

Ceramic Chip Antennas

For 2.4GHz ISM band

ANT Series

Type: **ANT020012CCS2442MA1 (2.0×1.25×0.5mm)**
 ANT030012CCS2442MA1 (3.0×1.2×1.2mm)
 ANT040015CCS2442MA1 (4.0×1.5×1.85mm)
 ANT098030CGS2442MA1 (9.8×3.0×4.0mm)
 ANT098030CGS2442MB1 (9.8×3.0×4.0mm)

Issue date: March 2011

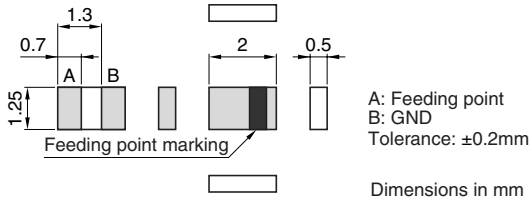
- All specifications are subject to change without notice.
 - Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.
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Ceramic Chip Antennas For 2.4GHz ISM band

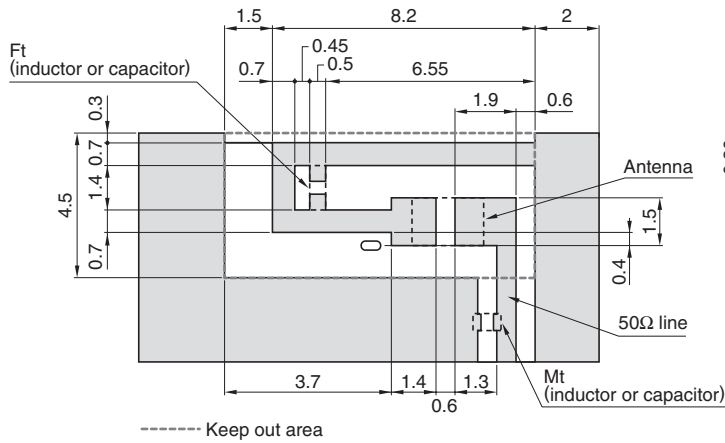
Conformity to RoHS Directive

ANT Series ANT020012CCS2442MA1

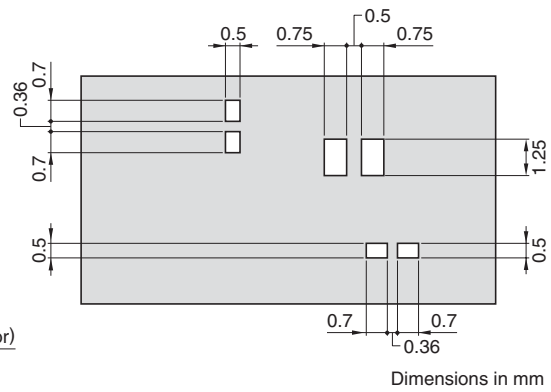
SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS ELECTRODE



SOLDER RESIST

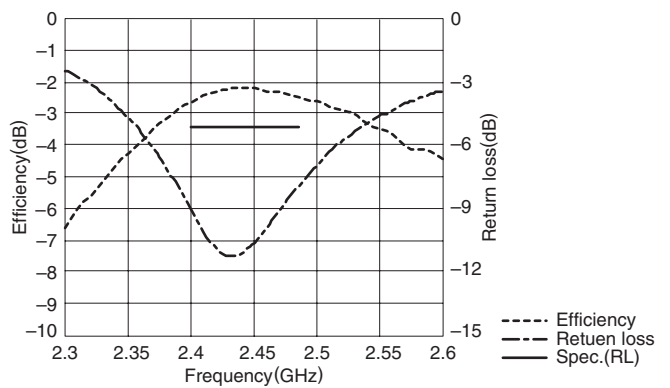


ELECTRICAL CHARACTERISTICS

Center frequency(F_0)	2442MHz
Band width(BW)	$F_0 \pm 42$ MHz
Return loss(at BW)	-5max.
Polarization	Linear
Impedance	50Ω
PCB size	100×40×1.0mm
Temperature range	Operating -40 to +85°C
	Storage -40 to +85°C

• This is typical antenna performance with the standard PCB.

