



Sep.2022 Ver.3.0a
TDK Corporation

Multilayer Diplexer

For 617-2690MHz / 3300-5925MHz

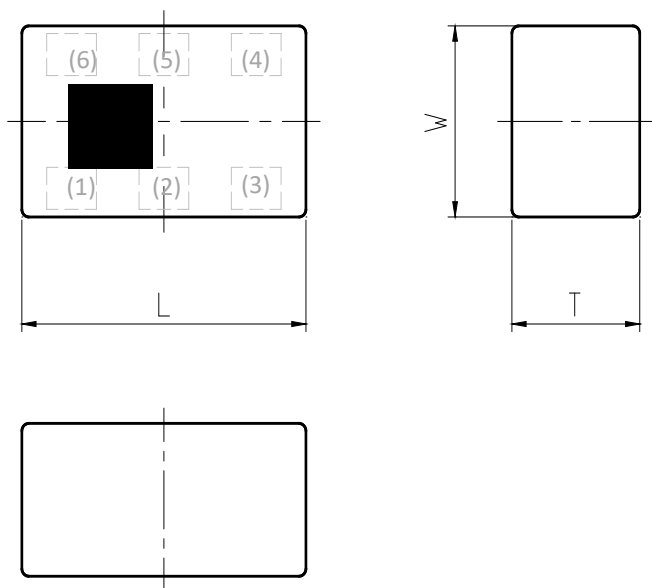
DPX Series 2.0x1.25mm [EIA 0805] TYPE

P/N: **DPX205925DT-4213A4**

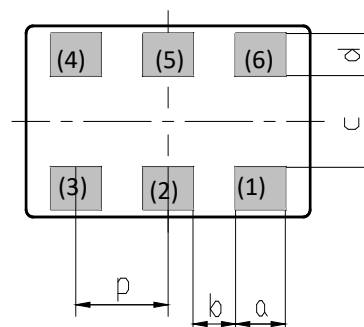
DPX205925DT-4213A4

SHAPES AND DIMENSIONS

[Top View]



[Bottom View]



Dimensions (mm)

L	W	T	a	b	c	d	p
2.00	1.25	0.60	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
Ag

DPX205925DT-4213A4

ELECTRICAL CHARACTERISTICS

(Measurement)

Low-Band

Parameter	Frequency (MHz)	TDK Spec.		
		Min.	Typ.	Max.
Insertion Loss (dB)	617 to 960	-	0.17	0.35
	1427 to 1511	-	0.23	0.45
	1710 to 2170	-	0.40	0.55
	2300 to 2496	-	0.58	0.75
	2496 to 2690	-	0.73	0.90
Insertion Loss (dB) (-40 to +85 °C)	617 to 960	-	-	0.45
	1427 to 1511	-	-	0.55
	1710 to 2170	-	-	0.65
	2300 to 2496	-	-	0.85
	2496 to 2690	-	-	1.05
VSWR (Low-Band Port)	617 to 960	-	1.19	1.50
	1427 to 1710	-	1.23	1.50
	1710 to 2170	-	1.30	1.67
	2170 to 2690	-	1.37	1.67
Attenuation (dB)	3300 to 3400	18.0	26.8	-
	3400 to 4200	23.0	26.7	-
	4400 to 5000	23.0	30.6	-
	5150 to 5925	30.0	39.9	-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

High-Band

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	3300 to 3400	-	0.85	1.30
	3400 to 4200	-	0.73	1.00
	4400 to 5000	-	0.27	0.70
	5150 to 5925	-	0.20	0.50
Insertion Loss (dB) (-40 to +85 °C)	3300 to 3400	-	-	1.40
	3400 to 4200	-	-	1.10
	4400 to 5000	-	-	0.80
	5150 to 5925	-	-	0.60
VSWR (High-Band Port)	3300 to 3400	-	1.27	1.67
	3400 to 4200	-	1.41	1.67
	4400 to 5000	-	1.24	1.67
	5150 to 5925	-	1.24	1.50
Attenuation (dB)	617 to 960	30.0	37.1	-
	1427 to 1511	30.0	43.1	-
	1710 to 2170	25.0	29.9	-
	2170 to 2690	22.0	25.7	-
	10300 to 11850	25.0	42.5	-
	15450 to 17775	5.0	13.1	-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

