

Multilayer Band Pass Filters

For 2.4GHz W-LAN/Bluetooth

DEA Series

Type: **DEA202450BT-1261A2 (2.0×1.25×0.55mm)**
 DEA202441BT-2106A2 (2.0×1.25×0.7mm max.)
 DEA202450BT-3201B2 (2.0×1.25×0.8mm max.)
 DEA202450BT-1213C1 (2.0×1.25×0.95mm)
 DEA202450BT-1275A1 (2.0×1.25×0.95mm)
 DEA202450BT-2038A1 (2.0×1.25×0.95mm)
 DEA202450BT-1283A2 (2.0×1.25×1.05mm max.)

Issue date: December 2010

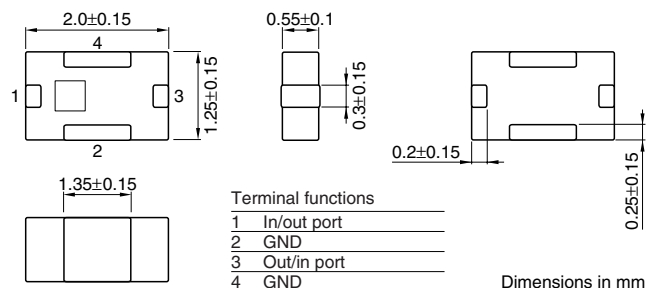
- All specifications are subject to change without notice.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

Multilayer Chip Band Pass Filters For Bluetooth & 2.4GHz W-LAN

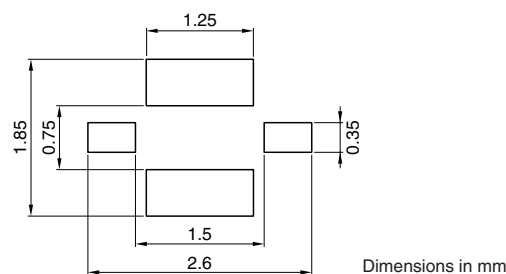
Conformity to RoHS Directive

DEA Series DEA202450BT-1261A2

SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS



ELECTRICAL CHARACTERISTICS

Item			Minimum value	Typical value	Maximum value
Insertion loss	[2400 to 2500MHz]	(dB)	—	—	2.8
Return loss	[2400 to 2500MHz]	(dB)	9.5	—	—
Attenuation	[695 to 800MHz]	(dB)	25	—	—
	[1910MHz]	(dB)	25	—	—
	[3200MHz]	(dB)	35	—	—
	[4800 to 5000MHz]	(dB)	20	—	—
	[7200 to 7500MHz]	(dB)	20	—	—
Impedance of in/output port	[2400 to 2500MHz]	(Ω)	—	50	—
Temperature range	Operating	($^{\circ}$ C)	-30	—	+80
	Storage	($^{\circ}$ C)	-30	—	+80

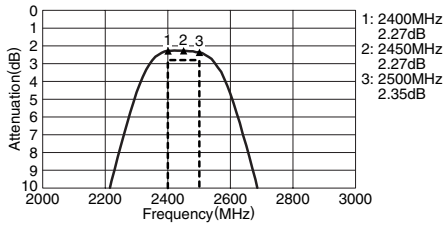
• Ta: +25 $^{\circ}$ C

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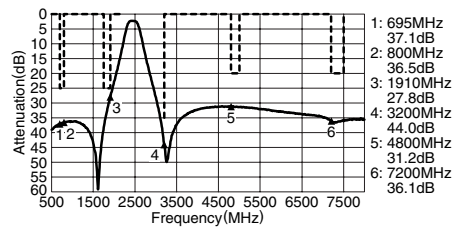
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FREQUENCY CHARACTERISTICS