FREQUENCY CHARACTERISTICS EFFICIENCY AND RETURN LOSS



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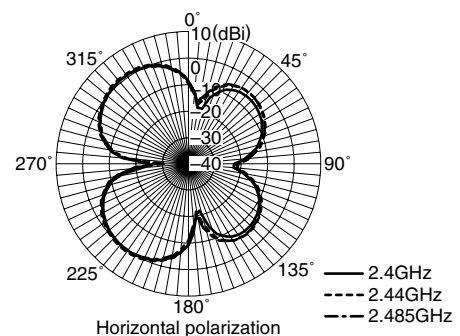
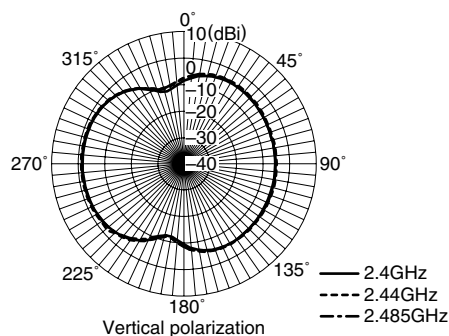
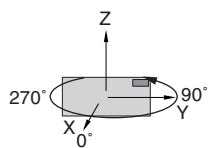
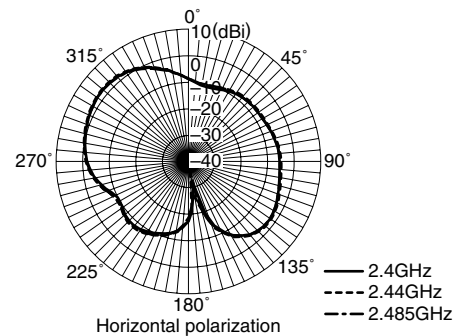
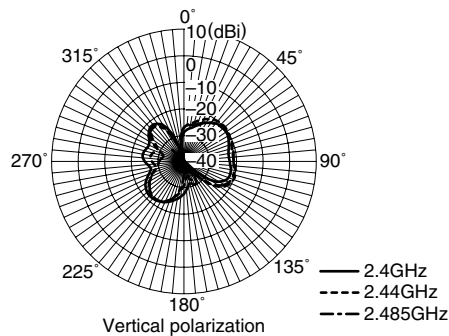
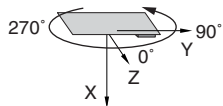
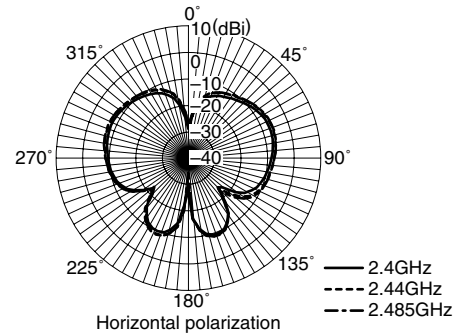
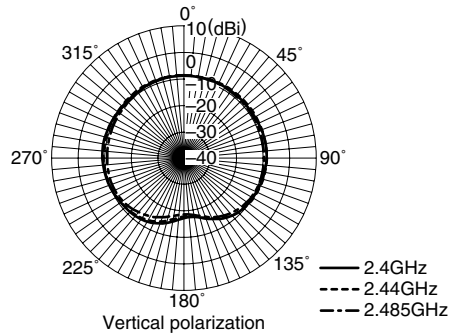
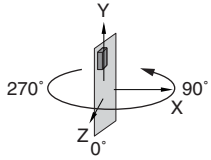
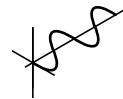
RADIATION PATTERNS ANT020012CCS2442MA1

Directivity angle

Vertical polarization



Horizontal polarization



• Tested antenna has been soldered.

