



Jan. 2018 Ver.4.0
TDK Corporation

Multilayer Diplexer

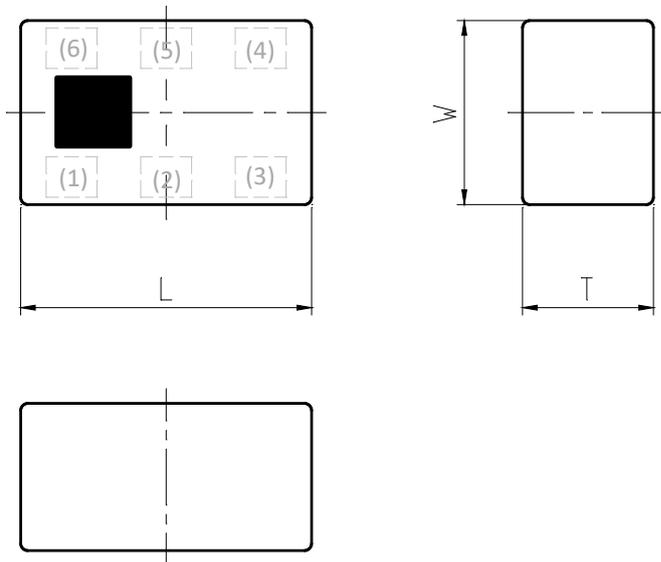
DPX Series 2.0x1.25mm [EIA 0805] TYPE

P/N: **DPX205850DT-4206A3**

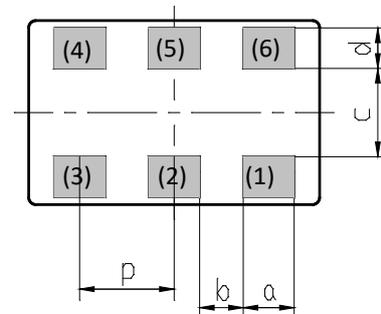
DPX205850DT-4206A3

SHAPES AND DIMENSIONS

[Top View]



[Bottom View]



Dimensions (mm)

L	W	T	a	b	c	d	p
2.00	1.25	0.65	0.35	0.30	0.60	0.275	0.65
+/-0.10	+/-0.10	Max	+/-0.10	+/-0.15	+/-0.10	+/-0.10	+/-0.10

Terminal functions

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

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

TERMINATION FINISH

Material
Au plate

DPX205850DT-4206A3**ELECTRICAL CHARACTERISTICS**

(Measurement)

Low-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	1559 to 3800	-	0.31	0.50
Insertion Loss (dB) (-40 to +85 °C)	1559 to 3800	-	-	0.60
VSWR	1559 to 3800	-	1.32	2.00
Attenuation (dB)	5150 to 5850	18	21	-

Ta = +25+/-5°C

High-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	5150 to 5850	-	0.50	0.60
Insertion Loss (dB) (-40 to +85 °C)	5150 to 5850	-	-	0.70
VSWR	5150 to 5850	-	1.35	2.00
Attenuation (dB)	3400 to 3800	20	26	-
	10300 to 11700	20	25	-
	15450 to 17550	20	24	-

Ta = +25+/-5°C

MAXIMUM RATINGS

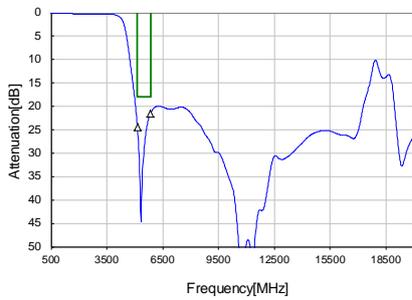
Parameter		TDK Spec		Conditions
		Min.	Max.	
Operating temperature (°C)		-40 to +85 °C		
Storage temperature (°C)		-40 to +85 °C		
Power Handling (W)	Common Port	-	1	CW
	Low-Band Port	-	1	CW
	High-Band Port	-	1	CW
Human Body Model : HBM	@Each Port (V)	-1000	1000	100pF / 1500ohm
Machine Model : MM	@Each Port (V)	-150	150	200pF / 0ohm
Charged Device Model : CDM	@Each Port (V)	-500	500	Relative humidity : 51%RH max

