



Nov. 2018 Ver.1.0  
TDK Corporation

## Multilayer Diplexer

For LTE

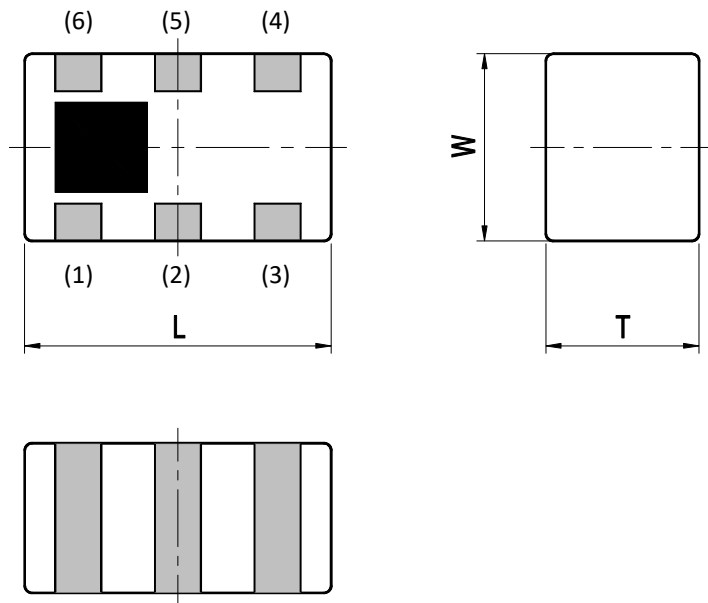
DPX Series

2012 TYPE

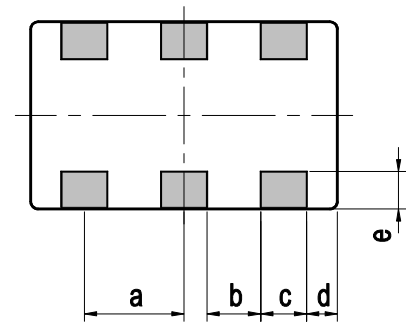
P/N: **DPX202690DT-4084A6**

**DPX202690DT-4084A6****SHAPES AND DIMENSIONS**

[Top View]



[Bottom View]



Dimensions (mm)

L	W	T	a	b	c	d	e
2.00	1.25	0.90	0.65	0.35	0.30	0.20	0.20
+/-0.15	+/-0.15	+/-0.10	+/-0.15	+/-0.15	+/-0.15	+/-0.15	+/-0.15

Terminal functions

(1)	GND
(2)	Common Port
(3)	GND

(4)	High-Band Port
(5)	GND
(6)	Low-Band Port

**TEMPERATURE RANGE**

Operating temperature	Storage temperature
-40 to +85 °C	-40 to +85 °C

**TERMINATION FINISH**

Material
Sn plate

• All specifications are subject to change without notice.

## DPX202690DT-4084A6

### ■ ELECTRICAL CHARACTERISTICS

( Measurement )

#### Low-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	1710 to 1980	-	0.52	0.80
	2110 to 2170	-	0.76	1.00
Return Loss (dB)	1710 to 1980	10	20.6	-
	2110 to 2170	10	23.3	-
Attenuation (dB)	2500 to 2690	12	15.4	-
Power Handling (W)	1710 to 2170	-	-	2

Ta = +25+/-5°C

#### High-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	2500 to 2690	-	0.72	1.00
Return Loss (dB)	2500 to 2690	10	17.1	-
Attenuation (dB)	1710 to 1980	12	14.5	-
	2110 to 2170	15	21.6	-
Power Handling (W)	2500 to 2690	-	-	2

Ta = +25+/-5°C

#### Common

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Return Loss (dB)	1710 to 1980	10	17.0	-
	2110 to 2170	10	21.6	-
	2500 to 2690	10	17.3	-