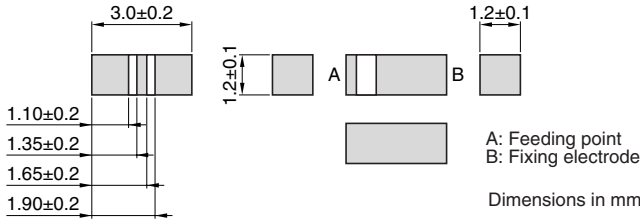
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Ceramic Chip Antennas For 2.4GHz ISM band

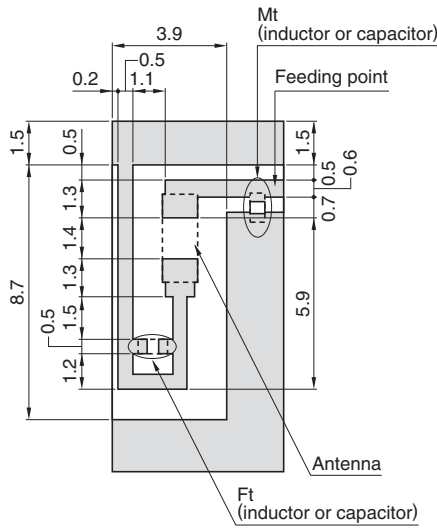
Conformity to RoHS Directive

ANT Series ANT030012CCS2442MA1

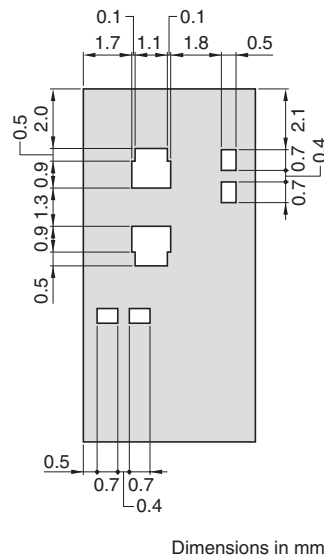
SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS ELECTRODE



SOLDER RESIST



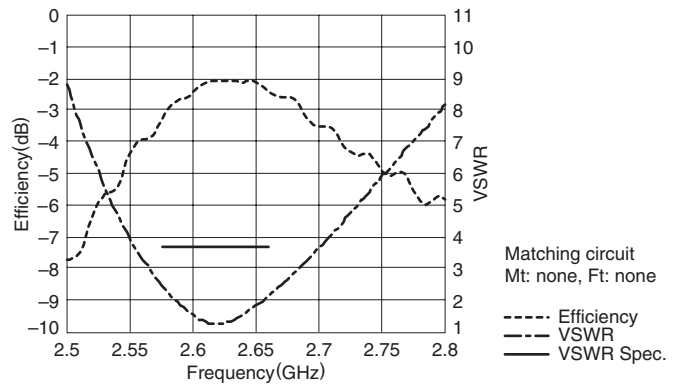
ELECTRICAL CHARACTERISTICS

Center frequency(F_0)	2618MHz
Band width(BW)	$F_0 \pm 42$ MHz
VSWR(at BW)	3.7max.
Polarization	Linear
Impedance	50 Ω
PCB size	80×37×1.0mm
Temperature range	Operating -40 to +85°C Storage -40 to +85°C

• This is typical antenna performance with the standard PCB.

FREQUENCY CHARACTERISTICS

EFFICIENCY AND VSWR



• 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.

