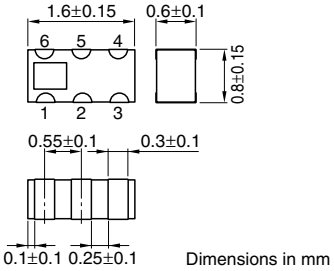
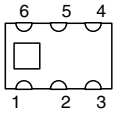
TDK

Multilayer Diplexers, DPX Series

DPX161990DT-8003B1

SHAPES AND DIMENSIONS/CIRCUIT

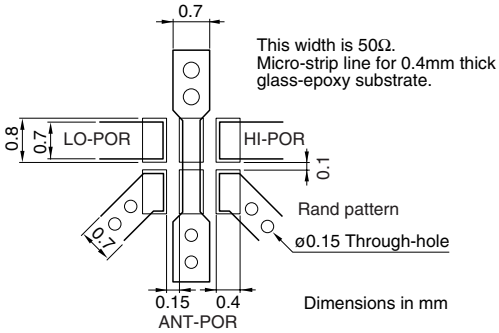




TERMINAL FUNCTIONS

1	GND
2	ANT
3	GND
4	HIGH
5	GND
6	LOW

RECOMMENDED PCB PATTERN



ELECTRICAL CHARACTERISTICS

Item	Port	Frequency range		Minimum value	Typical value	Maximum value
Insertion loss	Lo-band	824 to 960MHz	(dB)	—	—	0.7
	Hi-band	1710 to 1990MHz	(dB)	—	—	0.85
Return loss	ANT	824 to 960MHz	(dB)	10.0	—	—
	ANT	1710 to 1990MHz	(dB)	10.0	—	—
Attenuation	Hi-band	824 to 960MHz	(dB)	17.0	—	—
	Lo-band	1710 to 1990MHz	(dB)	15.0	—	—
Temperature range		Operating	(°C)	–40	—	+85°C
		Storage	(°C)	–40	—	+85°C

• Ta:+25°C

• All specifications are subject to change without notice.

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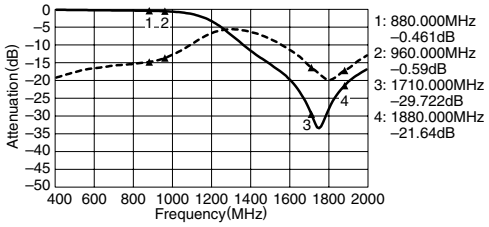
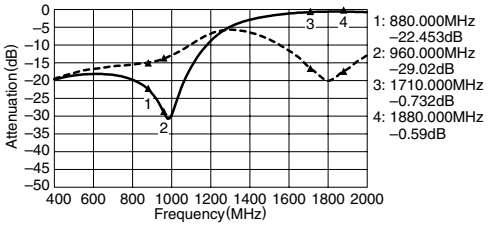
FREQUENCY CHARACTERISTICS

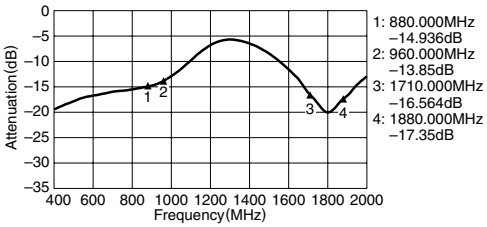
Lo-BAND PORT S21



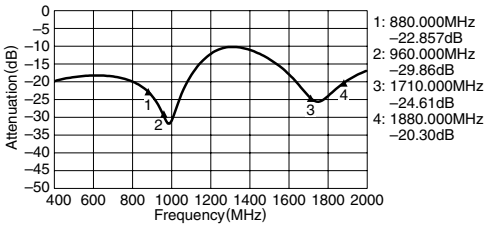
Hi-BAND PORT S31



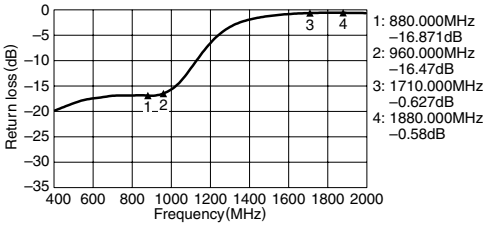
COMMON PORT RETURN LOSS S11



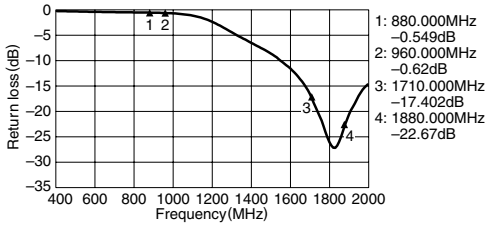
ISORATION S23



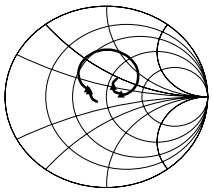
Lo-BAND PORT RETURN LOSS S22



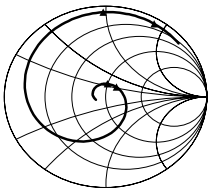
Hi-PORT RETURN LOSS S33



SMITH CHART



S11



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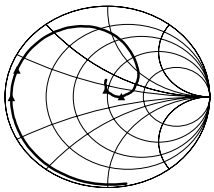

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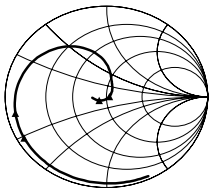
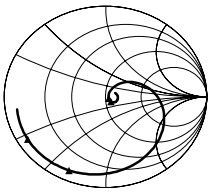


S21



S31

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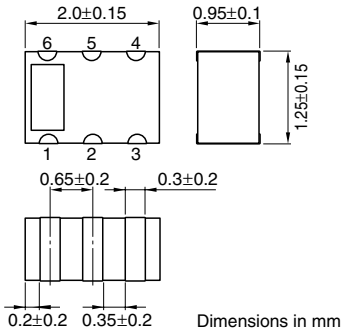
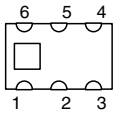
Multilayer Diplexers, DPX Series

