Apr. 2022 Ver.10.0
TDK Corporation

Multilayer Diplexer

For 698-960MHz / 1570-2690MHz

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

P/N: **DPX162690DT-8058A1**

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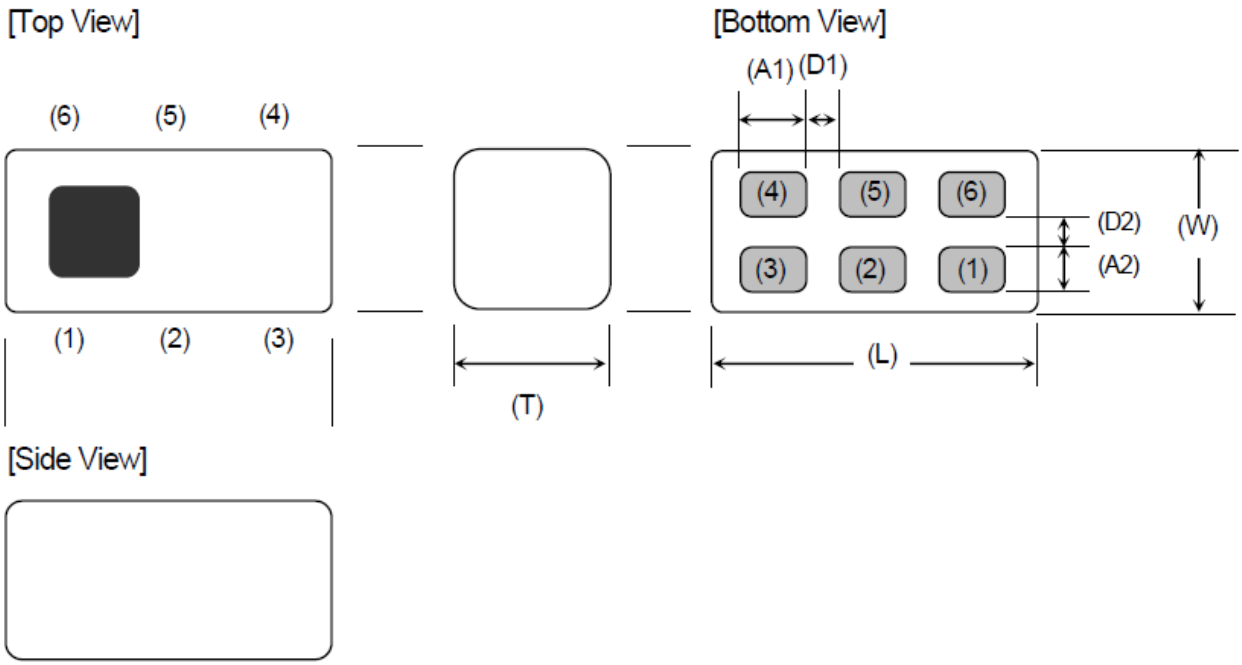
SHAPES AND DIMENSIONS



Dimensions (mm)

L	W	T	A1	D1	A2	D2
1.60 +/-0.10	0.80 +/-0.15	0.80 Max	0.35 +/-0.05	0.22 +/-0.05	#### +/-0.05	0.22 +/-0.05

Terminal functions

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

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

TERMINATION FINISH

Material
Au plate

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■ ELECTRICAL CHARACTERISTICS

(Measurement)

Low-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	698 to 960	-	0.58	0.73
Insertion Loss (dB) (–40 to +85 °C)	698 to 960	-	0.65	0.83
Return Loss@Common (dB)	698 to 960	12	19	-
Return Loss@Low-Band (dB)	698 to 960	12	19	-
Attenuation (dB)	1570 to 2690	25	28	-
				-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

High-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	1570 to 2690	-	0.47	0.70
Insertion Loss (dB) (–40 to +85 °C)	1570 to 2690	-	0.52	0.78
Return Loss@Common (dB)	1570 to 2690	12	16	-
Return Loss@High-Band (dB)	1570 to 2690	12	17	-
Attenuation (dB)	698 to 814	20	23	-
	814 to 905	23	25	-
	905 to 960	20	24	-
	5150 to 5850	12	15	-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