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RADIATION PATTERNS

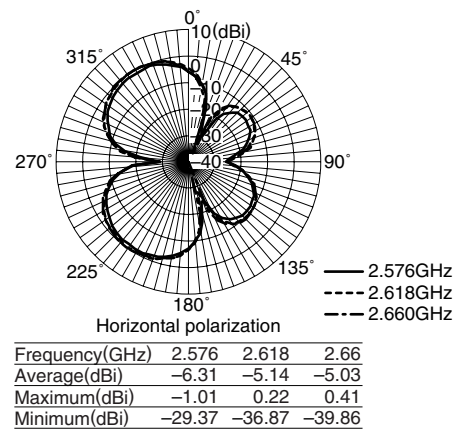
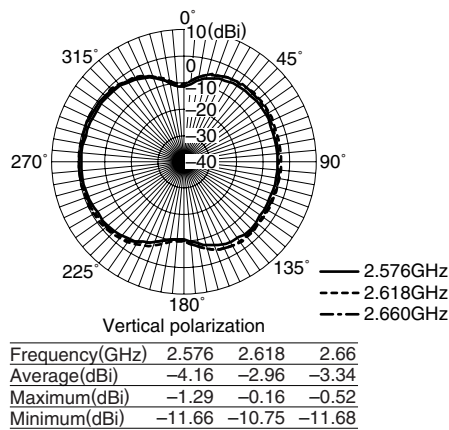
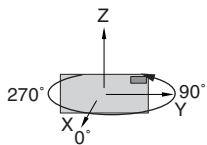
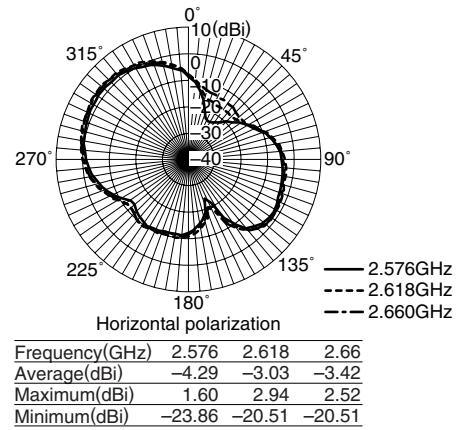
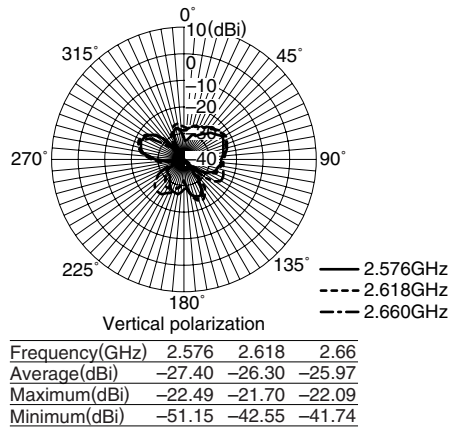
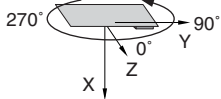
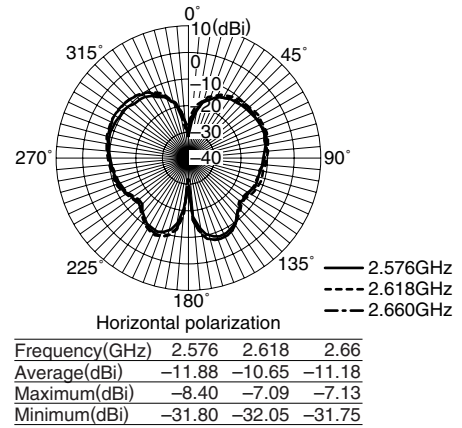
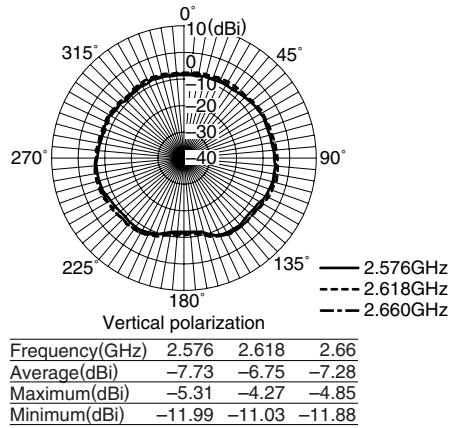
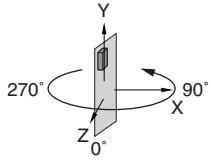
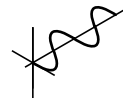
ANT030012CCS2442MA1

Directivity angle

Vertical polarization



Horizontal polarization



• Tested antenna has been soldered.

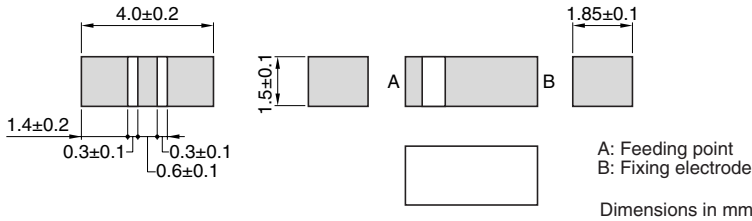
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Ceramic Chip Antennas For 2.4GHz ISM band