DPX201578DT-4017A1

SHAPES AND DIMENSIONS/CIRCUIT



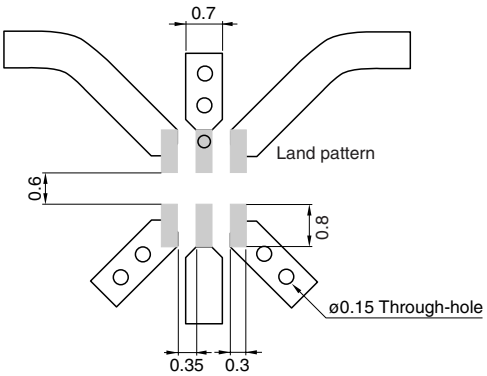
Dimensions in mm



TERMINAL FUNCTIONS

1	GND
2	ANT
3	GND
4	HIGH
5	GND
6	LOW

RECOMMENDED PCB PATTERN



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

Dimensions in mm

ELECTRICAL CHARACTERISTICS

Item	Port		Frequency range		Minimum value	Typical value	Maximum value
Insertion loss	Lo-band		823 to 925MHz	(dB)	—	—	0.55
	Lo-band	[–40 to +85°C]	823 to 925MHz	(dB)	—	—	0.65
	Hi-band		1572.5 to 1578.5MHz	(dB)	—	—	0.60
	Hi-band	[–40 to +85°C]	1572.5 to 1578.5MHz	(dB)	—	—	0.70
VSWR	ANT		823 to 925MHz		—	—	1.60
	ANT		1572.5 to 1578.5MHz		—	—	1.60
	Lo-band		823 to 925MHz		—	—	1.60
	Hi-band		1572.5 to 1578.5MHz		—	—	1.60
Attenuation	Hi-band		823 to 925MHz	(dB)	25.0	—	—
	Lo-band		1572.5 to 1578.5MHz	(dB)	23.0	—	—
Temperature range			Operating	(°C)	–40	—	+85°C
			Storage	(°C)	–40	—	+85°C

• Ta:+25°C

• All specifications are subject to change without notice.

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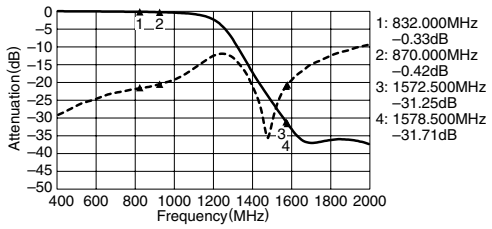
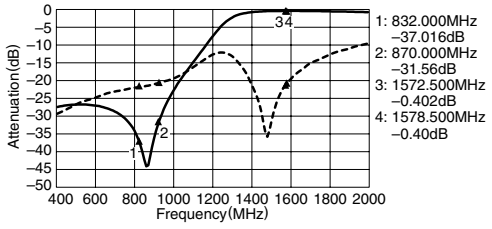
FREQUENCY CHARACTERISTICS

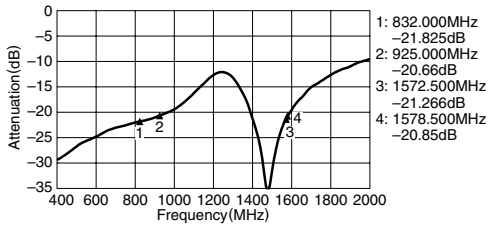
Lo-BAND PORT S21



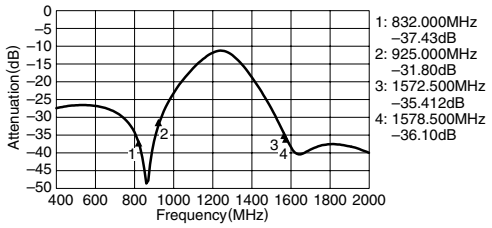
Hi-BAND PORT S31



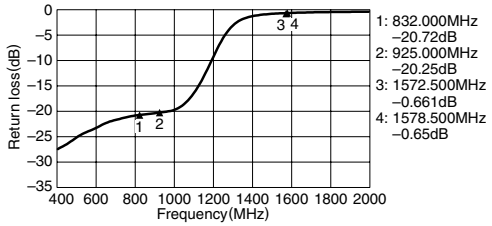
COMMON PORT RETURN LOSS S11



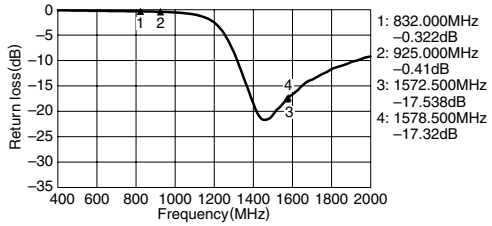
ISORATION S23



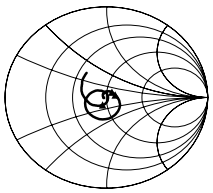
Lo-BAND PORT RETURN LOSS S22



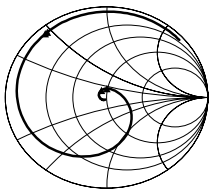
Hi-PORT RETURN LOSS S33



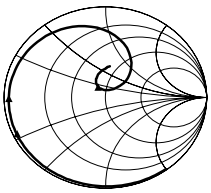
SMITH CHART



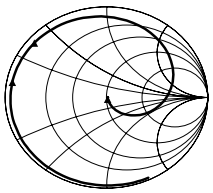
S11



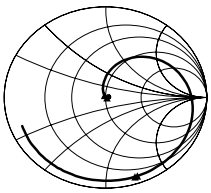
S22



S33



S21



S31

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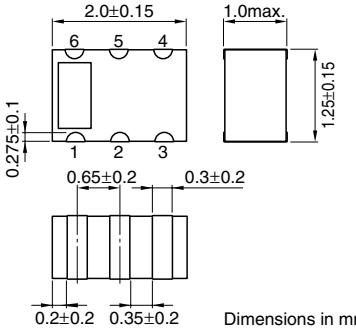
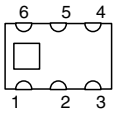
Multilayer Diplexers, DPX Series

DPX201990DT-4011D1

SHAPES AND DIMENSIONS/CIRCUIT



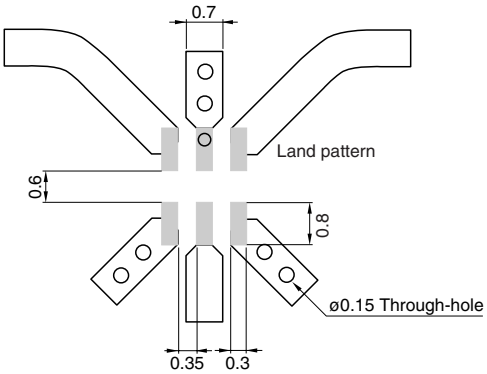
Dimensions in mm



TERMINAL FUNCTIONS

1	GND
2	ANT
3	GND
4	HIGH
5	GND
6	LOW

RECOMMENDED PCB PATTERN



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

Dimensions in mm

ELECTRICAL CHARACTERISTICS

Item	Port	Frequency range		Minimum value	Typical value	Maximum value
Insertion loss	Lo-band	824 to 960MHz	(dB)	—	—	0.5
	Hi-band	1710 to 1990MHz	(dB)	—	—	0.55
Return loss	ANT	824 to 960MHz	(dB)	10.0	—	—
	ANT	1710 to 1990MHz	(dB)	10.0	—	—
Attenuation	Hi-band	824 to 960MHz	(dB)	20.0	—	—
	Lo-band	1710 to 1990MHz	(dB)	20.0	—	—
Temperature range		Operating	(°C)	–40	—	+85°C
		Storage	(°C)	–40	—	+85°C