Ambient temperature : +25+/-5°C

DPX205850DT-4206A3

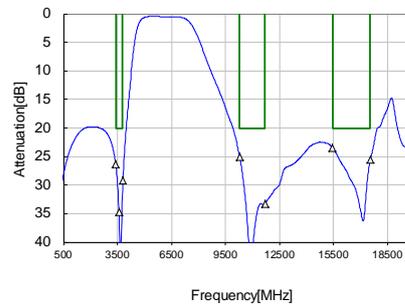
FREQUENCY CHARACTERISTICS

Low band-Port



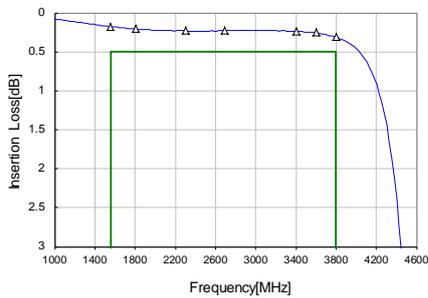
Attenuation	
5150 MHz	24.45 dB
5850 MHz	21.45 dB

High band-Port



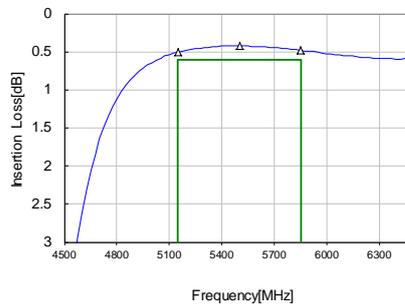
Attenuation	
3400 MHz	26.32 dB
3600 MHz	34.73 dB
3800 MHz	29.24 dB
10300 MHz	25.00 dB
11700 MHz	33.20 dB
15450 MHz	23.54 dB
17550 MHz	25.52 dB

Low band-Port



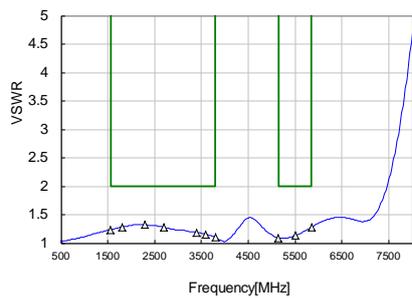
Insertion Loss	
1559 MHz	0.18 dB
1805 MHz	0.21 dB
2300 MHz	0.23 dB
2690 MHz	0.23 dB
3400 MHz	0.24 dB
3600 MHz	0.25 dB
3800 MHz	0.31 dB

High band-Port



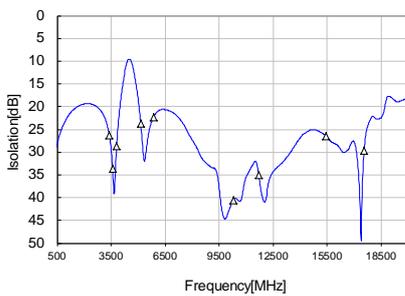
Insertion Loss	
5150 MHz	0.50 dB
5500 MHz	0.43 dB
5850 MHz	0.48 dB

Common Port VSWR



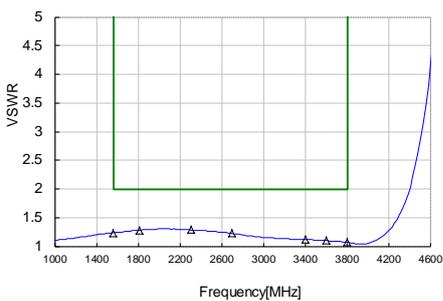
VSWR	
1559 MHz	1.24
1805 MHz	1.28
2300 MHz	1.32
2690 MHz	1.28
3400 MHz	1.19
3600 MHz	1.16
3800 MHz	1.10
5150 MHz	1.09
5500 MHz	1.13
5850 MHz	1.28

Isolation



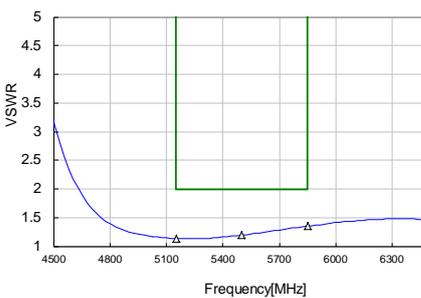
Isolation	
3400 MHz	26.3 dB
3600 MHz	33.7 dB
3800 MHz	28.7 dB
5150 MHz	23.8 dB
5850 MHz	22.3 dB
10300 MHz	40.5 dB
11700 MHz	35.1 dB
15450 MHz	26.5 dB
17550 MHz	29.8 dB

Low band-Port VSWR



VSWR	
1559 MHz	1.24
1805 MHz	1.28
2300 MHz	1.29
2690 MHz	1.22
3400 MHz	1.11
3600 MHz	1.10
3800 MHz	1.07