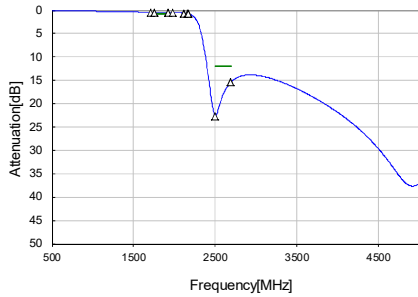
Ta = +25+/-5°C

# DPX202690DT-4084A6

## FREQUENCY CHARACTERISTICS

( Measurement )

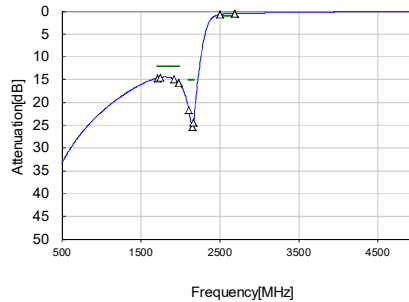
Low band-Port



Insertion Loss	
1710 MHz	0.44 dB
1755 MHz	0.46 dB
1920 MHz	0.50 dB
1980 MHz	0.52 dB
2110 MHz	0.60 dB
2155 MHz	0.70 dB
2170 MHz	0.76 dB

Attenuation	
2500 MHz	22.65 dB
2690 MHz	15.42 dB

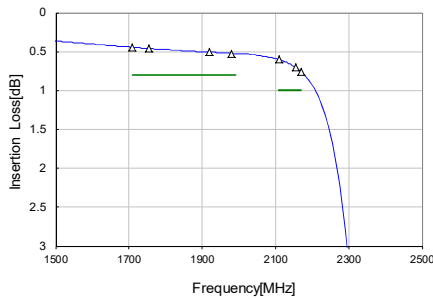
High band-Port



Insertion Loss	
2500 MHz	0.72 dB
2690 MHz	0.46 dB

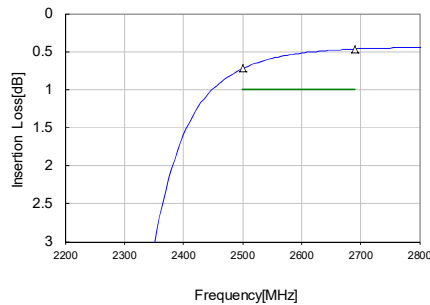
Attenuation	
1710 MHz	14.65 dB
1755 MHz	14.51 dB
1920 MHz	14.83 dB
1980 MHz	15.67 dB
2110 MHz	21.61 dB
2155 MHz	25.39 dB
2170 MHz	24.40 dB

Low band-Port



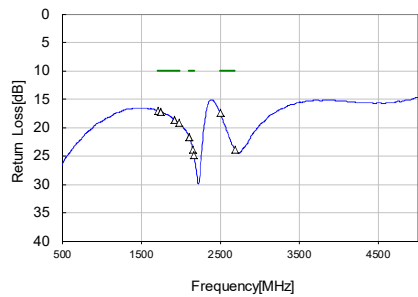
Insertion Loss	
1710 MHz	0.44 dB
1755 MHz	0.46 dB
1920 MHz	0.50 dB
1980 MHz	0.52 dB
2110 MHz	0.60 dB
2155 MHz	0.70 dB
2170 MHz	0.76 dB

High band-Port



Insertion Loss	
2500 MHz	0.72 dB
2690 MHz	0.46 dB

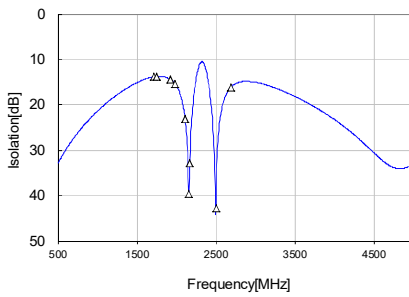
Common Port Return Loss



1710 MHz	17.04 dB
1755 MHz	17.17 dB
1920 MHz	18.62 dB
1980 MHz	19.19 dB
2110 MHz	21.69 dB
2155 MHz	23.81 dB
2170 MHz	24.78 dB