• Ta:+25°C

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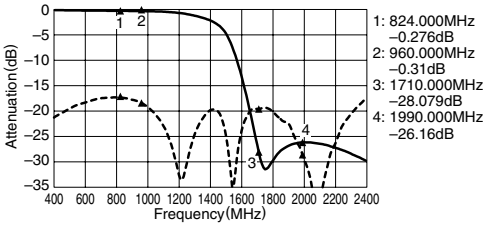
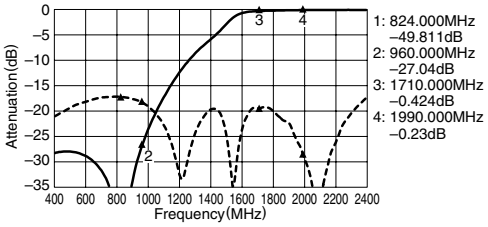
FREQUENCY CHARACTERISTICS

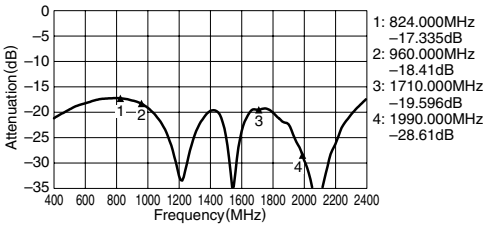
Lo-BAND PORT S21



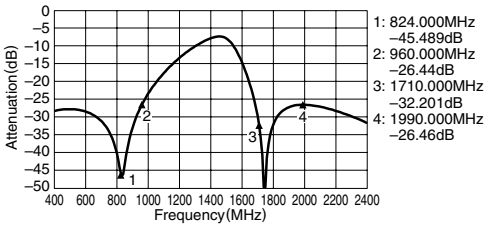
Hi-BAND PORT S31



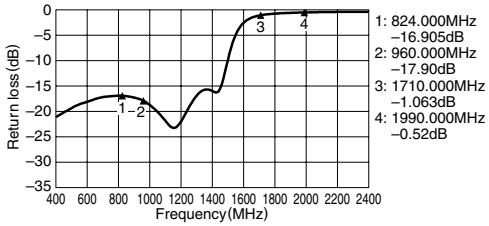
COMMON PORT RETURN LOSS S11



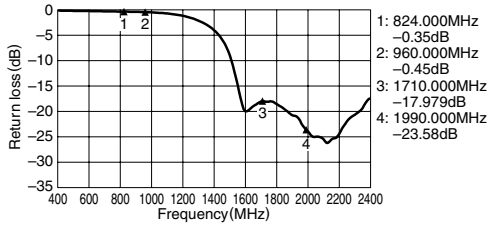
ISORATION S23



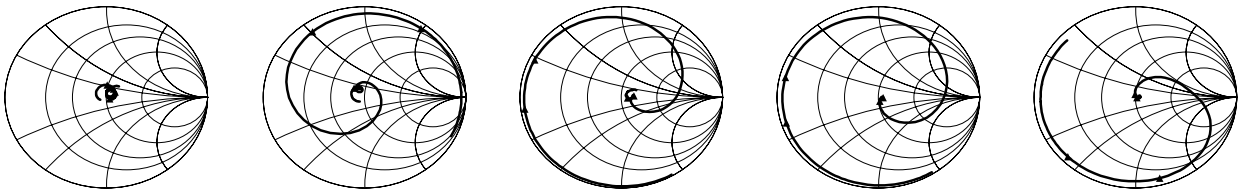
Lo-BAND PORT RETURN LOSS S22



Hi-PORT RETURN LOSS S33



SMITH CHART



S11 S22 S33 S21 S31

• All specifications are subject to change without notice.

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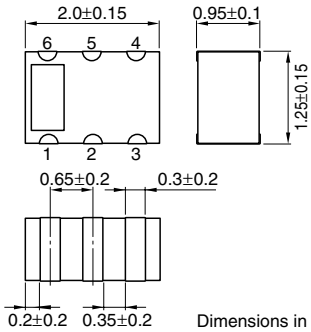
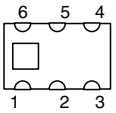
Multilayer Diplexers, DPX Series

DPX201990DT-4012A1

SHAPES AND DIMENSIONS/CIRCUIT



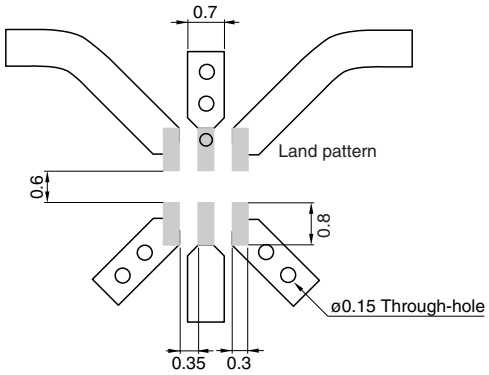
Dimensions in mm



TERMINAL FUNCTIONS

1	GND
2	ANT
3	GND
4	HIGH
5	GND
6	LOW

RECOMMENDED PCB PATTERN



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

Dimensions in mm

ELECTRICAL CHARACTERISTICS

Item	Port	Frequency range		Minimum value	Typical value	Maximum value
Insertion loss	Lo-band	824 to 894MHz	(dB)	—	—	0.65
	Hi-band	1574 to 1576ÅA1850 to 1990MHz	(dB)	—	—	0.7
Return loss	ANT	824 to 894MHz	(dB)	10.0	—	—
	ANT	1574 to 1576ÅA1850 to 1990MHz	(dB)	10.0	—	—
Attenuation	Hi-band	824 to 894MHz	(dB)	20.0	—	—
	Lo-band	1574 to 1576ÅA1850 to 1990MHz	(dB)	20.0	—	—
Temperature range		Operating	(°C)	–40	—	+85°C
		Storage	(°C)	–40	—	+85°C

• Ta:+25°C

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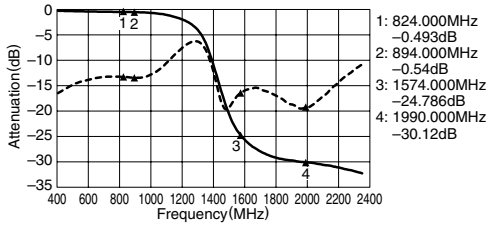
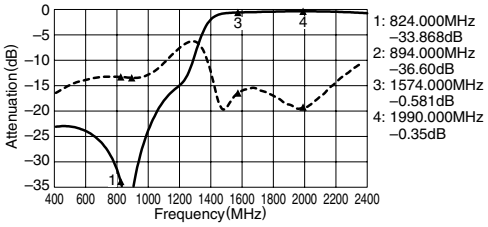
FREQUENCY CHARACTERISTICS