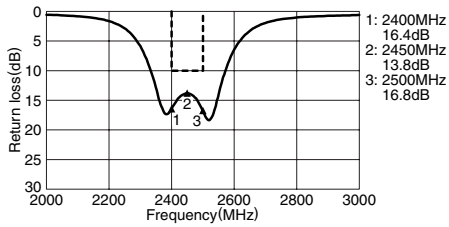
INSERTION LOSS



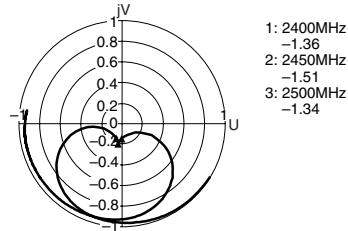
ATTENUATION



RETURN LOSS



VSWR



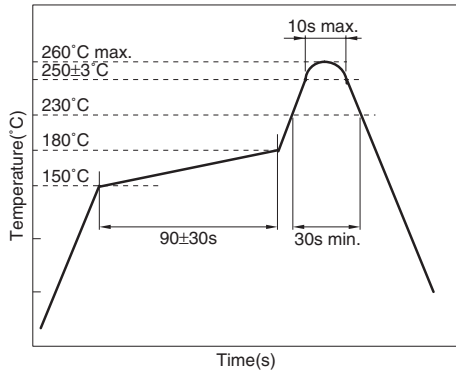
SOLDERING

- Please solder by IR reflow with the following profiles.
- Moreover, please use neither spot heater nor the soldering iron to.

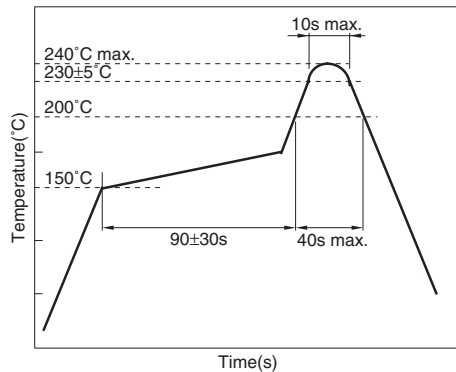
RECOMMENDED SOLDERING CONDITION

REFLOW SOLDERING

A. When using Pb free solder



B. When using Sn-Pb eutectic solder



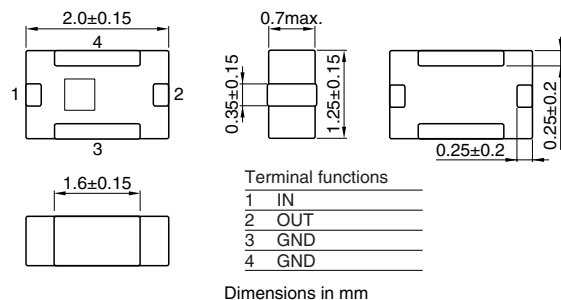
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Multilayer Chip Band Pass Filters For Bluetooth & 2.4GHz W-LAN