2500 MHz	17.38 dB
2690 MHz	17.38 dB

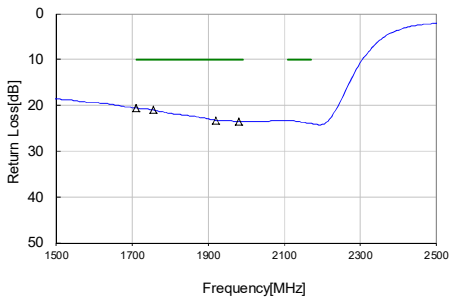
Isolation



1710 MHz	13.8 dB
1755 MHz	13.7 dB
1920 MHz	14.4 dB
1980 MHz	15.3 dB
2110 MHz	23.1 dB
2155 MHz	39.5 dB
2170 MHz	32.8 dB

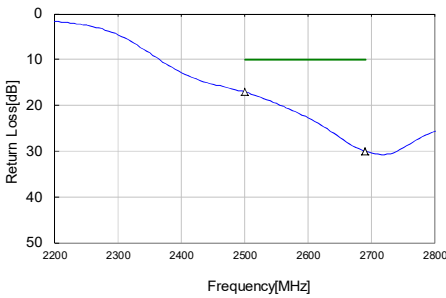
2500 MHz	42.7 dB
2690 MHz	16.1 dB

Low band-Port Return Loss



1710 MHz	20.61 dB
1755 MHz	21.03 dB
1920 MHz	23.23 dB
1980 MHz	23.50 dB
2110 MHz	23.33 dB
2155 MHz	23.76 dB
2170 MHz	23.99 dB

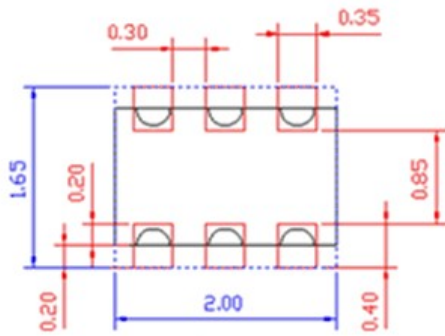
High band-Port Return Loss



2500 MHz	17.11 dB
2690 MHz	30.04 dB

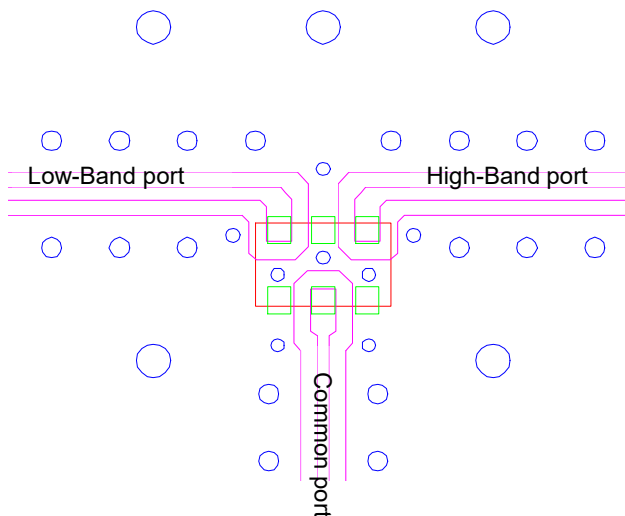
## DPX202690DT-4084A6

### RECOMMENDED LAND PATTERN



Unit : [mm]

### EVALUATION BOARD



Material, Layer	Thickness
Top Resist	Resist
Copper Surface Pattern	0.035mm
FR-4	0.100mm
Copper Inner GND	0.018mm
FR-4	0.300mm
Copper Bottom GND	0.035mm