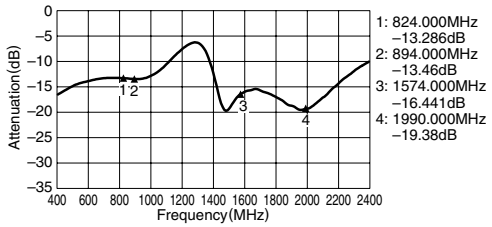
Lo-BAND PORT S21



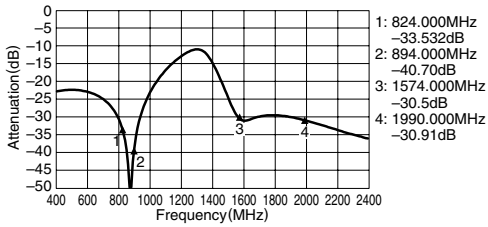
Hi-BAND PORT S31



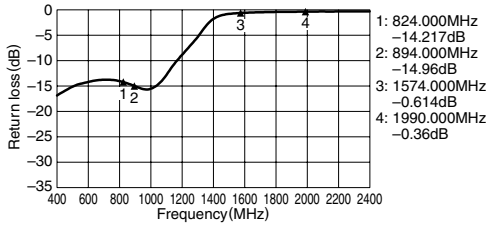
COMMON PORT RETURN LOSS S11



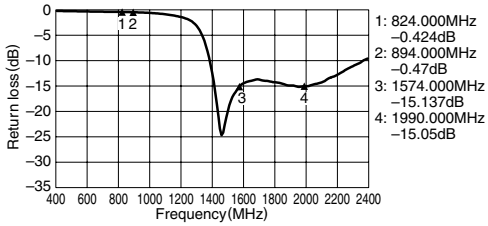
ISORATION S23



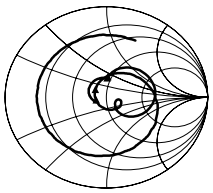
Lo-BAND PORT RETURN LOSS S22



Hi-PORT RETURN LOSS S33



SMITH CHART



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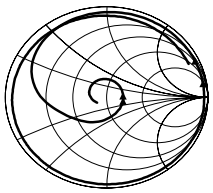

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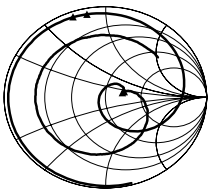

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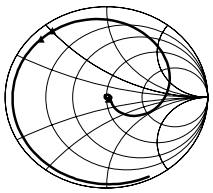

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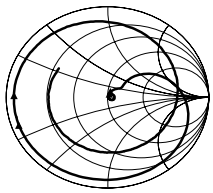

S31

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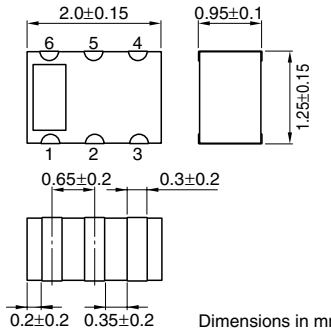
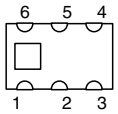
Multilayer Diplexers, DPX Series

DPX202170DT-4021A1

SHAPES AND DIMENSIONS/CIRCUIT



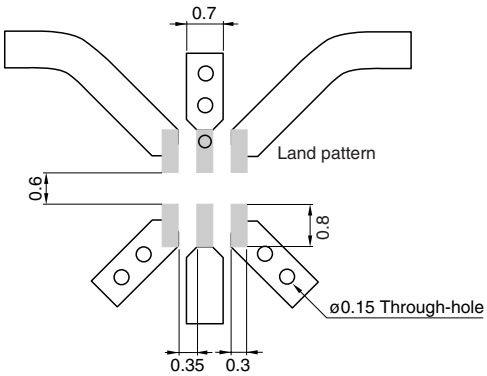
Dimensions in mm



TERMINAL FUNCTIONS

1	GND
2	ANT
3	GND
4	HIGH
5	GND
6	LOW

RECOMMENDED PCB PATTERN



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

Dimensions in mm

ELECTRICAL CHARACTERISTICS

Item	Port	Frequency range		Minimum value	Typical value	Maximum value
Insertion loss	Lo-band	830 to 885MHz	(dB)	—	—	0.5
	Hi-band	1920 to 2170MHz	(dB)	—	—	0.5
Return loss	ANT	830 to 885ÂA1920 to 2170MHz	(dB)	10.0	—	—
Attenuation	Hi-band	830 to 885MHz	(dB)	20.0	—	—
	Lo-band	1920 to 2170MHz	(dB)	20.0	—	—
Temperature range		Operating	(°C)	–40	—	+85°C
		Storage	(°C)	–40	—	+85°C

• Ta:+25°C

• All specifications are subject to change without notice.

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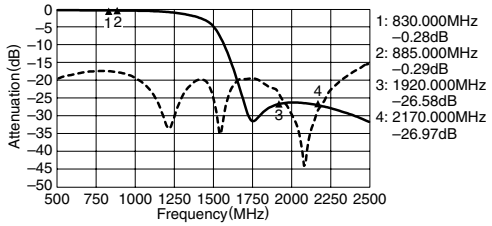
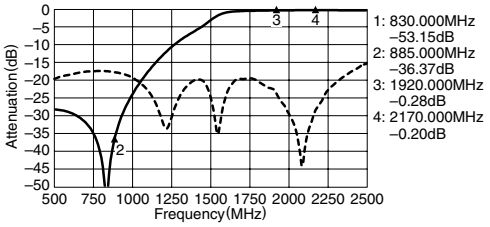
FREQUENCY CHARACTERISTICS

