



Jan. 2022 Ver.3.1a  
TDK Corporation

## Multilayer Low Pass Filter

For 2647-3500MHz

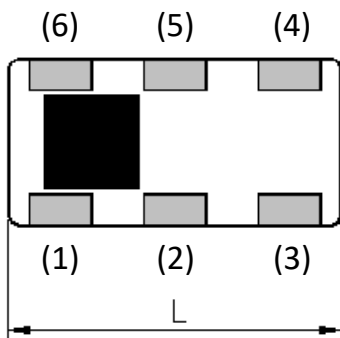
DEA Series 1.6x0.8mm [EIA 0603] TYPE

P/N: **DEA163500LT-5106C1**

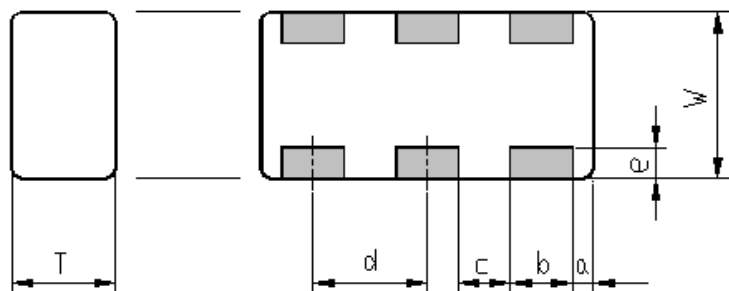
## DEA163500LT-5106C1

### ■ SHAPES AND DIMENSIONS

[Top View]



[Bottom View]



Dimensions (mm)

| L       | W       | T       | a       | b       | c       | d       | e       |
|---------|---------|---------|---------|---------|---------|---------|---------|
| 1.60    | 0.80    | 0.60    | 0.10    | 0.30    | 0.25    | 0.55    | 0.15    |
| +/-0.10 | +/-0.10 | +/-0.10 | +/-0.10 | +/-0.10 | +/-0.10 | +/-0.10 | +/-0.10 |

Terminal functions

|     |             |
|-----|-------------|
| (1) | GND         |
| (2) | Output Port |
| (3) | GND         |

|     |            |
|-----|------------|
| (4) | GND        |
| (5) | Input Port |
| (6) | GND        |

### ■ TERMINATION FINISH

| Material |
|----------|
| Sn plate |

## DEA163500LT-5106C1

### ELECTRICAL CHARACTERISTICS

( Measurement )

| Parameter                                     | Frequency (MHz) | TDK Spec     |      |      |
|---|-----------------|--------------|------|------|
|   |                 | Min.         | Typ. | Max. |
| Insertion Loss (dB)                           | 2647 to 3500    | -            | 0.51 | 0.60 |
| Insertion Loss (dB)<br>( -40 to +105 °C )     | 2647 to 3500    | -            | -    | 0.71 |
| Return Loss@Input (dB)                        | 2647 to 3500    | 10           | 16.9 | -    |
| Return Loss@Input (dB)<br>( -40 to +105 °C )  | 2647 to 3500    | 10           | -    | -    |
| Return Loss@Output (dB)                       | 2647 to 3500    | 10           | 17.2 | -    |
| Return Loss@Output (dB)<br>( -40 to +105 °C ) | 2647 to 3500    | 10           | -    | -    |
| Attenuation (dB)                              | 5294 to 6994    | 32           | 38.9 | -    |
|   | 7941 to 10491   | 27           | 35.4 | -    |
|   | 10588 to 13988  | 25           | 30.8 | -    |
| Attenuation (dB)<br>( -40 to +105 °C )        | 5294 to 6994    | 30           | -    | -    |
|   | 7941 to 10491   | 26           | -    | -    |
|   | 10588 to 13988  | 23           | -    | -    |
| Characteristic Impedance (ohm)                |                 | 50 (Nominal) |      |      |