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■ ELECTRICAL CHARACTERISTICS

(Measurement)

Isolation

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Isolation (dB)	698 to 814	20	23	-
	814 to 905	23	26	-
	905 to 960	20	29	-
	1570 to 2690	25	29	-

Ta = +25+/-5°C

■ MAXIMUM RATINGS

Parameter			TDK Spec	Conditions
Operating temperature (°C)			–40 to +85 °C	
Storage temperature (°C)			–40 to +85 °C	
Power Handling (W) *1		Frequency (MHz)		
	Low-Band	698 to 960	4	CW Duty 50%
	High-Band	1570 to 2690	3	CW Duty 50%
Human Body Model : HBM		@Each Port (V)	+/-1000	100pF / 1500ohm
Machine Model : MM		@Each Port (V)	+/-150	200pF / 0ohm
Charged Device Model : CDM		@Each Port (V)	+/-500	Humidity : 60%RH max

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

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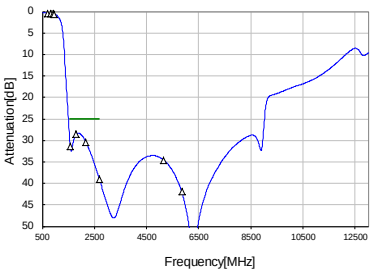
FREQUENCY CHARACTERISTICS