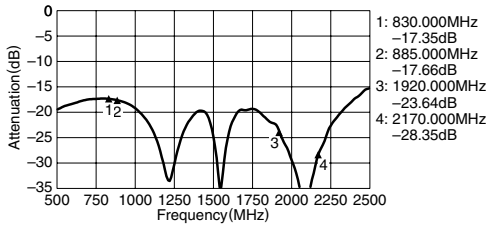
Lo-BAND PORT S21



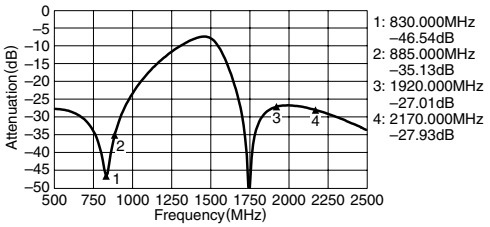
Hi-BAND PORT S31



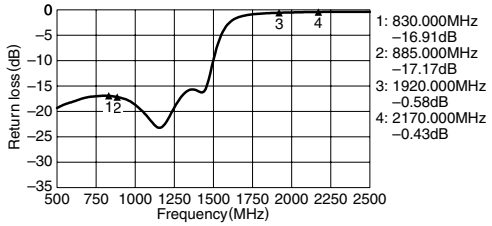
COMMON PORT RETURN LOSS S11



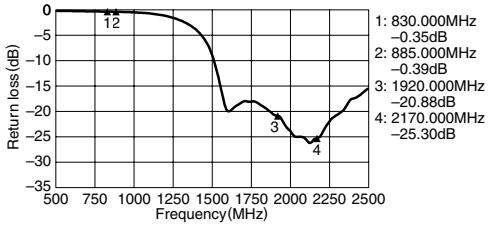
ISORATION S23



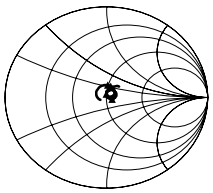
Lo-BAND PORT RETURN LOSS S22



Hi-PORT RETURN LOSS S33



SMITH CHART



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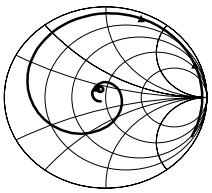

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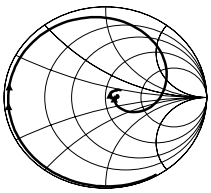

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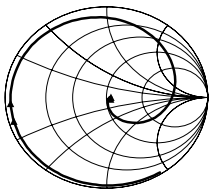

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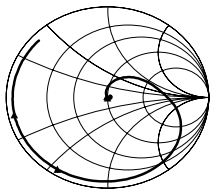

S31

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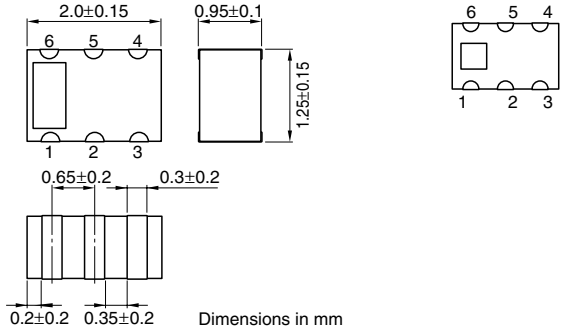
Multilayer Diplexers, DPX Series

DPX205950DT-9008A1

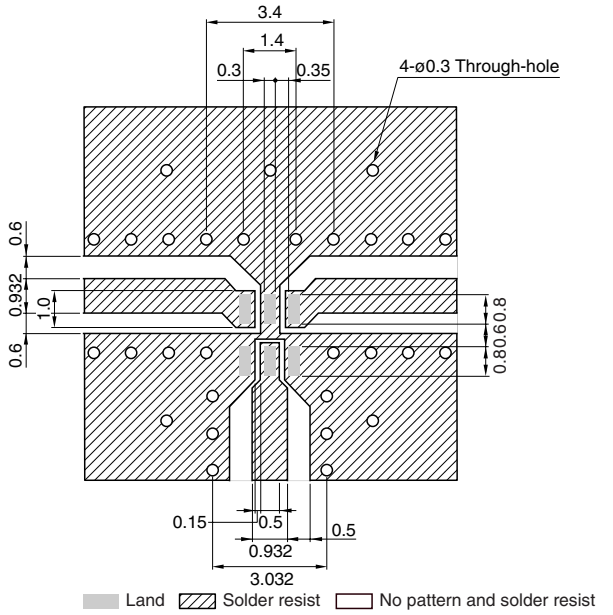
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

1	GND
2	ANT (COMMON)
3	GND
4	HIGH (5.0GHz)
5	GND
6	LOW (2.4GHz)

RECOMMENDED PCB PATTERN



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

Dimensions in mm

ELECTRICAL CHARACTERISTICS

Item	Port		Frequency range		Minimum value	Typical value	Maximum value
Insertion loss	ANT-LOW	[25±5°C]	2300 to 2500MHz	(dB)	—	0.45	0.65
		[–40 to +85°C]	2300 to 2500MHz	(dB)	—	—	0.8
	ANT-HIGH	[25±5°C]	4900 to 5950MHz	(dB)	—	0.90	1.4
		[–40 to +85°C]	4900 to 5950MHz	(dB)	—	—	1.6
Attenuation	ANT-LOW		4600 to 5000MHz	(dB)	20	23	—
			6900 to 7500MHz	(dB)	20	26	—
	ANT-HIGH		2300 to 2500MHz	(dB)	20	24	—
			9800 to 11900MHz	(dB)	13	20	—
Return loss	ANT		2300 to 2500MHz	(dB)	10	20	—
	ANT		4900 to 5950MHz	(dB)	9	11	—
	LOW		2400 to 2500MHz	(dB)	10	20	—
	HIGH		4900 to 5950MHz	(dB)	9	11	—
Temperature range			Operating	(°C)	–40	—	+85°C
			Storage	(°C)	–40	—	+85°C

• Ta:+25°C

• All specifications are subject to change without notice.

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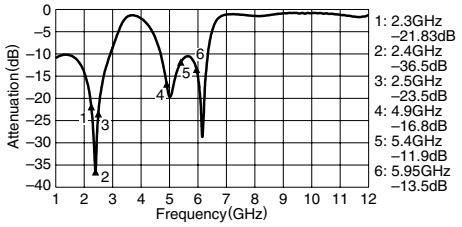
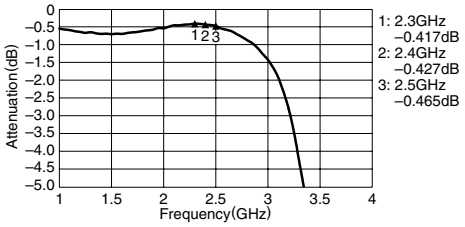
FREQUENCY CHARACTERISTICS

ANT-LOW S11



S21



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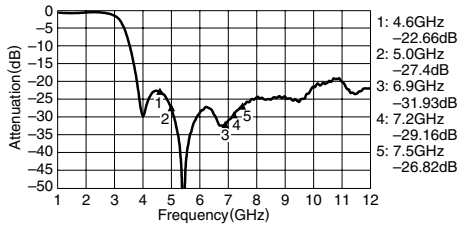
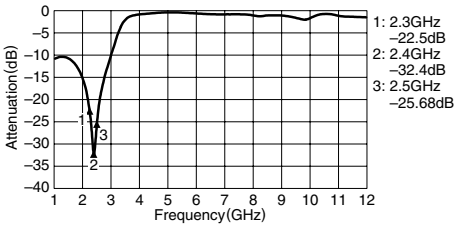
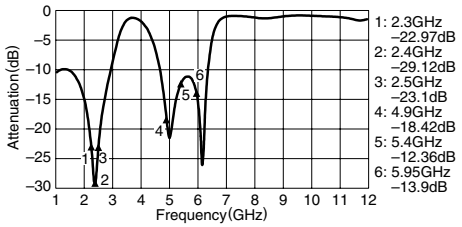