Ta = +25+/-5°C

### MAXIMUM RATINGS

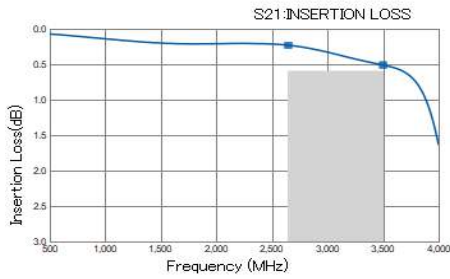
| Parameter                  |                 | TDK Spec       | Conditions           |
|----------------------------|-----------------|----------------|----------------------|
| Operating temperature (°C) |                 | -40 to +105 °C |                      |
| Storage temperature (°C)   |                 | -40 to +105 °C |                      |
| Power Handling (W) *1      | Frequency (MHz) |                |                      |
|                            | 2647 to 3500    | 2              | CW Duty 100%         |
| Human Body Model : HBM     | @Each Port (V)  | TBD            | 100pF / 1500ohm      |
| Machine Model : MM         | @Each Port (V)  | TBD            | 200pF / 0ohm         |
| Charged Device Model : CDM | @Each Port (V)  | TBD            | Humidity : 60%RH max |

\*1 : Refer to 3GPP TS 38.101-1 V15.2.0

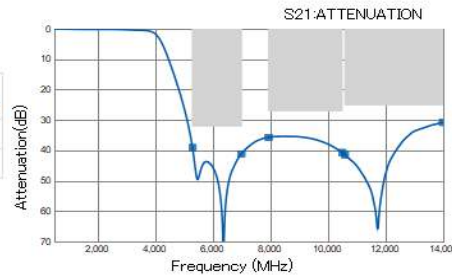
# DEA163500LT-5106C1

## FREQUENCY CHARACTERISTICS

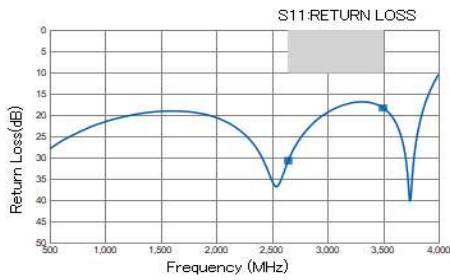
TDK Spec (Ta = +25+/-5°C)



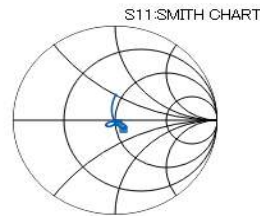
|      |                         |
|------|-------------------------|
| P/N  | DEA163500LT-            |
| Freq | 5106C1_Ver.3.1_20210728 |
| 2647 | 0.23                    |
| 3500 | 0.51                    |



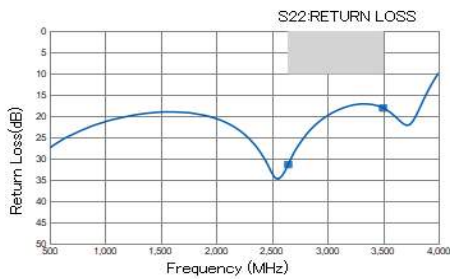
|       |                         |
|-------|-------------------------|
| P/N   | DEA163500LT-            |
| Freq  | 5106C1_Ver.3.1_20210728 |
| 5294  | 39.11                   |
| 6934  | 41.17                   |
| 7941  | 35.69                   |
| 10481 | 40.73                   |
| 10688 | 41.48                   |
| 13988 | 30.79                   |



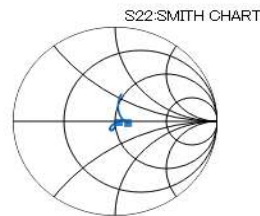
|      |                         |
|------|-------------------------|
| P/N  | DEA163500LT-            |
| Freq | 5106C1_Ver.3.1_20210728 |
| 2647 | 30.75                   |
| 3500 | 18.33                   |



|      |                         |
|------|-------------------------|
| P/N  | DEA163500LT-            |
| Freq | 5106C1_Ver.3.1_20210728 |
| 2647 | 52.4 / -1.75            |
| 3500 | 57.31 / -10.84          |



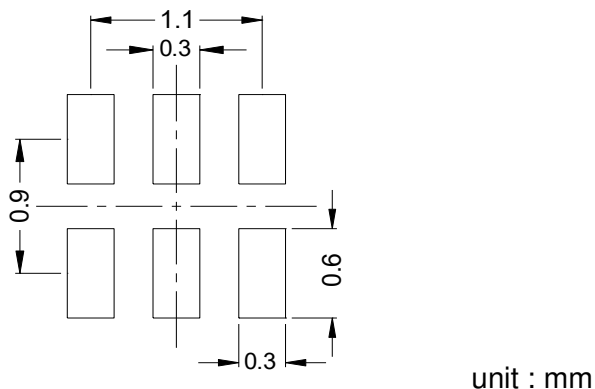
|      |                         |
|------|-------------------------|
| P/N  | DEA163500LT-            |
| Freq | 5106C1_Ver.3.1_20210728 |
| 2647 | 31.39                   |
| 3500 | 18.10                   |