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ELECTRICAL CHARACTERISTICS

(Measurement)

Common

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
VSWR (Common Port)	617 to 960	-	1.15	1.50
	1427 to 1710	-	1.17	1.50
	1710 to 2170	-	1.31	1.67
	2170 to 2690	-	1.40	1.67
	3300 to 3400	-	1.23	1.67
	3400 to 4200	-	1.42	1.67
	4400 to 5000	-	1.21	1.67
	5150 to 5925	-	1.24	1.50
Isolation (dB)	617 to 960	30.0	36.6	-
	1427 to 1511	30.0	42.6	-
	1710 to 2170	23.0	31.5	-
	2170 to 2690	23.0	28.6	-
	3300 to 3400	20.0	26.4	-
	3400 to 3800	23.0	27.6	-
	3800 to 4200	23.0	26.4	-
	4400 to 5000	23.0	30.5	-
	5150 to 5925	28.0	39.3	-

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	617 to 960	4	GSM signal Duty 50%
	1710 to 1910	4	GSM signal Duty 50%
	1427 to 2690	1	CW
High-Band	3300 to 5925	1	CW
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

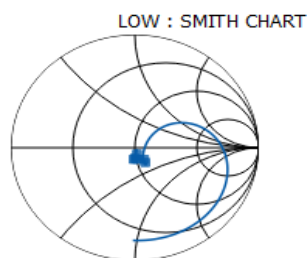
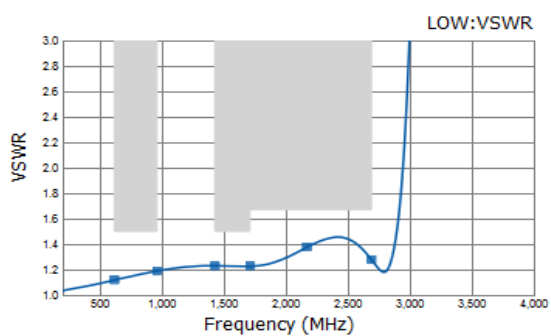
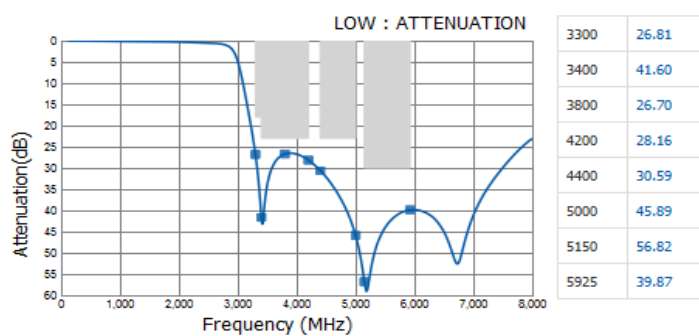
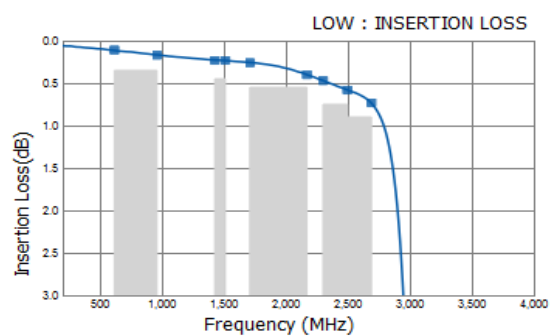
*1 : Refer to 3GPP TS 38.101-1 V15.2.0