S22



ANT-HIGH S11



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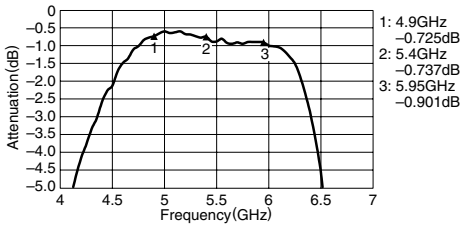

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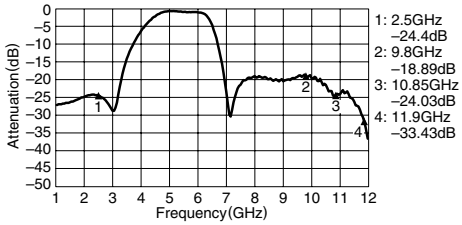

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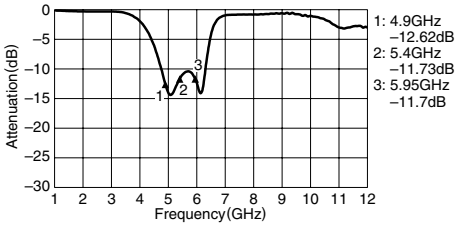

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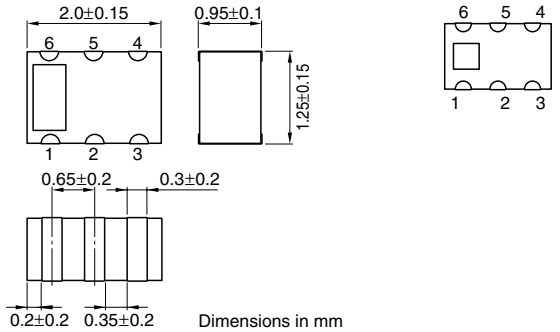
Multilayer Diplexers, DPX Series

DPX205950DT-9108A1

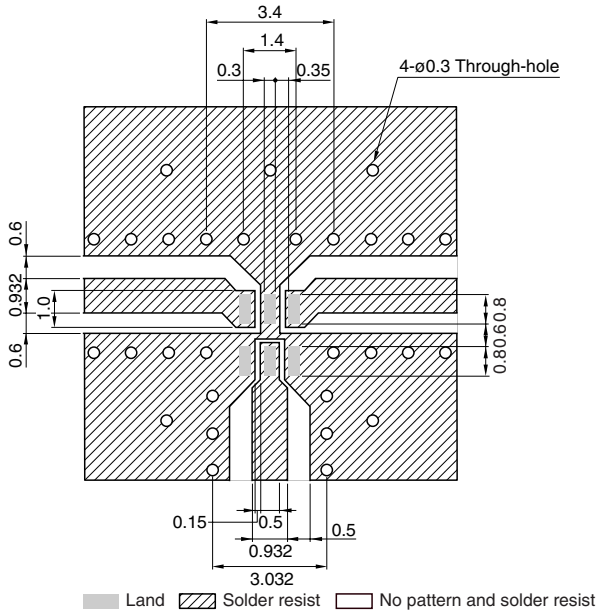
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

1	GND
2	ANT (COMMON)
3	GND
4	LOW (2.4GHz)
5	GND
6	HIGH (5.0GHz)

RECOMMENDED PCB PATTERN



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

Dimensions in mm

ELECTRICAL CHARACTERISTICS

Item	Port		Frequency range		Minimum value	Typical value	Maximum value
Insertion loss	ANT-LOW	[25±5°C]	2300 to 2500MHz	(dB)	—	0.45	0.65
		[–40 to +85°C]	2300 to 2500MHz	(dB)	—	—	0.8
	ANT-HIGH	[25±5°C]	4900 to 5950MHz	(dB)	—	0.90	1.4
		[–40 to +85°C]	4900 to 5950MHz	(dB)	—	—	1.6
Attenuation	ANT-LOW		4600 to 5000MHz	(dB)	20	23	—
			6900 to 7500MHz	(dB)	20	26	—
	ANT-HIGH		2300 to 2500MHz	(dB)	20	24	—
			9800 to 11900MHz	(dB)	13	24	—
Return loss	ANT		2300 to 2500MHz	(dB)	10	20	—
	ANT		4900 to 5950MHz	(dB)	9	12	—
	LOW		2400 to 2500MHz	(dB)	10	20	—
	HIGH		4900 to 5950MHz	(dB)	9	11	—
Temperature range			Operating	(°C)	–40	—	+85°C
			Storage	(°C)	–40	—	+85°C

• Ta:+25°C

• All specifications are subject to change without notice.

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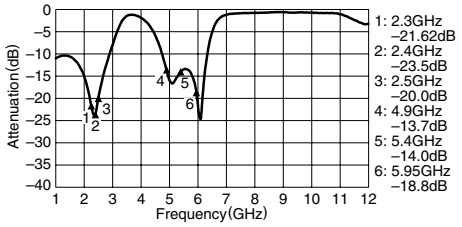
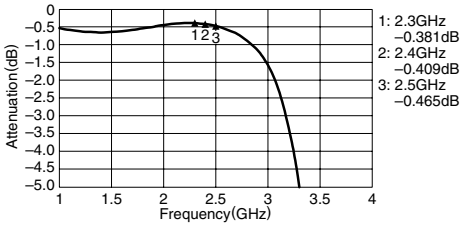
FREQUENCY CHARACTERISTICS

ANT-LOW S11



S21



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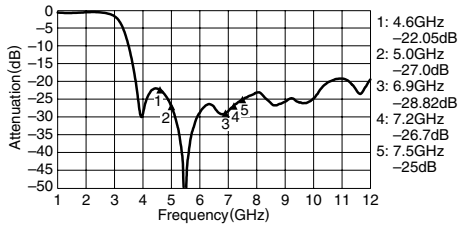
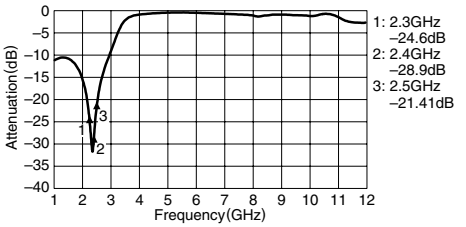
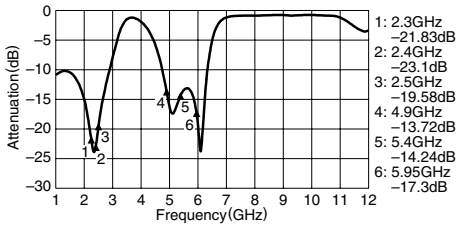