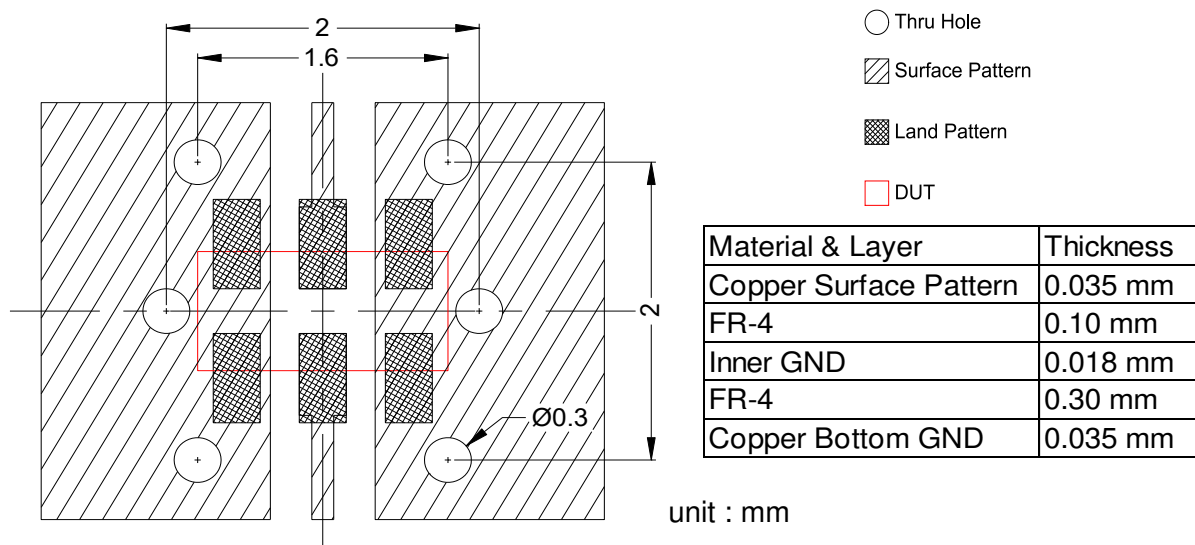
|      |                         |
|------|-------------------------|
| P/N  | DEA163500LT-            |
| Freq | 5106C1_Ver.3.1_20210728 |
| 2647 | 52.67 / -0.73           |
| 3500 | 64.14 / -1.39           |