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FREQUENCY CHARACTERISTICS

ANT - LOW

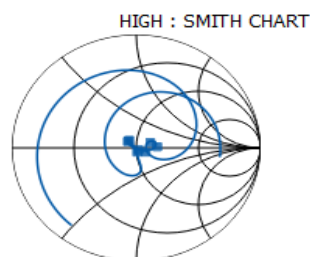
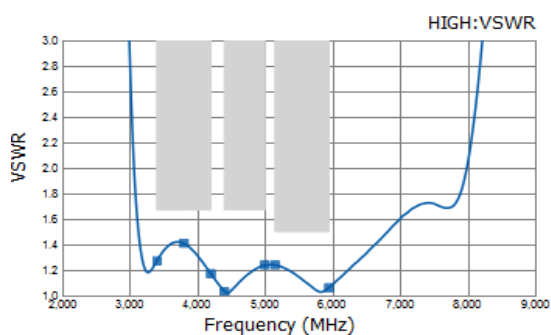
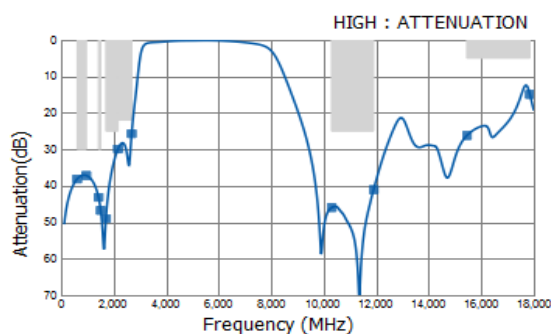
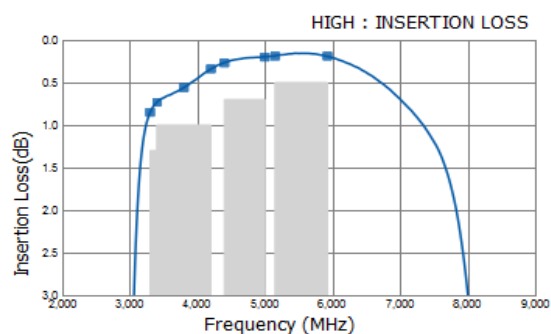


617	0.01 / -0.05
960	-0.01 / -0.09
1427	-0.02 / -0.1
1710	0.01 / -0.1
2170	0.08 / -0.13
2690	0.07 / -0.1

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■ FREQUENCY CHARACTERISTICS

ANT - HIGH

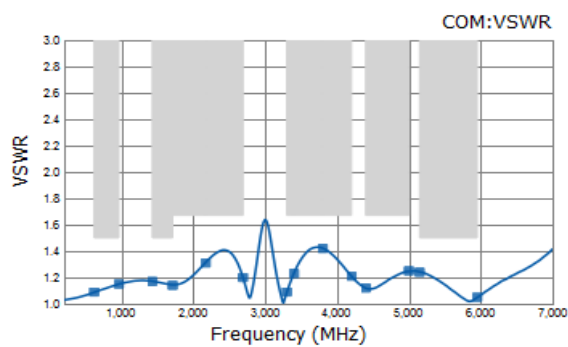


3400	0.11 / 0.06
3800	0.17 / 0.02
4200	0.07 / -0.03
4400	0.01 / -0.01
5000	-0.08 / 0.07
5150	-0.07 / 0.08
5950	0 / -0.03

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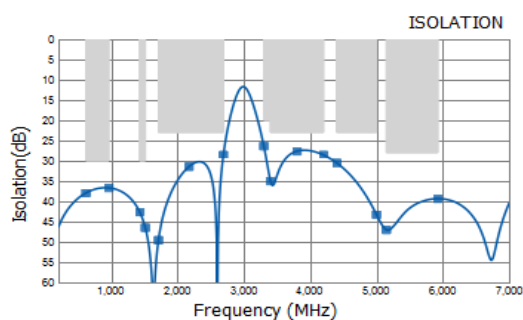
FREQUENCY CHARACTERISTICS