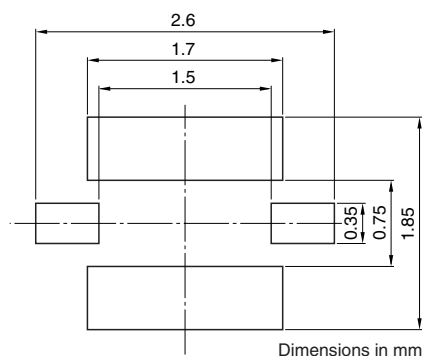
Conformity to RoHS Directive

DEA Series DEA202441BT-2106A2

SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS



ELECTRICAL CHARACTERISTICS

Item			Minimum value	Typical value	Maximum value
RF input power	[2400 to 2483.5MHz]	(dBm)	—	—	24
Insertion loss	[2400 to 2483.5MHz]	(dB)	—	2.7	3.6
Single ended output port characteristic impedance	[2400 to 2483.5MHz]	(Ω)	50[Nominal]		
Single ended input port impedance	[2441MHz]	(Ω)	50[Nominal]		
Input VSWR	[2400 to 2483.5MHz]		—	1.3	1.9
Output VSWR	[2400 to 2483.5MHz]		—	1.3	1.9
Pass band ripple	[2400 to 2483.5MHz]	(dB)	—	0.7	1.1
Attenuation	[DC to 746MHz]	(dB)	30	43	—
	[746 to 764MHz]	(dB)	30	43	—
	[776 to 794MHz]	(dB)	30	42	—
	[824 to 849MHz]	(dB)	30	42	—
	[869 to 894MHz]	(dB)	30	40	—
	[894 to 915MHz]	(dB)	30	40	—
	[925 to 960MHz]	(dB)	30	40	—
	[1570 to 1580MHz]	(dB)	28	37	—
	[1710 to 1785MHz]	(dB)	33	37	—
	[1805 to 1850MHz]	(dB)	33	38	—
	[1850 to 1910MHz]	(dB)	33	38	—
	[1920 to 1980MHz]	(dB)	34	40	—
	[2110 to 2170MHz]	(dB)	28	33	—
	[4000 to 4800MHz]	(dB)	20	33	—
[4800 to 4967MHz]	(dB)	29	33	—	
[4967 to 7200MHz]	(dB)	20	34	—	
[7200 to 7451MHz]	(dB)	22	44	—	
[7451 to 8000MHz]	(dB)	10	17	—	
Temperature range	Operating	($^{\circ}$ C)	-40	—	+85
	Storage	($^{\circ}$ C)	-40	—	+85

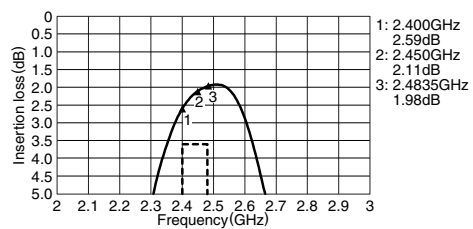
• Ta:+25 $^{\circ}$ C

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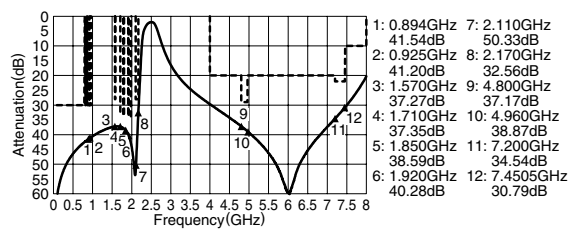
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FREQUENCY CHARACTERISTICS

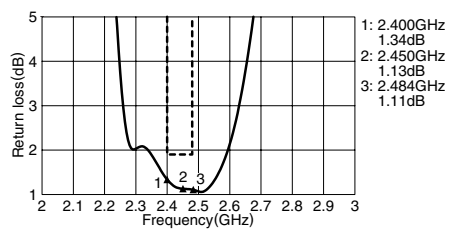
INSERTION LOSS



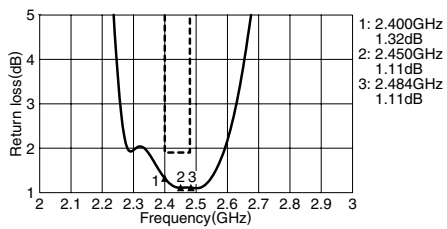
ATTENUATION



S11 VSWR



S22 VSWR



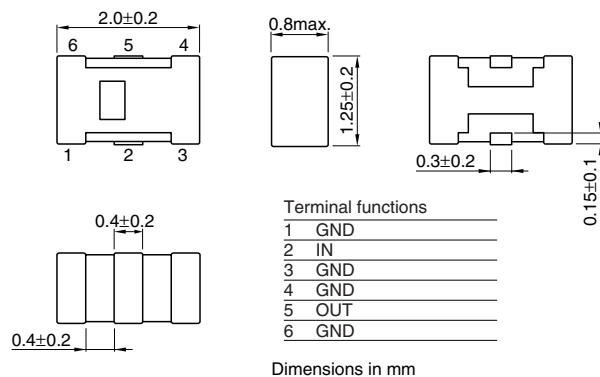
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Multilayer Chip Band Pass Filters For Bluetooth & 2.4GHz W-LAN

