattern in mm (not to scale)



### ■ Standard Packing Quantity

● 2000 pcs./Reel

### ■ Standard Parts(Super Low Distortion type)

Part No.	Inductance			Q		SRF *1 (MHz) min.	R <sub>DC</sub> *2 (Ω) max.	DC Current (mA) max.	
	(μH)	Tolerance (%)	Test Freq. (MHz)	min.	Test Freq. (MHz)				
ELJDA220JF	22	J : ±5 %	2.52	21	2.52	23	2.6	155	
ELJDA330JF	33					12	4.5	120	
ELJDA390JF	39					11	5.2	110	
ELJDA470JF	47					10	5.9	105	
ELJDA560JF	56					8.5	6.5	100	
ELJDA680JF	68					7.5	9.0	85	
ELJDA820JF	82					7	10.0	80	
ELJDA101JF	100					0.796	24	0.796	7

\*1 : Self Resonant Frequency \*2 : DC Resistance

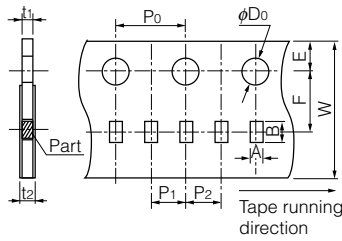
### ■ Standard Parts(Low Distortion type)

Part No.	Inductance			Q		SRF *1 (MHz) min.	R <sub>DC</sub> *2 (Ω) max.	DC Current (mA) max.			
	(μH)	Tolerance (%)	Test Freq. (MHz)	min.	Test Freq. (MHz)						
ELJFA220JFD	22	J : ±5 %	2.52	26	2.52	14	3.9	130			
ELJFA330JFD	33			27		12	4.5	120			
ELJFA390JFD	39			30		12	6.0	105			
ELJFA470JFD	47					12	6.7	100			
ELJFA560JFD	56					12	7.0	95			
ELJFA680JFD	68					12	9.0	85			
ELJFA820JFD	82					10	12.0	75			
ELJFA101JFD	100					0.796	20	0.796	10	14.0	70

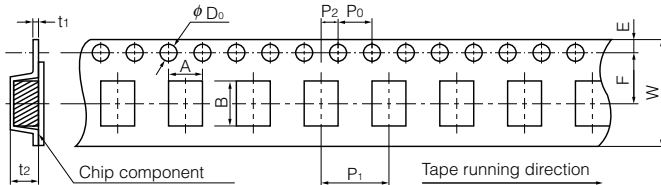
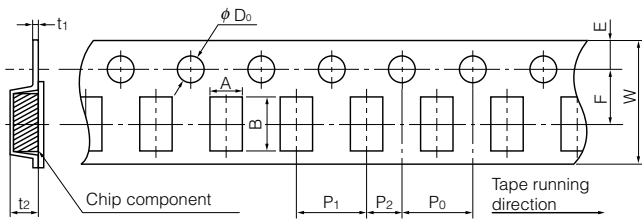
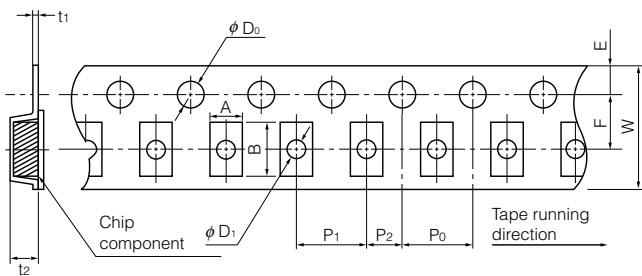
\*1 : Self Resonant Frequency \*2 : DC Resistance

### ■ Packaging Methods (Taping)

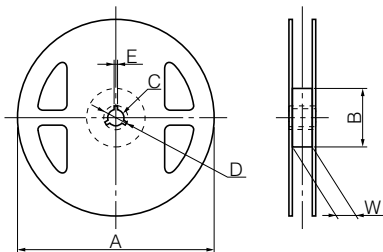
#### ● Punched Carrier Tape Dimensions in mm (not to scale)



#### ● Embossed Carrier Tape Dimensions in mm (not to scale)



#### ● Taping Reel Dimensions in mm (not to scale)



### ■ Standard Packing Quantity/Reel

Types	Quantity	Quantity
RF, QF, PF		10000 pcs.
RE, QE, PE, ND		3000 pcs.
NC, FC, PC, LC, SC		2000 pcs.
NA, FA, PA, LA, SA, EA, DA		2000 pcs.
FB, PB		500 pcs.

#### ● Type □F

	A	B	W	E	F	P <sub>1</sub>
RF, QF, PF	0.71	1.21	8.0	1.75	3.5	2.0
	P <sub>2</sub>	P <sub>0</sub>	φD <sub>0</sub>	t <sub>1</sub>	t <sub>2</sub>	
RF, QF, PF	2.0	4.0	φ1.5	0.7 max.	1.0 max.	