COMMON



617	1.09
960	1.15
1427	1.17
1710	1.14
2170	1.31
2690	1.20
3300	1.09
3400	1.23
3800	1.42
4200	1.21
4400	1.12
5000	1.25
5150	1.24
5950	1.05

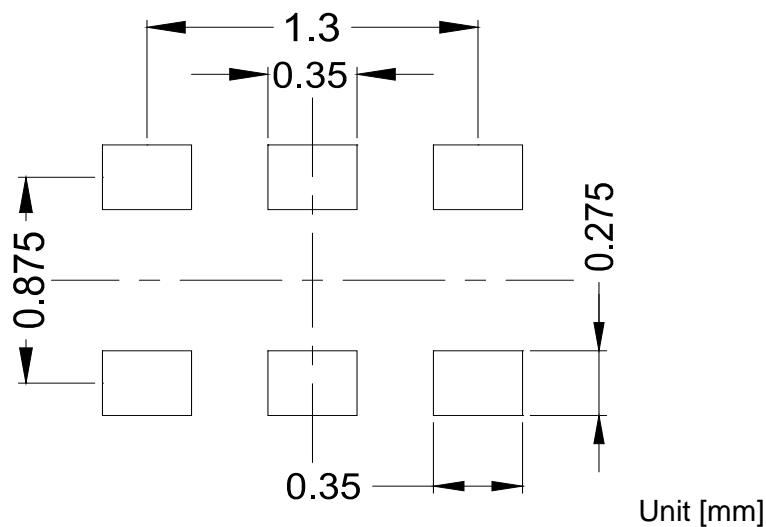
ISOLATION



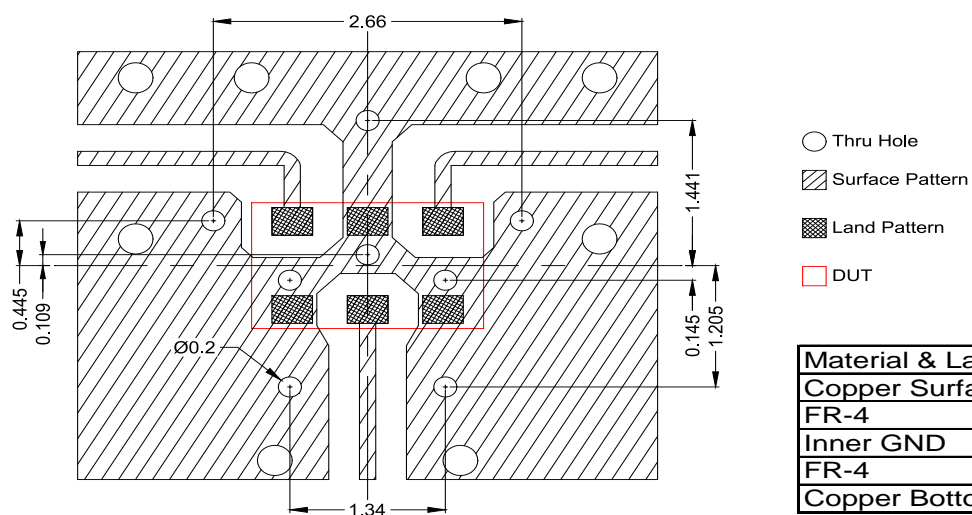
617	37.92
960	36.68
1427	42.61
1511	46.50
1710	49.58
2170	31.45
2690	28.58
3300	26.38
3400	34.97
3800	27.63
4200	28.57
4400	30.52
5000	43.29
5150	47.05
5925	39.34

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RECOMMENDED LAND PATTERN



EVALUATION BOARD



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.