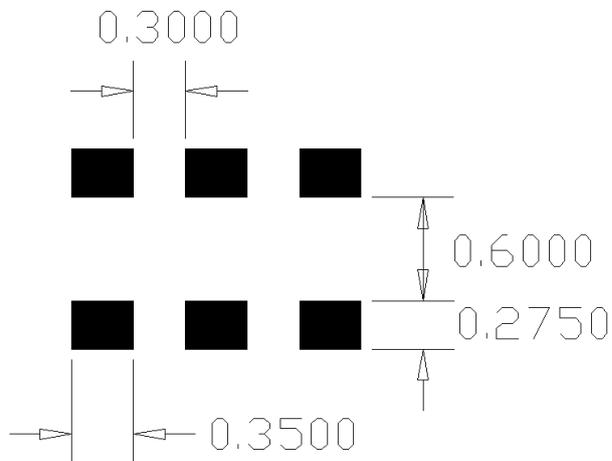
High band-Port VSWR



VSWR	
5150 MHz	1.14
5500 MHz	1.20
5850 MHz	1.35

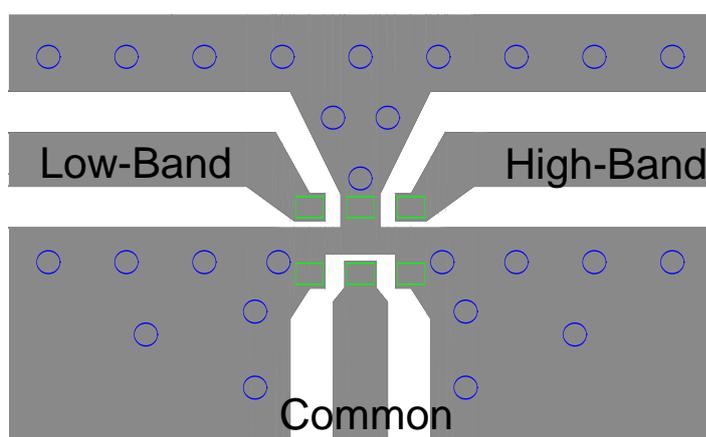
DPX205850DT-4206A3

RECOMMENDED LAND PATTERN



Unit: mm

EVALUATION BOARD



- Thru Hole
- Resist
- Surface Pattern

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

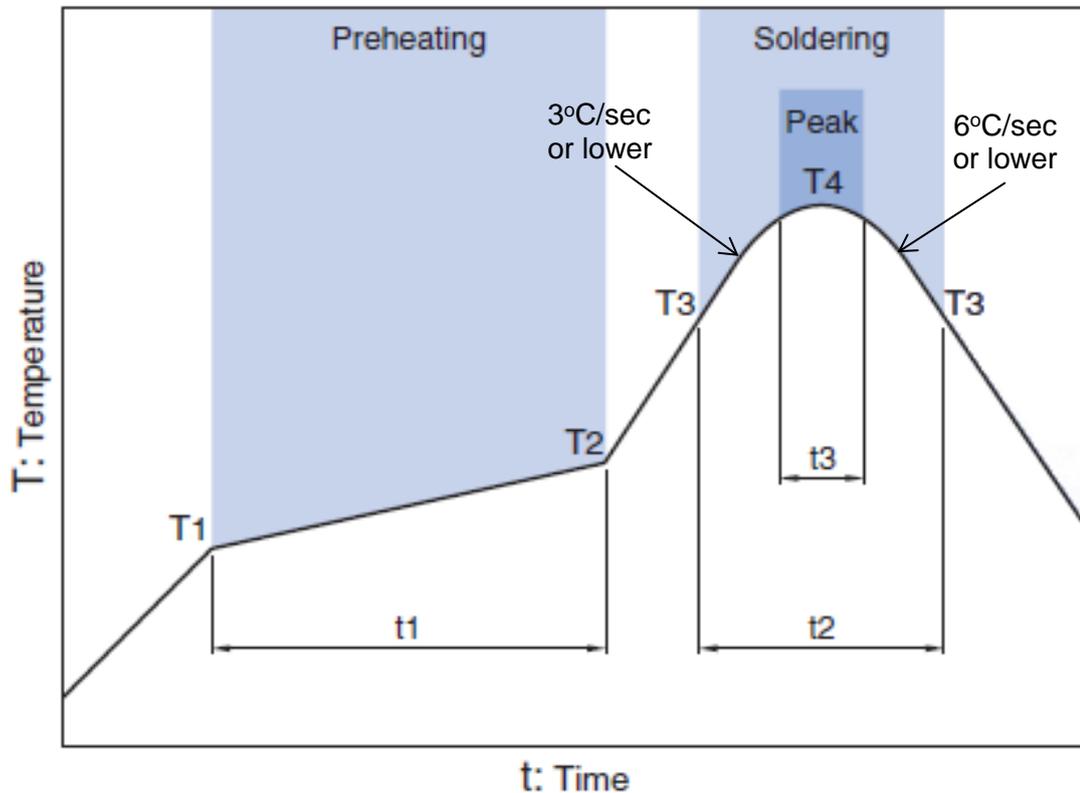
* Line width should be designed to match 50 ohm characteristic impedance depending on PCB material and thickness.