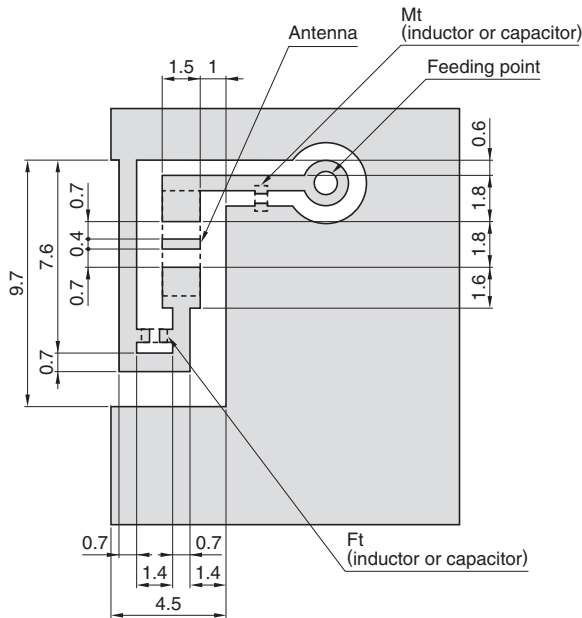
Conformity to RoHS Directive

ANT Series ANT040015CCS2442MA1

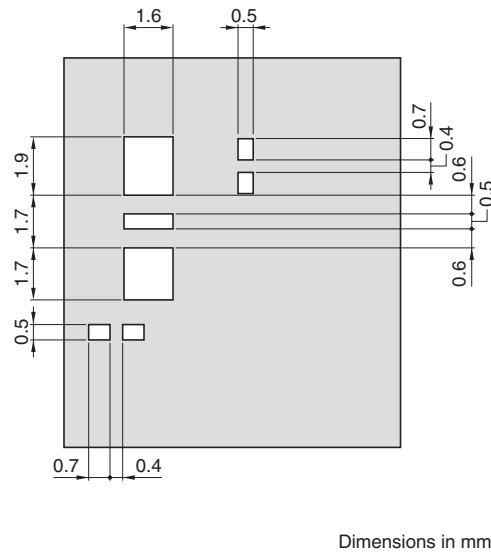
SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS ELECTRODE



SOLDER RESIST



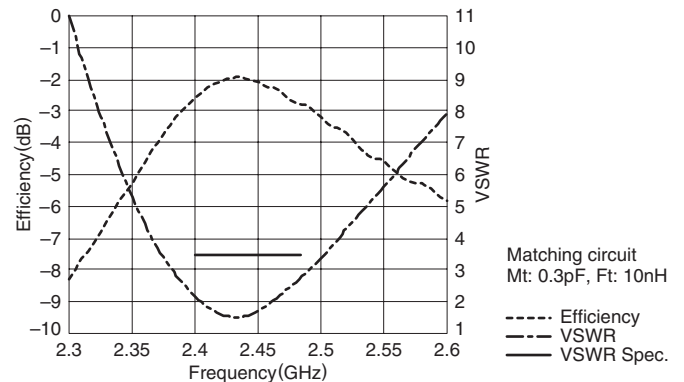
ELECTRICAL CHARACTERISTICS

Center frequency(F_0)	2442MHz
Band width(BW)	$F_0 \pm 42$ MHz
VSWR(at BW)	3.5max.
Polarization	Linear
Impedance	50Ω
PCB size	$80 \times 37 \times 1.0$ mm
Temperature range	Operating: -40 to $+85^\circ\text{C}$ Storage: -40 to $+85^\circ\text{C}$

• This is typical antenna performance with the standard PCB.