Low-Band Port



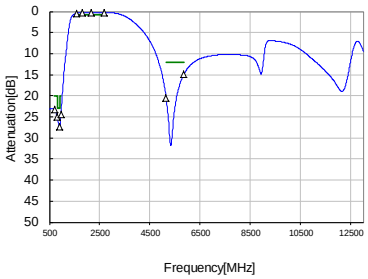
Insertion Loss

698	MHz	0.39 dB
814	MHz	0.43 dB
905	MHz	0.49 dB
960	MHz	0.58 dB

Attenuation

1570	MHz	31.48 dB
1805	MHz	28.49 dB
2170	MHz	30.39 dB
2690	MHz	39.06 dB
5150	MHz	34.55 dB
5850	MHz	41.95 dB

High-Band Port



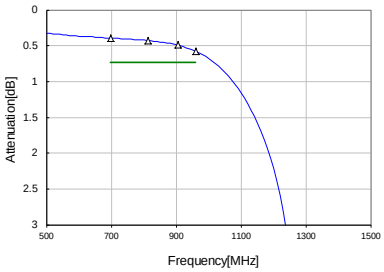
Insertion Loss

1570	MHz	0.47 dB
1805	MHz	0.26 dB
2170	MHz	0.26 dB
2690	MHz	0.25 dB

Attenuation

698	MHz	23.27 dB
814	MHz	25.03 dB
905	MHz	27.27 dB
960	MHz	24.32 dB
5150	MHz	20.56 dB
5850	MHz	14.96 dB

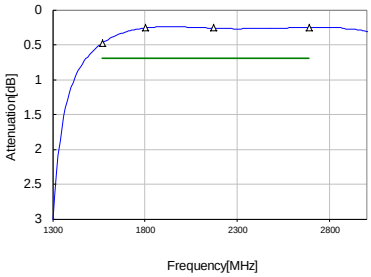
Low-Band Port



Insertion Loss

698	MHz	0.39 dB
814	MHz	0.43 dB
905	MHz	0.49 dB
960	MHz	0.58 dB

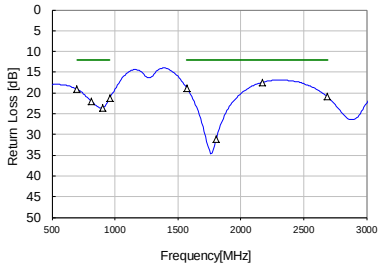
High-Band Port



Insertion Loss

1570	MHz	0.47 dB
1805	MHz	0.26 dB
2170	MHz	0.26 dB
2690	MHz	0.25 dB

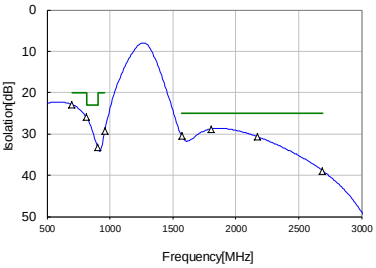
Common Port Return Loss



698	MHz	19.07 dB
814	MHz	21.97 dB
905	MHz	23.67 dB
960	MHz	21.20 dB

1570	MHz	18.85 dB
1805	MHz	31.07 dB
2170	MHz	17.49 dB
2690	MHz	20.93 dB

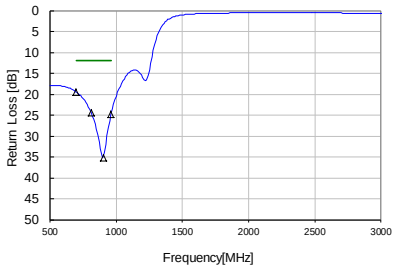
Isolation



698	MHz	22.9 dB
814	MHz	25.9 dB
905	MHz	33.2 dB
960	MHz	29.3 dB

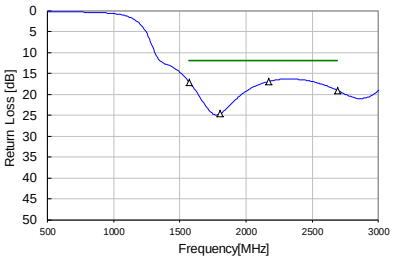
1570	MHz	30.5 dB
1805	MHz	28.8 dB
2170	MHz	30.6 dB
2690	MHz	38.9 dB

Low-Band Port Return Loss



698	MHz	19.45 dB
814	MHz	24.32 dB
905	MHz	35.12 dB
960	MHz	24.81 dB

High-Port Return Loss



1570	MHz	17.14 dB
1805	MHz	24.65 dB
2170	MHz	16.99 dB
2690	MHz	19.08 dB

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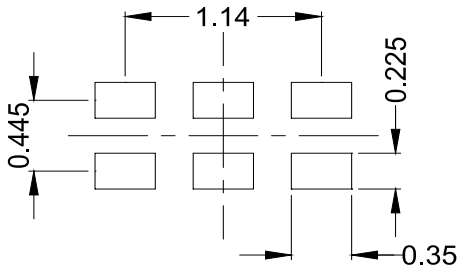
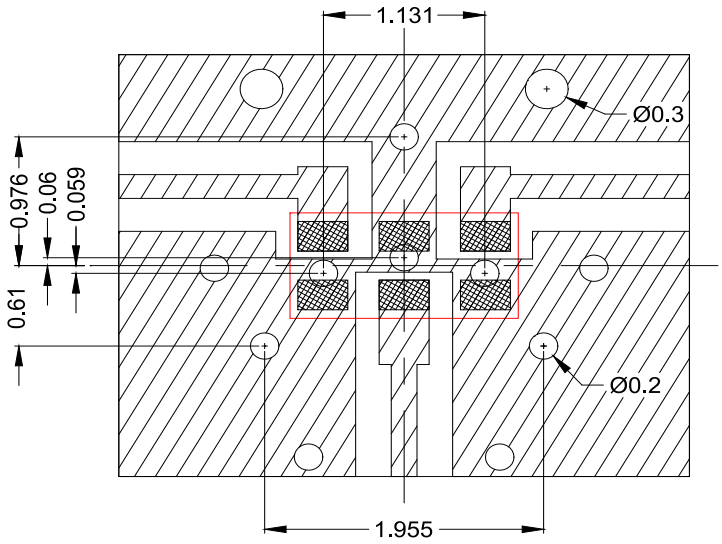
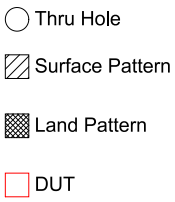
RECOMMENDED LAND PATTERN



unit : mm

EVALUATION BOARD





unit : mm

Material & Layer	Thickness
Copper Surface Pattern	0.035 mm
FR-4	0.10 mm
Inner GND	0.018 mm
FR-4	0.30 mm
Copper Bottom GND	0.035 mm