#### ● Type □E, Type ND, Type □C

	A	B	W	E	F	P <sub>1</sub>
RE, QE, PE	1.0	1.8	8.0	1.75	3.5	4.0
ND	1.45	2.25	8.0	1.75	3.5	4.0
NC, FC, PC, LC, SC	2.40	2.90	8.0	1.75	3.5	4.0
	P <sub>2</sub>	P <sub>0</sub>	φD <sub>0</sub>	φD <sub>1</sub>	t <sub>1</sub>	t <sub>2</sub>
RE, QE, PE	2.0	4.0	φ1.5	φ0.6	(0.27)	1.2
ND	2.0	4.0	φ1.5	φ1.0	(0.25)	1.55
NC, FC, PC, LC, SC	2.0	4.0	φ1.5	φ1.1	(0.25)	1.85

#### ● Type □A

	A	B	W	E	F	P <sub>1</sub>
NA, FA, PA, LA, SA, EA, DA	2.80	3.60	8.0	1.75	3.5	4.0
	P <sub>2</sub>	P <sub>0</sub>	φD <sub>0</sub>	t <sub>1</sub>	t <sub>2</sub>	
NA, FA, PA, LA, SA, EA, DA	2.0	4.0	φ1.5	(0.25)	2.40	

#### ● Type □B

	A	B	W	E	F	P <sub>1</sub>
FB, PB	3.60	4.90	12.0	1.75	5.5	8.0
	P <sub>2</sub>	P <sub>0</sub>	φD <sub>0</sub>	t <sub>1</sub>	t <sub>2</sub>	
FB, PB	2.0	4.0	φ1.5	(0.30)	3.50	

Types	Parts					
	A	B	C	D	E	W
RF, QF, PF, RE, QE, PE, ND, NC, FC, PC, LC, SC, NA, FA, PA, LA, SA, EA, DA	180	60	13	21	2	9
FB, PB	180	60	13	21	2	13

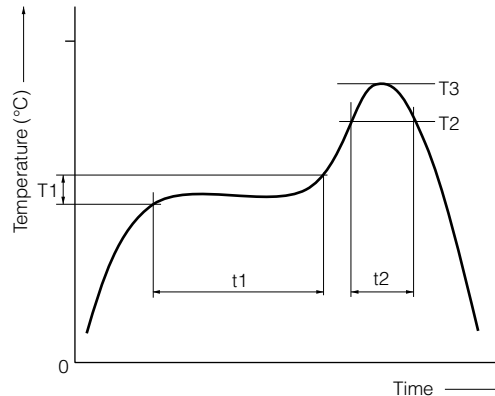
\* Under conditions of high temperature and humidity deterioration of the taping and packaging may be accelerated.

Please carefully control storage conditions and use the product within 6 months of receipt.

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## Soldering Conditions

### ■ Reflow soldering conditions



### ● Pb free solder recommended temperature profile

Type	Preheat		Soldering		Peak Temperature		Time of Reflow
	T1 [°C]	t1 [s]	T2 [°C]	t2 [s]	T3	T3 Limit	
□F	150 to 180	60 to 120	230 °C	40 max.	250 °C, 10 s	260 °C, 10 s	2 times max.
□E	150 to 180	60 to 120	230 °C	40 max.	250 °C, 10 s	260 °C, 10 s	2 times max.
□D	150 to 180	60 to 120	230 °C	40 max.	245 °C, 10 s	250 °C, 10 s	2 times max.
□C	150 to 180	60 to 120	230 °C	40 max.	245 °C, 10 s	250 °C, 10 s	2 times max.
□A	150 to 180	60 to 120	230 °C	40 max.	245 °C, 10 s	250 °C, 10 s	2 times max.
□B	150 to 180	60 to 120	230 °C	40 max.	245 °C, 10 s	250 °C, 10 s	2 times max.

### ■ Flow soldering conditions

Preheat: 130 to 150 °C, 60 to 180 s, Soldering: 260 °C, 5 s max.

### ■ Notes

- Solderability may be reduced due to the conditions of high temperature and high humidity which causes the oxidation of tin-plated terminals. Even if storage conditions are within specified limits, solderability may be reduced with the passage of time. Therefore, please control the storage conditions and try to use the product within 6 months of receipt.
- In case the product has been stored for a period longer than 6 months, use the product only after confirmation of its solderability.