Conformity to RoHS Directive

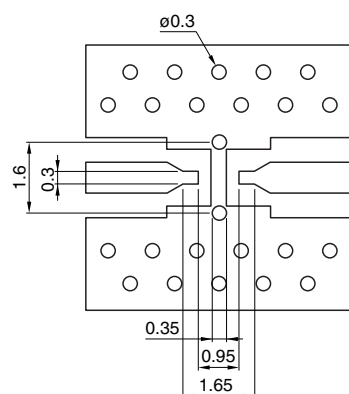
DEA Series DEA202450BT-3201B2

SHAPES AND DIMENSIONS



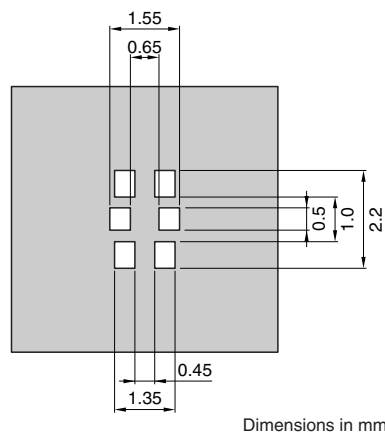
RECOMMENDED PC BOARD PATTERNS

LAND



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

SOLDER RESIST



ELECTRICAL CHARACTERISTICS

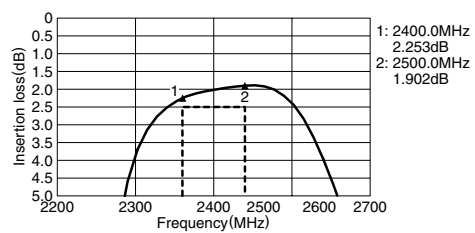
Frequency range(Pass band)		2400 to 2500MHz
Insertion loss	[+25°C]	2.5dB max.
Return loss	[2400 to 2500MHz]	10dB min.
	[880 to 915MHz]	40dB min.
	[1710 to 1850MHz]	40dB min.
	[1850 to 1910MHz]	40dB min.
	[1920 to 1990MHz]	40dB min.
	[2110 to 2170MHz]	26dB min.
Attenuation	[4800 to 5000MHz]	30dB min.
	[7200 to 7500MHz]	30dB min.
Temperature range	Operating	-40 to +85°C
	Storage	-40 to +85°C

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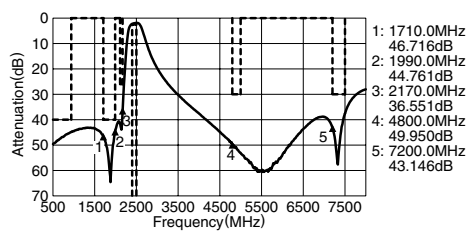
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FREQUENCY CHARACTERISTICS

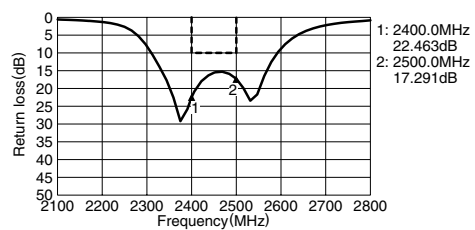
INSERTION LOSS



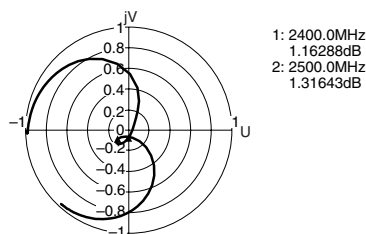
ATTENUATION



RETURN LOSS



VSWR



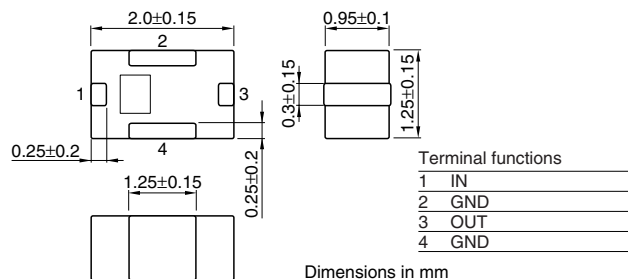
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Multilayer Chip Band Pass Filters For Bluetooth & 2.4GHz W-LAN