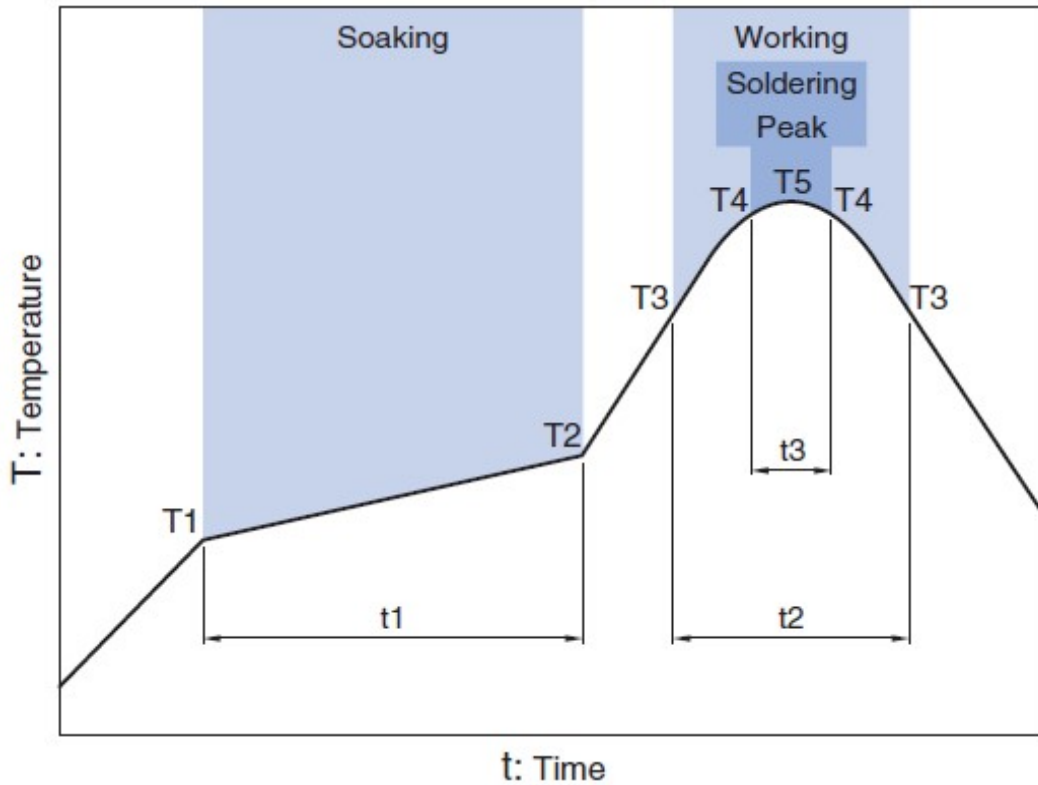
\* Line width should be designed to match 50 ohm characteristic impedance depending on PCB material and thickness.