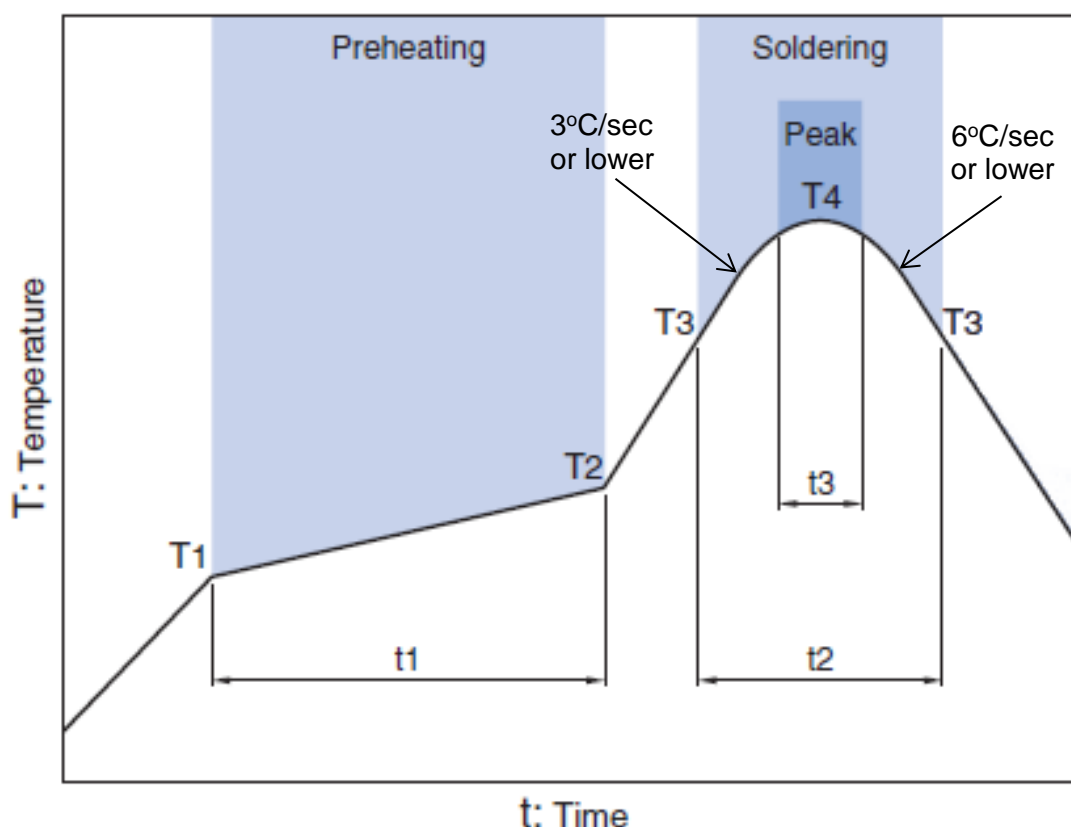
ENVIRONMENT INFORMATION

RoHS Statement
RoHS Compliance

All specifications are subject to change without notice.
Before using these products, be sure to request the delivery specifications.

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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.