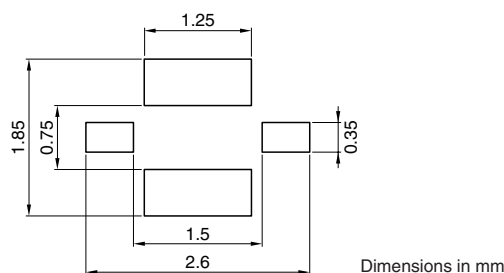
Conformity to RoHS Directive

DEA Series DEA202450BT-1213C1

SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS

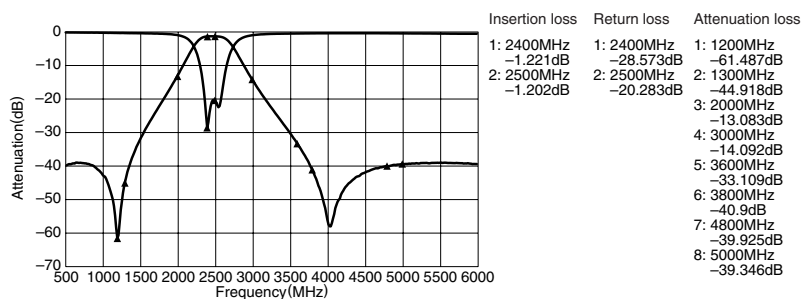


ELECTRICAL CHARACTERISTICS

Item		Minimum value	Typical value	Maximum value
Insertion loss	[2400 to 2500MHz]	(dB)	—	1.5
Return loss	[2400 to 2500MHz]	(dB)	10	—
Attenuation	[1200 to 1300MHz]	(dB)	25	—
	[2000MHz]	(dB)	10	—
	[3000MHz]	(dB)	12	—
	[3600 to 3800MHz]	(dB)	30	—
Temperature range	Operating	(°C)	—40	+85
	Storage	(°C)	—40	+85

• Ta:+25°C

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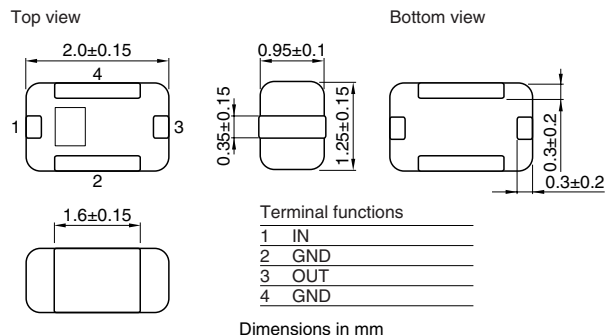
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Multilayer Chip Band Pass Filters For Bluetooth & 2.4GHz W-LAN

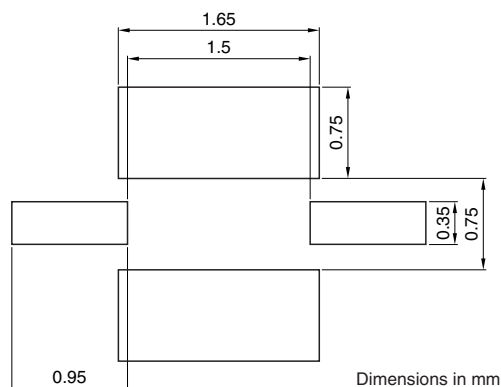
Conformity to RoHS Directive

DEA Series DEA202450BT-1275A1

SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS



ELECTRICAL CHARACTERISTICS

Item				Minimum value	Typical value	Maximum value
Insertion loss	[25°C]	[2400 to 2500MHz]	(dB)	—	—	1.4
	[−40 to +85°C]	[2400 to 2500MHz]	(dB)	—	—	1.6
Ripple		[2400 to 2500MHz]	(dB)	—	—	1.0
Input VSWR		[2400 to 2500MHz]		—	—	2.0
Output VSWR		[2400 to 2500MHz]		—	—	2.0
Attenuation		[824 to 960MHz]	(dB)	30	—	—
		[1710 to 1910MHz]	(dB)	27	—	—
		[1920 to 1990MHz]	(dB)	22	—	—
		[2110 to 2170MHz]	(dB)	6	—	—
		[4800 to 5000MHz]	(dB)	20	—	—
Output/input impedance			(Ω)	—	50	—
Maximum power capacity			(W)	—	0.5	—
Temperature range	Operating		(°C)	−40	—	+85
	Storage		(°C)	−40	—	+85