FREQUENCY CHARACTERISTICS

EFFICIENCY AND VSWR



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RADIATION PATTERNS

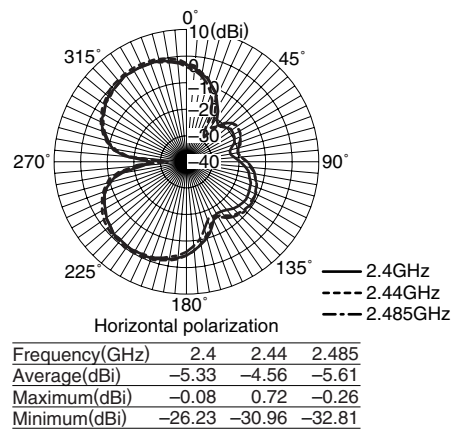
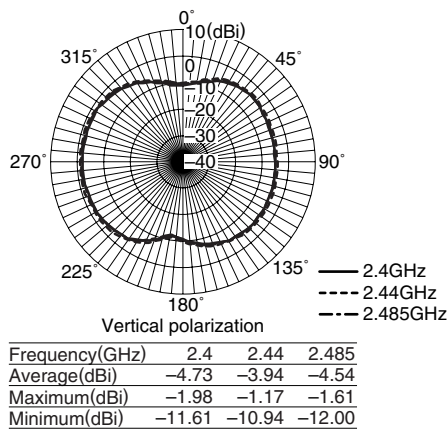
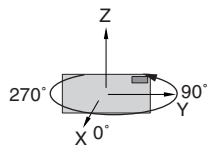
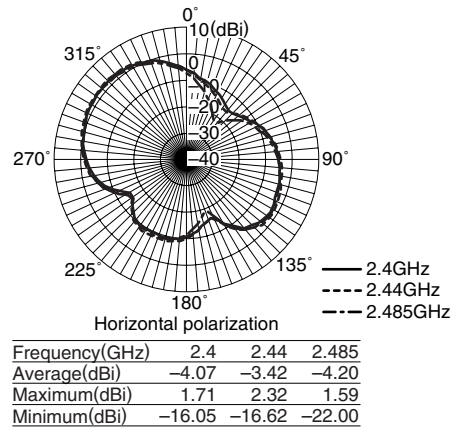
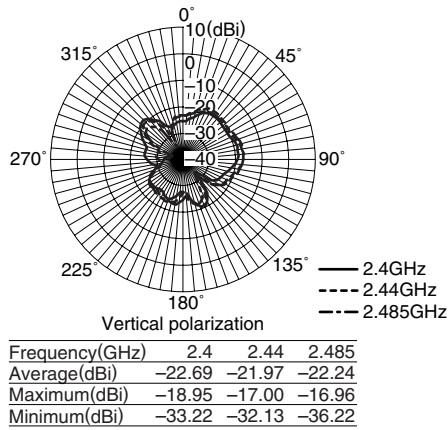
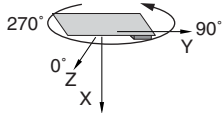
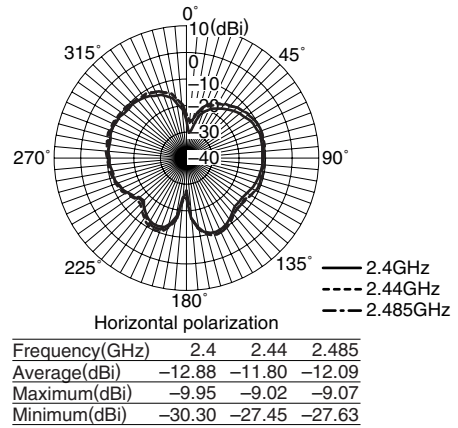
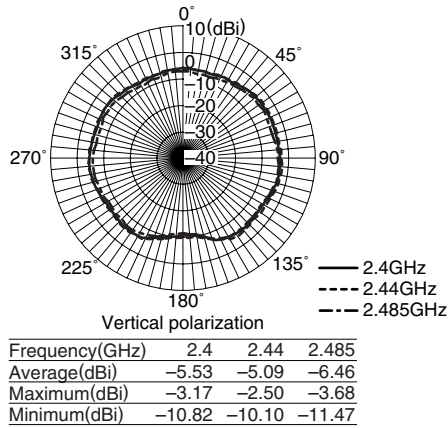
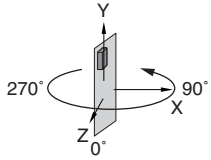
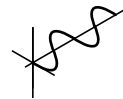
ANT040015CCS2442MA1

Directivity angle

Vertical polarization



Horizontal polarization



• Tested antenna has been soldered.