## DEA163500LT-5106C1

### RECOMMENDED LAND PATTERN



### EVALUATION BOARD



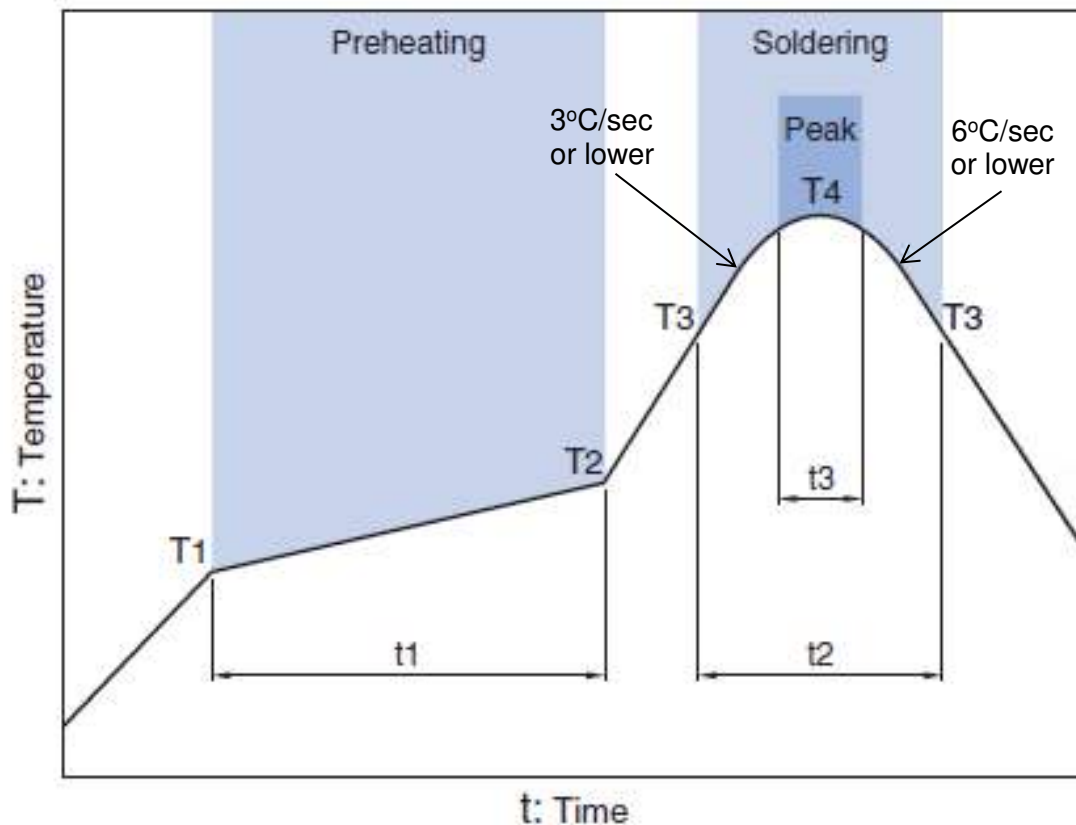
\* Line width should be designed to match 50 ohm characteristic impedance depending on PCB material and thickness.

\*\* The position of the through hole which have possibility of influence to the performance are indicated by dimension line.

### ENVIRONMENT INFORMATION

RoHS Statement  
 RoHS Compliance

## RECOMMENDED REFLOW PROFILE



| Preheating |       |              | Soldering                |              |              |            |
|------------|-------|--------------|--------------------------|--------------|--------------|------------|
|            |       |              | Critical zone (T3 to T4) |              | Peak         |            |
| Temp.      |       | Time         | Temp.                    | Time         | Temp.        | Time       |
| T1         | T2    | t1           | T3                       | t2           | T4           | t3 *       |
| 150°C      | 200°C | 60 to 120sec | 217°C                    | 60 to 120sec | 240 to 260°C | 30 sec Max |

\* t3 : Time within 5°C of actual peak temperature

The maximum number of reflow is 3.

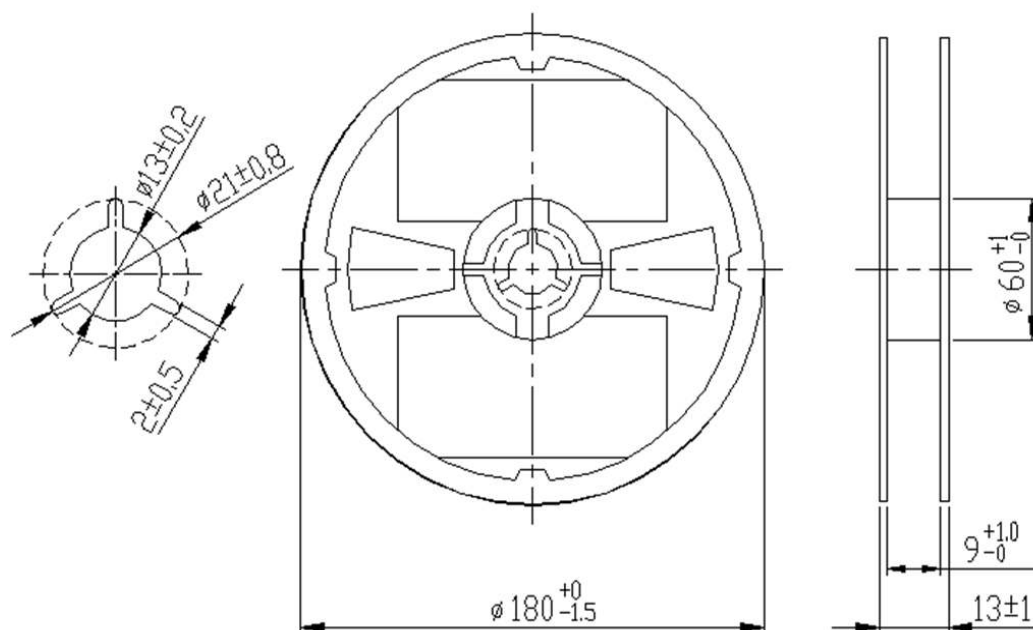
Note: Lead free solder is recommended.  
Recommended solder is Sn-3.0Ag-0.5Cu. (M705 by Senju Metal Industry)