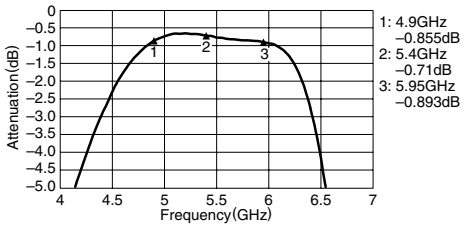
S22



ANT-HIGH S11



S21



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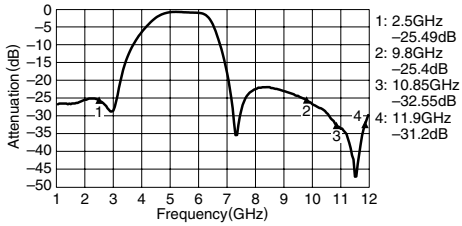

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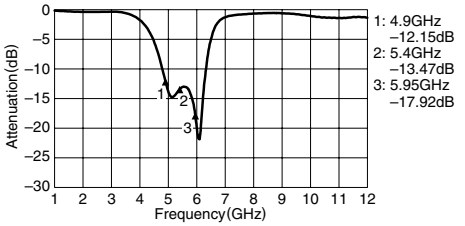

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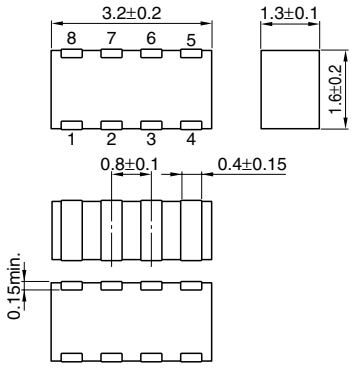
Multilayer Diplexers, DPX Series

DPX315950DT-5005B2 For 2.4/5GHz W-LAN

SHAPES AND DIMENSIONS

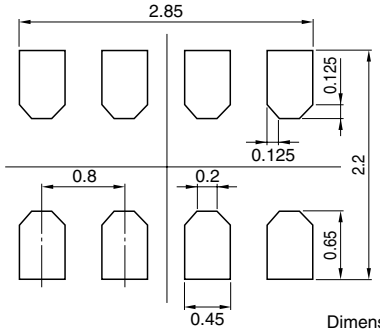


Dimensions in mm

TERMINAL FUNCTIONS

1	HIGH (5.0GHz)
2	GND
3	GND
4	LOW (2.4GHz)
5	GND
6	ANT (COMMON)
7	GND
8	GND

RECOMMENDED PCB PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Item	Port		Frequency range		Minimum value	Typical value	Maximum value
Insertion loss	ANT-LOW	[25±5°C]	2300 to 2500MHz	(dB)	—	0.55	0.7
		[–40 to +85°C]	2300 to 2500MHz	(dB)	—	—	0.85
	ANT-HIGH	[25±5°C]	4900 to 5950MHz	(dB)	—	0.8	1.0
		[–40 to +85°C]	4900 to 5950MHz	(dB)	—	—	1.2
Attenuation	ANT-LOW		3950MHz	(dB)	18	24	—
			4600 to 5000MHz	(dB)	25	29	—
			5000 to 5950MHz	(dB)	25	29	—
			6500 to 7500MHz	(dB)	18	25	—
	ANT-HIGH		1300 to 1800MHz	(dB)	35	40	—
			1800 to 2000MHz	(dB)	37	42	—
			2100 to 2300MHz	(dB)	36	41	—
			2300 to 2500MHz	(dB)	30	38	—
			2500 to 3500MHz	(dB)	11	13.5	—
			3500 to 3950MHz	(dB)	4	7	—
			9800 to 10700MHz	(dB)	15	24	—
			10700 to 11700MHz	(dB)	10	22	—
			11700 to 11900MHz	(dB)	8	20	—
Return loss	ANT		2300 to 2500MHz	(dB)	10	15	—
	ANT		4900 to 5950MHz	(dB)	9	13	—
	LOW		2300 to 2500MHz	(dB)	10	15	—
	HIGH		4900 to 5950MHz	(dB)	9	13	—
Temperature range			Operating	(°C)	–40	—	+85
			Storage	(°C)	–40	—	+85

• All specifications are subject to change without notice.

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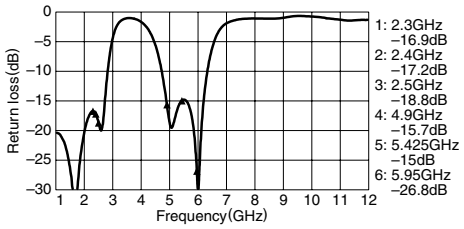
FREQUENCY CHARACTERISTICS

ANT-LOW

S11



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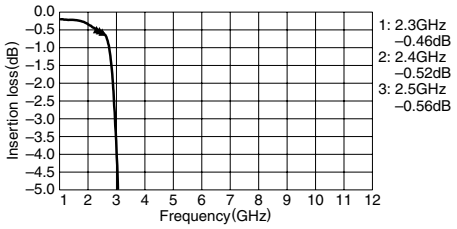

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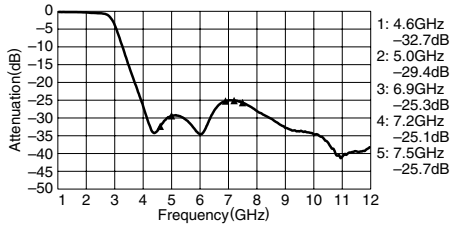

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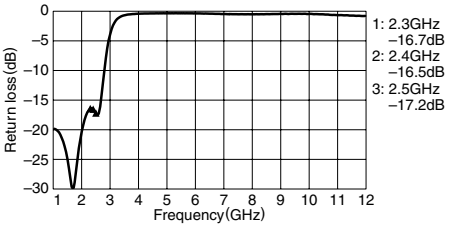
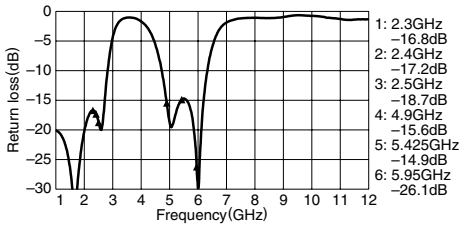