* 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

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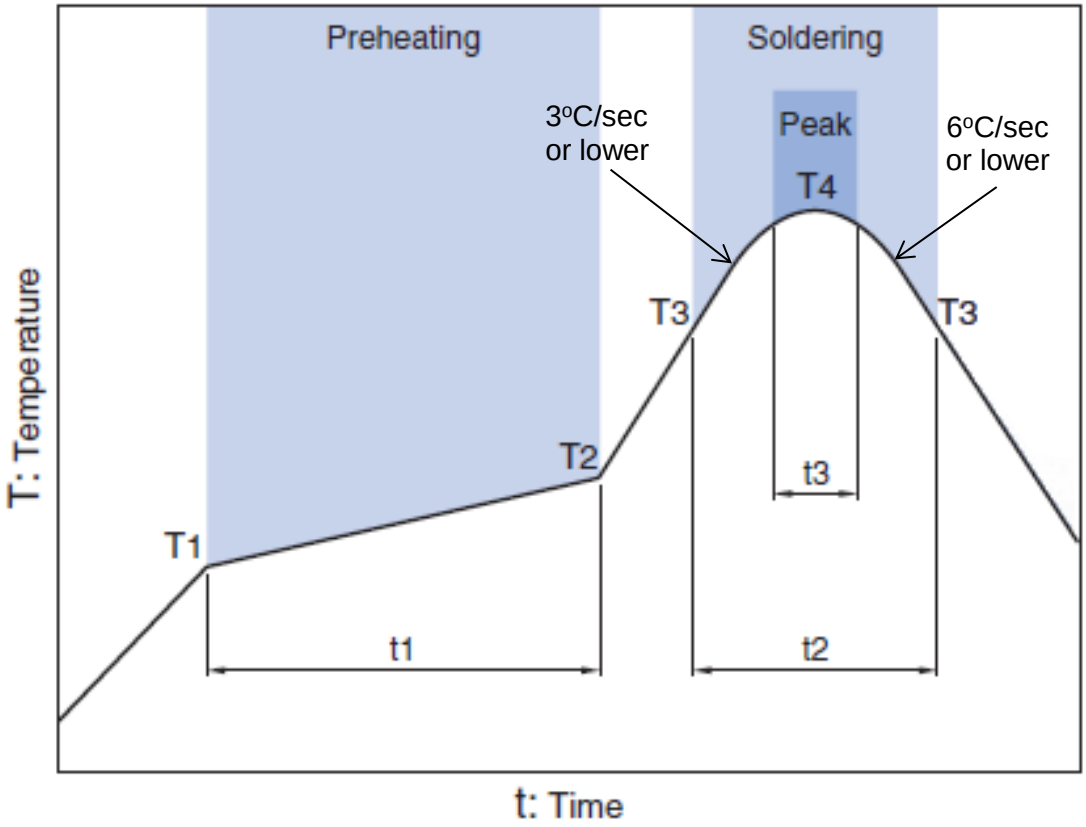
■ RECOMMENDED REFLOW PROFILE



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/diplexer/general_tech_info/rf_general-technical-info_02_en.pdf