## GENERAL TECHNICAL INFORMATION

[https://product.tdk.com/en/system/files?file=dam/doc/product/rf/rf/coupler/general\\_tech\\_info/rf\\_general-technical-info\\_02\\_en.pdf](https://product.tdk.com/en/system/files?file=dam/doc/product/rf/rf/coupler/general_tech_info/rf_general-technical-info_02_en.pdf)

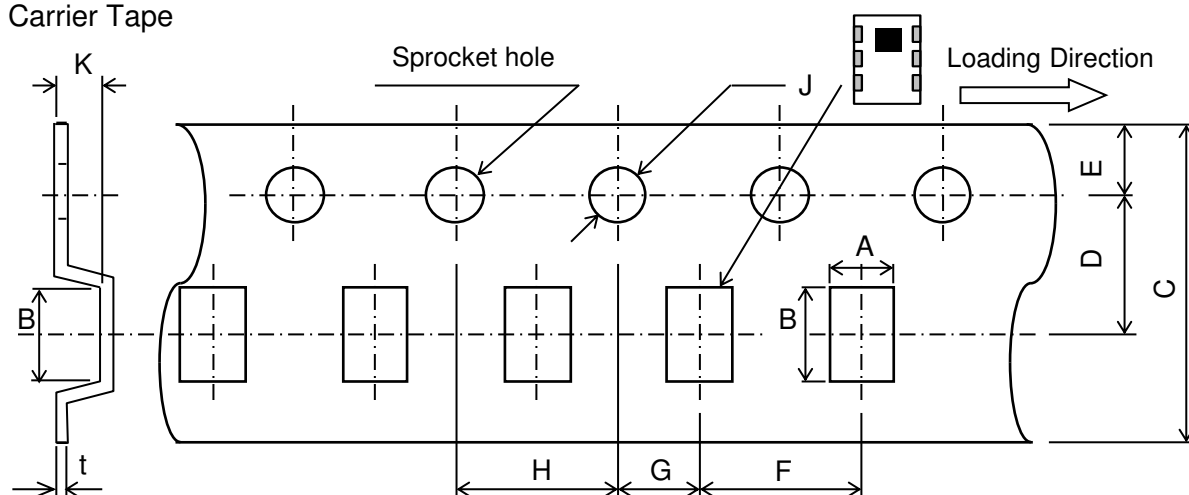
**DEA163500LT-5106C1****PACKAGING STYLE**

## Reel Dimensions



Dimensions in mm

## Carrier Tape



## Dimensions (mm)

| A       | B       | C      | D       | E      | F      | G       | H      | J       | K   | t       |
|---------|---------|--------|---------|--------|--------|---------|--------|---------|-----|---------|
| 0.97    | 1.8     | 8.0    | 3.5     | 1.75   | 4.0    | 2.0     | 4.0    | 1.5     | 0.8 | 0.25    |
| +/-0.05 | +/-0.05 | +/-0.2 | +/-0.05 | +/-0.1 | +/-0.1 | +/-0.05 | +/-0.1 | +0.1/-0 | MAX | +/-0.05 |

**STANDARD PACKAGE QUANTITY****( pieces/reel )**

4,000

## REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

### SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using these products.

#### REMINDERS

The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.

Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below or for any other use exceeding the range or conditions set forth in this catalog.

- |   |  |
|---|--|
| (1) Aerospace/Aviation equipment                                  | (8) Public information-processing equipment                                  |
| (2) Transportation equipment (cars, electric trains, ships, etc.) | (9) Military equipment   |
| (3) Medical equipment   | (10) Electric heating apparatus, burning equipment                           |
| (4) Power-generation control equipment                            | (11) Disaster prevention/crime prevention equipment                          |
| (5) Atomic energy-related equipment                               | (12) Safety equipment  |
| (6) Seabed equipment  | (13) Other applications that are not considered general-purpose applications |
| (7) Transportation control equipment                              |  |

When using this product in general-purpose applications, you are kindly requested to take into consideration securing protection circuit/equipment or providing backup circuits, etc., to ensure higher safety.