### ENVIRONMENT INFORMATION

RoHS Statement  
RoHS Compliance

**DPX202690DT-4084A6****RECOMMENDED REFLOW PROFILE**

Pb free solder

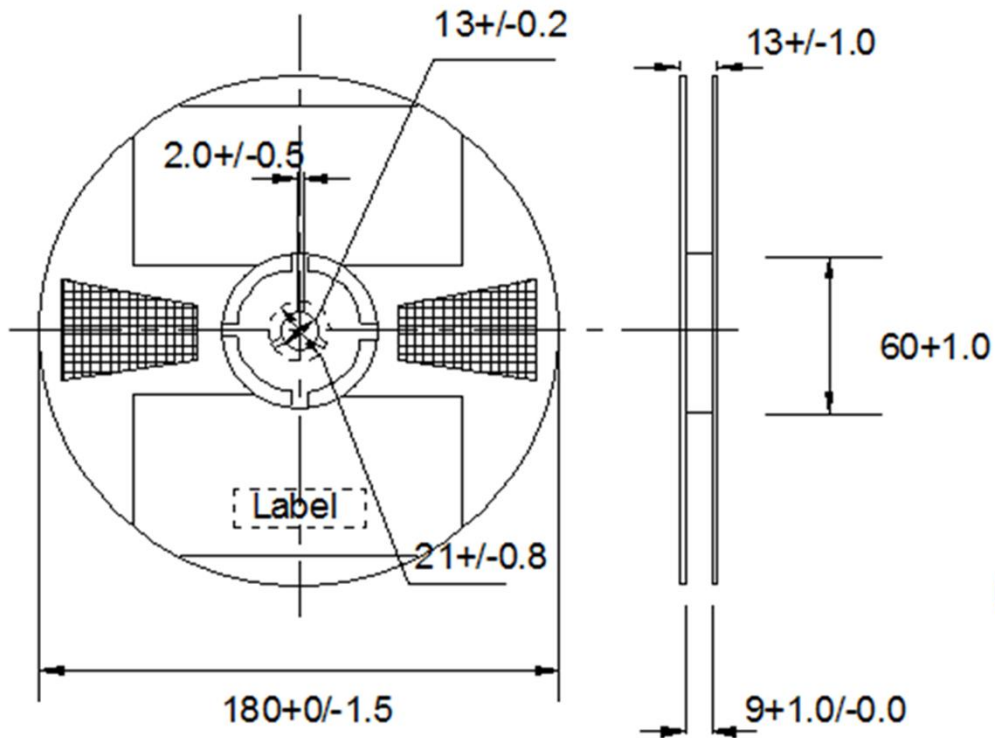


Soaking			Working		Soldering		Peak
Temp.	Temp.	Time	Temp.	Time	Temp.	Time	Temp.
T1	T2	t1	T3	t2	T4	t3	T5
150°C	180°C	60 to 120sec	230°C	more than 30sec	247 to 253°C	within 10sec	260°C Max.

## DPX202690DT-4084A6

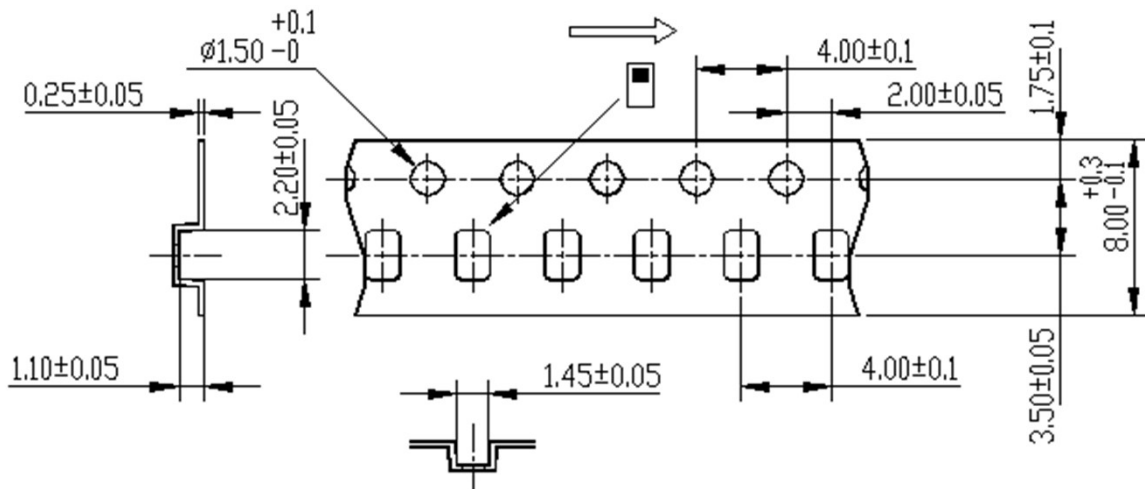
### ■ PACKAGING STYLE

Reel Dimensions



Unit: mm

Carrier Tape



STANDARD PACKAGE QUANTITY ( pieces/reel )
2,000

## 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 specification sheet 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 specification sheet.

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

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.