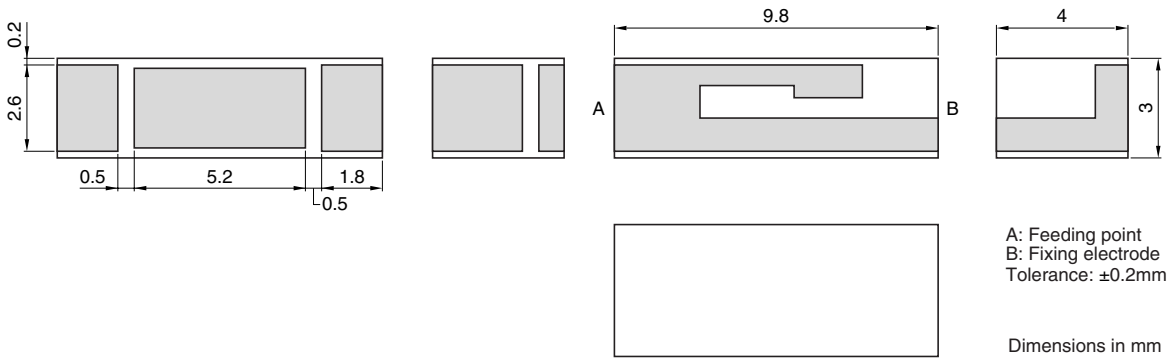
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Ceramic Chip Antennas For 2.4GHz ISM band

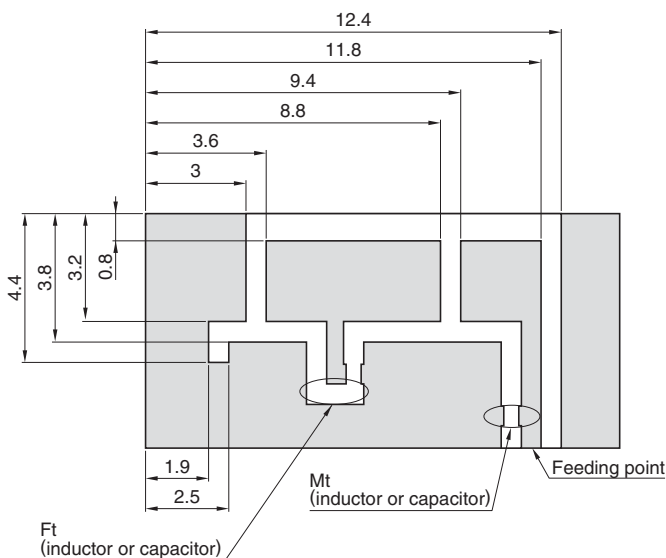
Conformity to RoHS Directive

ANT Series ANT098030CGS2442MA1

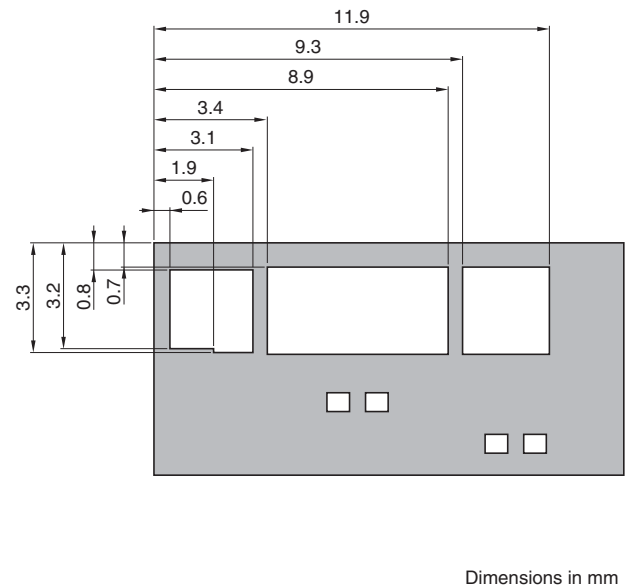
SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS ELECTRODE