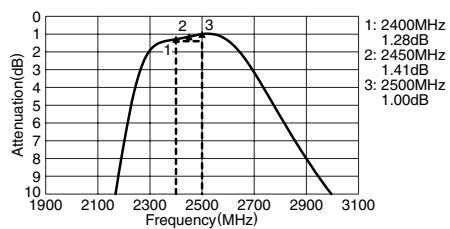
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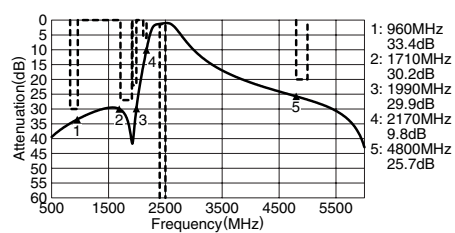
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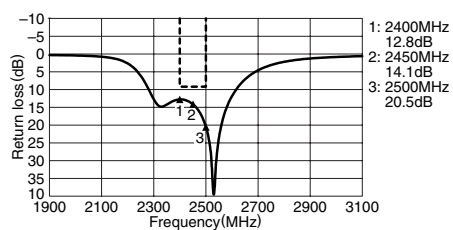
INSERTION LOSS



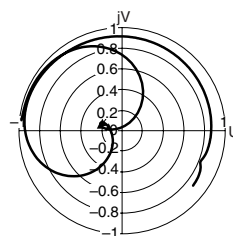
ATTENUATION



RETURN LOSS



VSWR

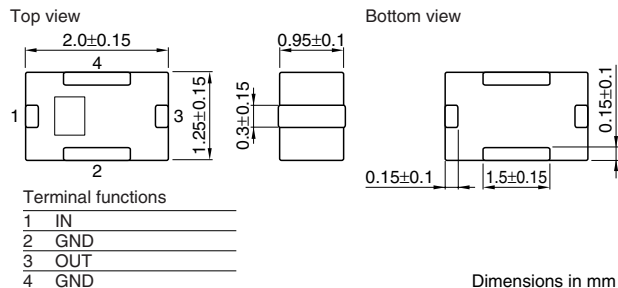


Multilayer Chip Band Pass Filters For Bluetooth & 2.4GHz W-LAN

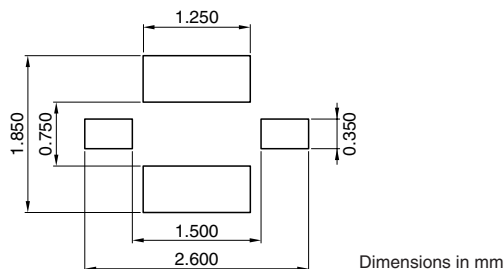
Conformity to RoHS Directive

DEA Series DEA202450BT-2038A1

SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS

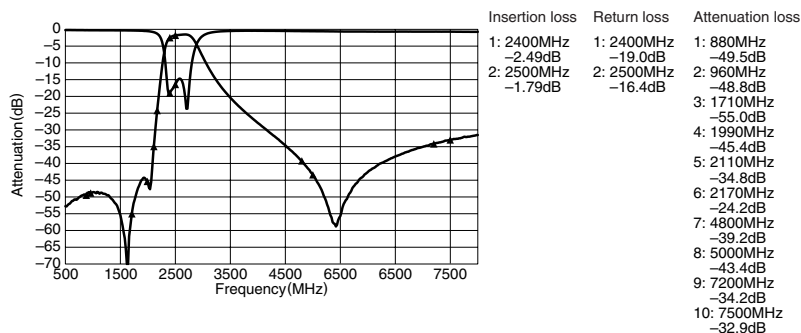


ELECTRICAL CHARACTERISTICS

Item		Minimum value	Typical value	Maximum value
Insertion loss	[2400 to 2500MHz] (dB)	—	—	2.6
Return loss	[2400 to 2500MHz] (dB)	10	—	—
Attenuation	[880 to 960MHz] (dB)	40	—	—
	[1710 to 1990MHz] (dB)	40	—	—
	[2110 to 2170MHz] (dB)	20	—	—
	[4800 to 5000MHz] (dB)	30	—	—
	[7200 to 7500MHz] (dB)	30	—	—
Temperature range	Operating (°C)	-40	—	+85
	Storage (°C)	-40	—	+85