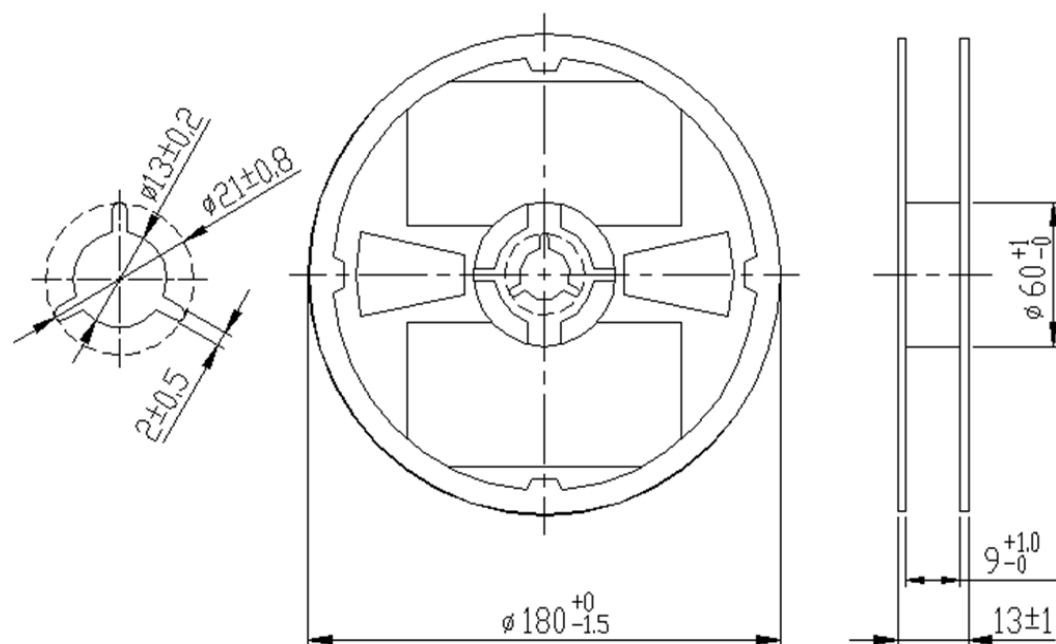
Note: Lead free solder is recommended.
Recommended solder is Sn-3.0Ag-0.5Cu. (M705 by Senju Metal Industry)

GENERAL TECHNICAL INFORMATION

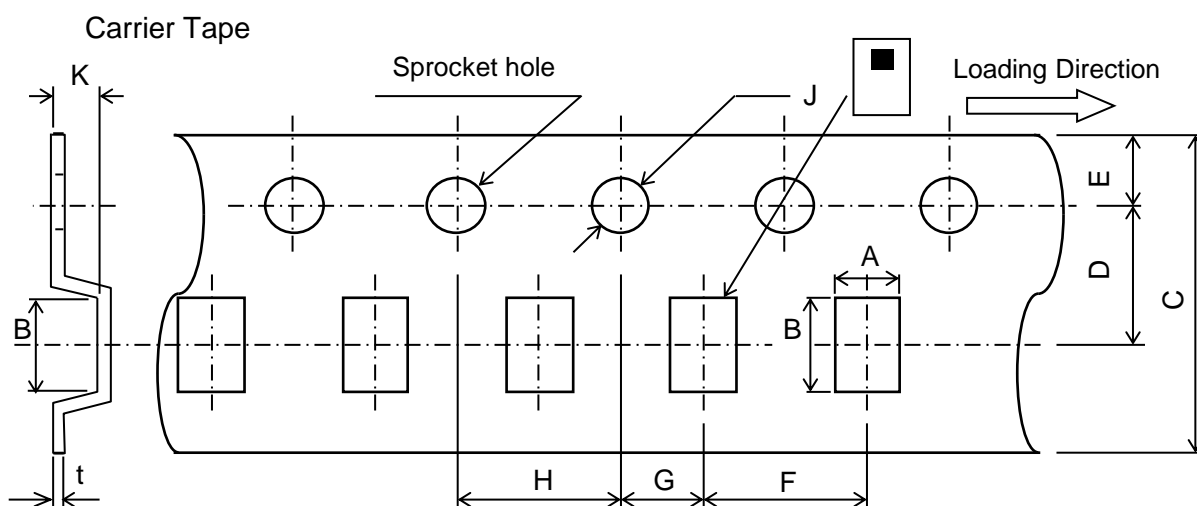
https://product.tdk.com/en/system/files?file=dam/doc/product/rf/rf/diplexer/general_tech_info/rf_general-technical-info_02_en.pdf

DPX205925DT-4213A4**PACKAGING STYLE**

Reel Dimensions



Dimensions in mm



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 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.