ANT-HIGH

S11



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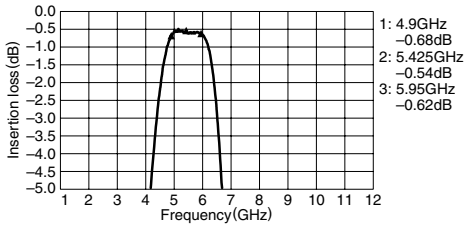

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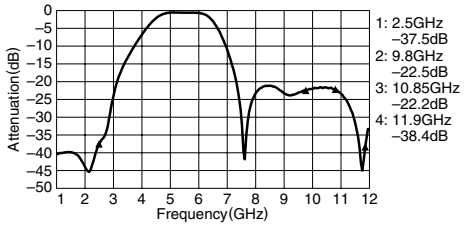

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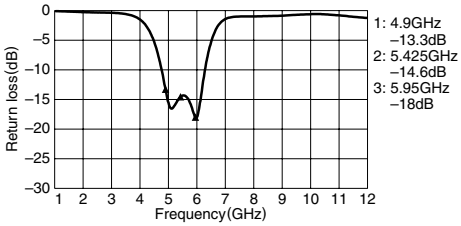

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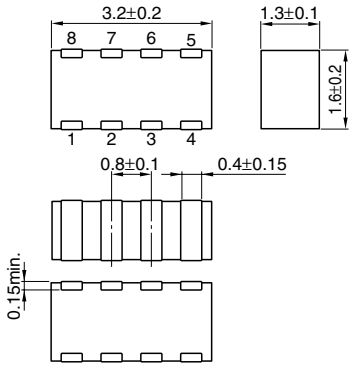
Multilayer Diplexers, DPX Series

DPX315950DT-5006C1 For 2.4/5GHz W-LAN

SHAPES AND DIMENSIONS

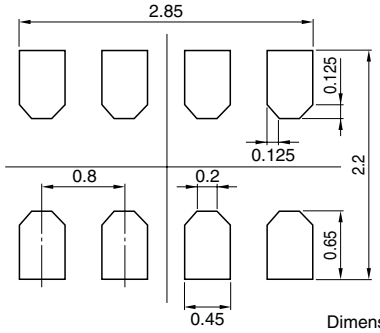


Dimensions in mm

TERMINAL FUNCTIONS

1	LOW (2.4GHz)
2	GND
3	GND
4	HIGH (5.0GHz)
5	GND
6	GND
7	ANT (COMMON)
8	GND

RECOMMENDED PCB PATTERN



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Item	Port		Frequency range		Minimum value	Typical value	Maximum value
Insertion loss	ANT-LOW	[25±5°C]	2400 to 2500MHz	(dB)	—	1.0	1.5
	ANT-HIGH	[25±5°C]	5000 to 5950MHz	(dB)	—	0.8	1.2
Attenuation	ANT-LOW		DC to 1500MHz	(dB)	25	30	—
			4800 to 5950MHz	(dB)	21	25	—
			6500 to 7500MHz	(dB)	10	16	—
	ANT-HIGH		DC to 1500MHz	(dB)	40	48	—
			1500 to 2000MHz	(dB)	30	48	—
			2500 to 3850MHz	(dB)	21	26	—
			3850 to 3883MHz	(dB)	19.5	25	—
			6500MHz	(dB)	—	1.2	—
			7200 to 7700MHz	(dB)	3	4.8	—
			9000 to 10000MHz	(dB)	13	16	—
Return loss	ANT-LOW		2400 to 2500MHz	(dB)	10	—	—
	ANT-HIGH		5000 to 5950MHz	(dB)	9	—	—
Temperature range			Operating	(°C)	–40	—	+85
			Storage	(°C)	–40	—	+85

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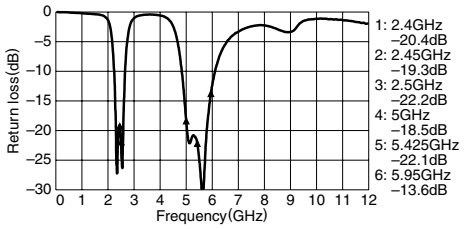
FREQUENCY CHARACTERISTICS

ANT-LOW

S11



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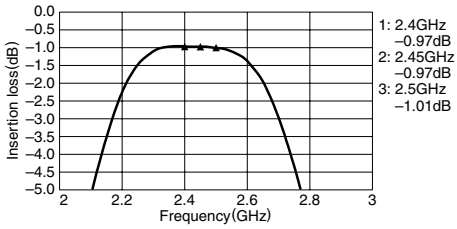

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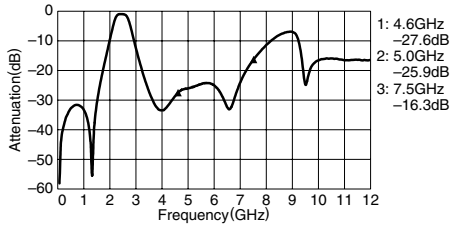

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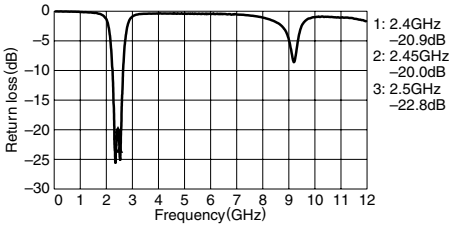

ANT-HIGH

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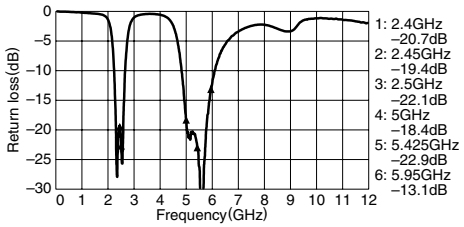

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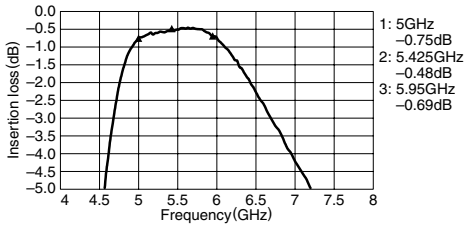

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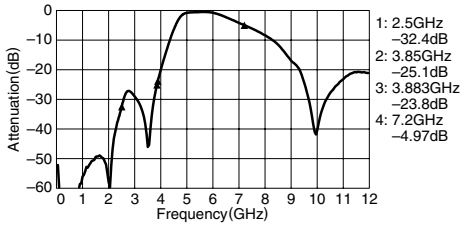

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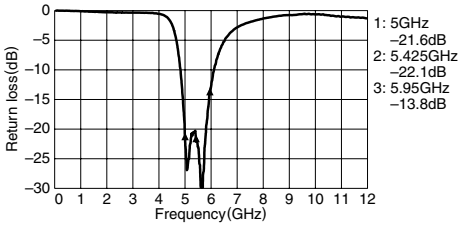

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