ENVIRONMENT INFORMATION

RoHS Statement
RoHS Compliance

DPX205850DT-4206A3

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

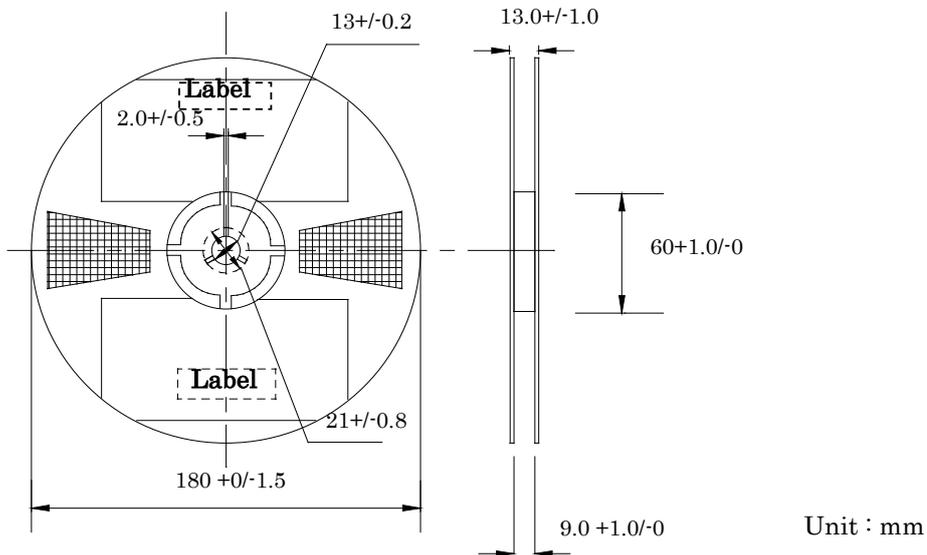
* t3 : Time within 5°C of actual peak temperature

The maximum number of reflow is 3.

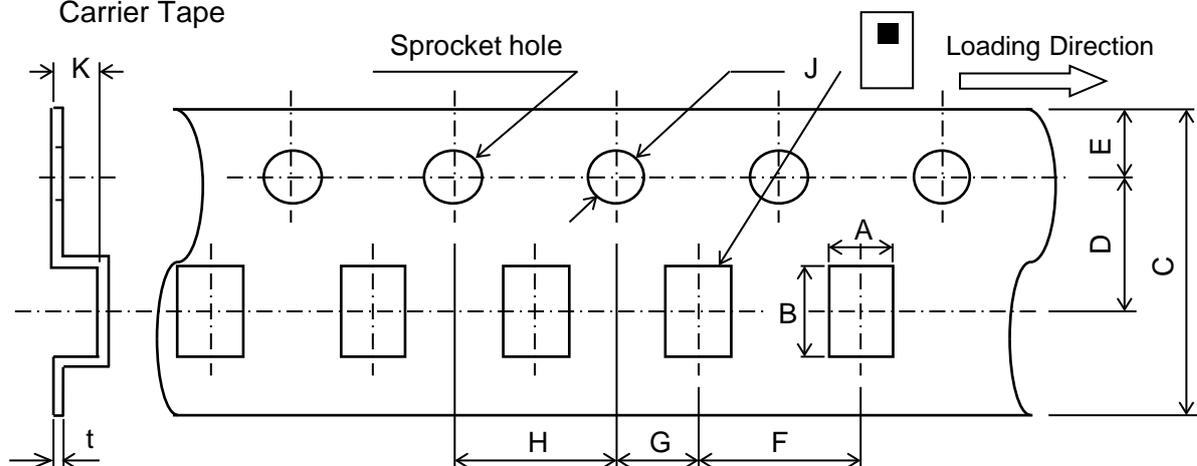
Note: Lead free solder is recommended.
Recommended solder is Sn-3.0Ag-0.5Cu. (M705 by Senju Metal Industry)

DPX205850DT-4206A3**PACKAGING STYLE**

Reel Dimensions



Carrier Tape



Dimensions (mm)

A	B	C	D	E	F	G	H	J	K	t
1.45	2.2	8.0	3.5	1.75	4.0	2.0	4.0	1.5	0.8	0.25
+/-0.05	+/-0.05	+0.3/-0.1	+/-0.05	+/-0.1	+/-0.1	+/-0.05	+/-0.1	+0.1/-0	MAX	+/-0.05

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.

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