• Ta:+25°C

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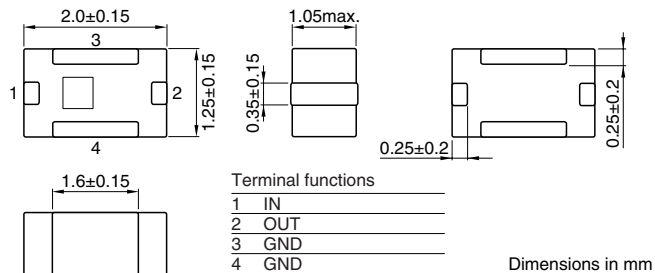
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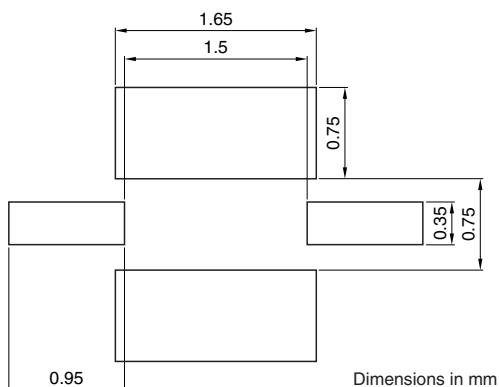
Conformity to RoHS Directive

DEA Series DEA202450BT-1283A2

SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS



ELECTRICAL CHARACTERISTICS

Item		Minimum value	Typical value	Maximum value
Frequency range(Pass band)	(MHz)	2400	—	2500
Insertion loss	[25°C]	(dB)	—	1.04
	[-40 to +85°C]	(dB)	—	1.6
Single ended port characteristic impedance	(Ω)	—	50[Nominal]	—
Attenuation	[1600MHz]	(dB)	22	24.8
	[3200MHz]	(dB)	30	38.3
	[4800 to 5000MHz]	(dB)	20	26.1
Return loss	[2400 to 2500MHz]	(dB)	10	18.4
Temperature range	Operating	(°C)	-40	+85
	Storage	(°C)	-40	+85

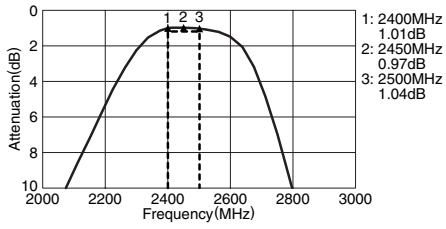
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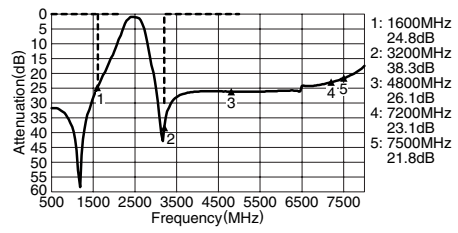
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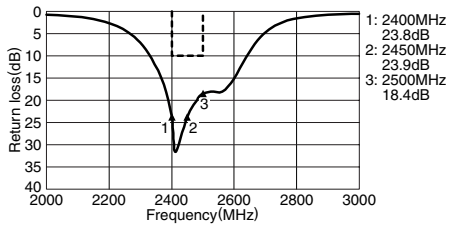
INSERTION LOSS



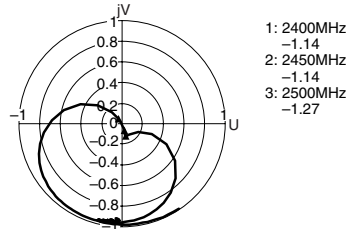
ATTENUATION



RETURN LOSS



VSWR



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