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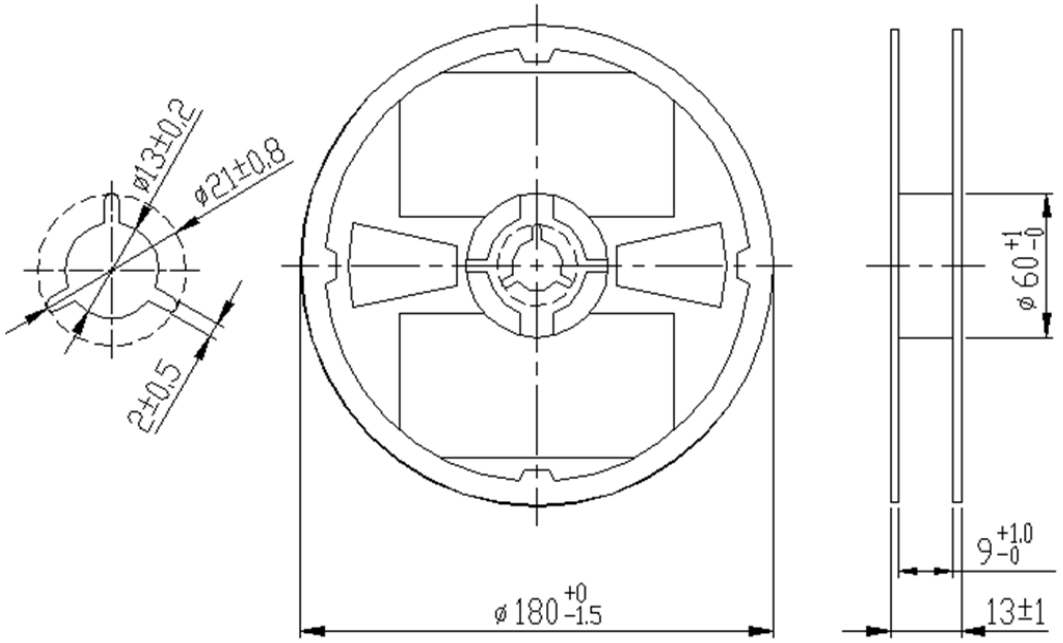
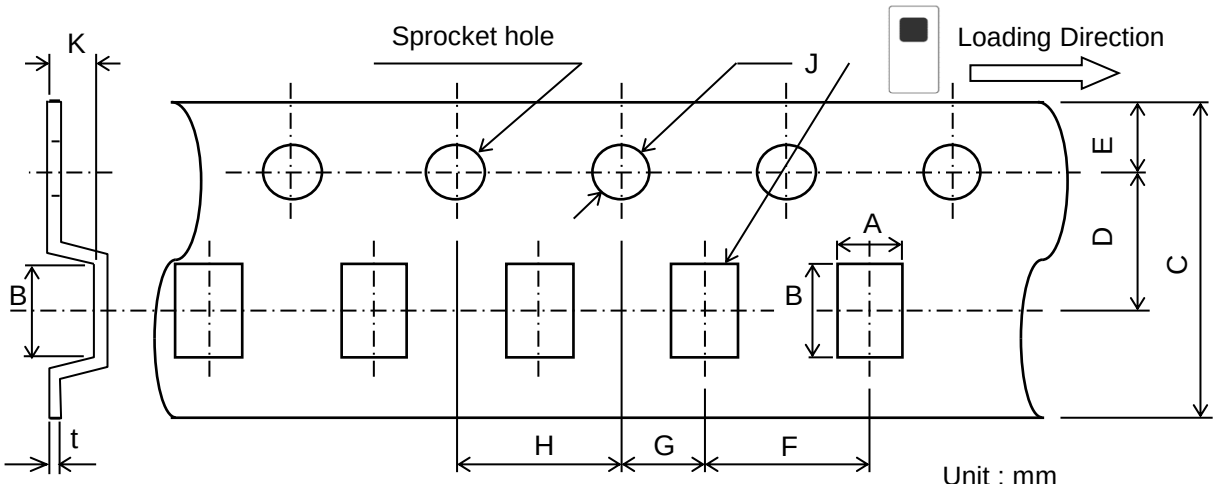
■ PACKAGING STYLE

Reel Dimensions



Dimensions in mm

Carrier Tape



Unit : mm

Dimensions (mm)

A	B	C	D	E	F	G	H	J	K	t
0.97 +/-0.05	1.8 +/-0.05	8.0 +0.3/-0.1	3.5 +/-0.05	1.75 +/-0.1	4.0 +/-0.1	2.0 +/-0.05	4.0 +/-0.1	1.5 +0.1/-0	1.0 Max	0.25 +/-0.05

STANDARD PACKAGE QUANTITY (pieces/reel)
4,000

使用注意事项

在使用本产品前，请务必随附采购规格书。

安全注意事项

使用本产品时，请注意安全事项。

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(9) 军事设备
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