## ⚠ Safety Precautions (Common precautions for Chip Inductors)

- When using our products, no matter what sort of equipment they might be used for, be sure to make a written agreement on the specifications with us in advance. The design and specifications in this catalog are subject to change without prior notice.
- Do not use the products beyond the specifications described in this catalog.
- This catalog explains the quality and performance of the products as individual components. Before use, check and evaluate their operations when installed in your products.
- Install the following systems for a failsafe design to ensure safety if these products are to be used in equipment where a defect in these products may cause the loss of human life or other significant damage, such as damage to vehicles (automobile, train, vessel), traffic lights, medical equipment, aerospace equipment, electric heating appliances, combustion/gas equipment, rotating equipment, and disaster/crime prevention equipment.
- \* Systems equipped with a protection circuit and a protection device
- \* Systems equipped with a redundant circuit or other system to prevent an unsafe status in the event of a single fault

## ⚠ Precautions for use

### 1. Operation range and environments

- ① These products are designed and manufactured for general and standard use in general electronic equipment (e.g. AV equipment, home electric appliances, office equipment, information and communication equipment)
- ② These products are not intended for use in the following special conditions. Before using the products, carefully check the effects on their quality and performance, and determine whether or not they can be used.
  - In liquid, such as water, oil, chemicals, or organic solvent
  - In direct sunlight, outdoors, or in dust
  - In salty air or air with a high concentration of corrosive gas, such as Cl<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub>, SO<sub>2</sub>, or NO<sub>2</sub>
  - In an environment where these products cause dew condensation

### 2. Handling

- ① Do not bring magnets or magnetized materials close to the product. The influence of their magnetic field can change the inductance value.
- ② Do not apply strong mechanical shocks by either dropping or collision with other parts.  
Excessive shock can damage the part.

### 3. Land pattern design

- ① Please refer to the recommended land pattern for each type shown on the datasheet.
- ② Avoid placing the chip inductor on any metal pattern except the recommended land pattern because a drop of Q and mutual conductance may occur.
- ③ In case of flow soldering, venting of soldering flux gases should be made for high density assemblies to get a good solder connection.
- ④ In case of reflow soldering, consider the layout because taller components close to chip inductor tend to block thermal conduction.

### 4. Mounting

- ① In general, magnetic and electric characteristics of ferrite cores can be changed by applying excessively strong force. Placement force should not exceed 20 N.
- ② Do not bend or twist the PWB after mounting the part.

### 5. Cleaning

- ① Do not use acid or alkali agents. Some cleaning solvents may damage the part.  
Confirm by testing the reliability in advance of mass production.
- ② If Ultrasonic cleaning is used, please confirm the reliability in advance.  
It is possible that combined resonance of component and PWB and cavitation can cause an abnormal vibration mode to exist causing damage.

### 6. Caution about applying excessive current

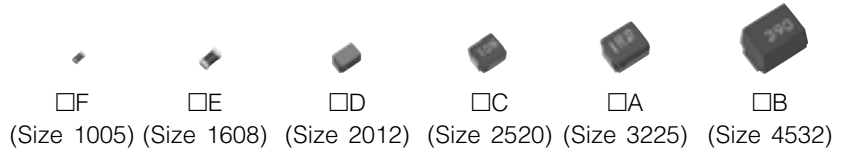
The rated current is defined as the smaller value of either the current value when the inductance drops 10 % down from the initial point or the current value when the average temperature of coil inside rises 20 °C up from the initial point. Do not operate product over the specific max. current.

### <Package markings>

Package markings include the product number, quantity, and country of origin.  
In principle, the country of origin should be indicated in English.

### Chip Inductors

Type: F, E, D, C, A, B






















Ceramic Core/Laser-Cut and wire wound type chip inductors for automatic and high-density mounting  
Wide variation product line-up correspond to various needs

#### ■ Recommended Applications

- Cellular phones, wireless communication equipment (W-LAN, Bluetooth), various modules, HIC, TV, VTR, PC & peripherals, DVD, DSC, STB.

#### ■ Inductors · Selection Guide

Size : mm (inch)

Technology Case Usage	Non wound		Wire wound			
	Size 1005 (0402)	Size 1608 (0603)	Size 2012 (0805)	Size 2520 (1008)	Size 3225 (1210)	Size 4532 (1812)
High Freq. Use	ELJRF  1.0–100 nH	ELJRE  1.0–220 nH	ELJND  10–1000 nH	ELJNC  10–820 nH	ELJNA  47–8200 nH	
High Freq. High-Q	ELJQF  1.0–39 nH	ELJQE  2.2–56 nH				
General Use				ELJFC  0.22–100 μH	ELJFA  0.22–220 μH	ELJFB  0.22–1000 μH
High Power	ELJPF  2.2–10 nH	ELJPE  2.2–22 nH		ELJPC/PC□3 ELJLC  1.0–33 μH	ELJPA/PA□2 ELJLA  1.0–330 μH	ELJPB  10–220 μH
Magnetically Shielded				ELJSC  27–100 μH	ELJSA  10–270 μH	
Low DC Resistance					ELJEA  1.0–330 μH	
Signal Processing Use (Low Distortion Type)					ELJDA/ELJFA  39–100 μH	

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