SOLDER RESIST



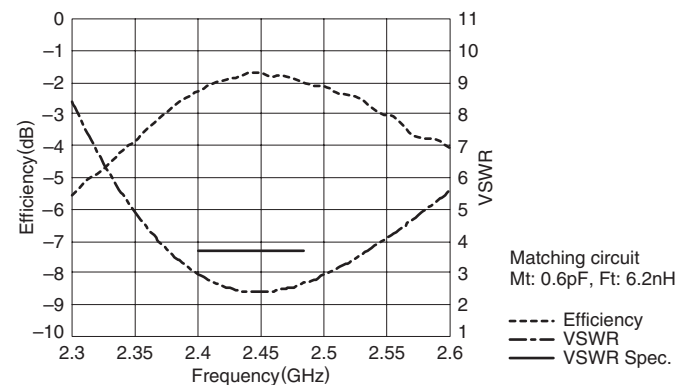
ELECTRICAL CHARACTERISTICS

Center frequency(F_0)	2442MHz	
Band width(BW)	$F_0 \pm 42\text{MHz}$	
VSWR(at BW)	3.7max.	
Polarization	Linear	
Impedance	50Ω	
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Temperature range	Operating	-40 to $+85^\circ\text{C}$
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FREQUENCY CHARACTERISTICS

EFFICIENCY AND VSWR



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RADIATION PATTERNS

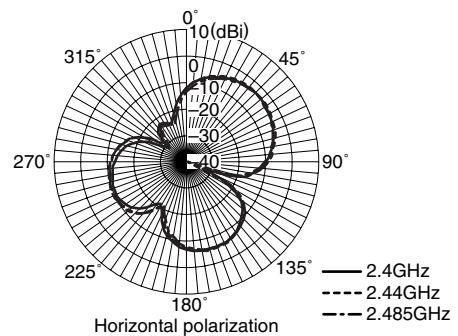
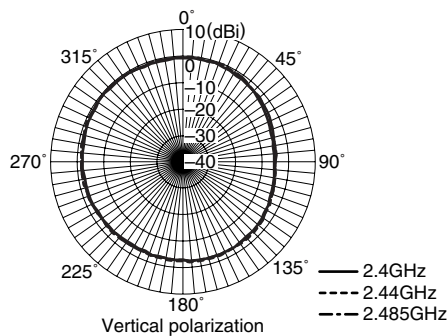
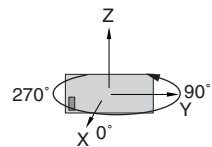
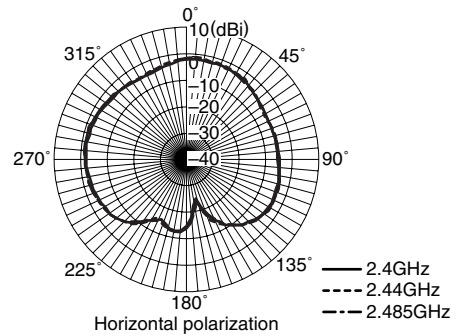
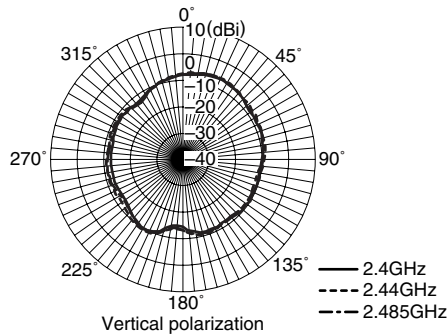
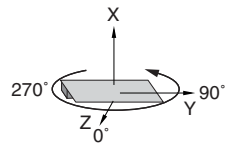
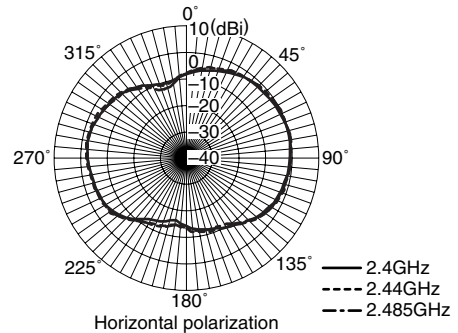
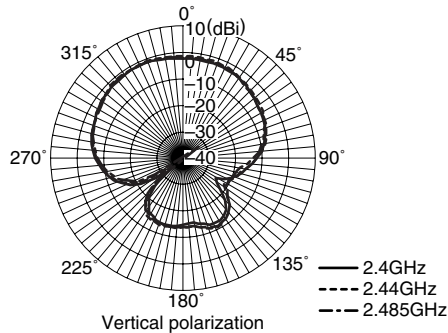
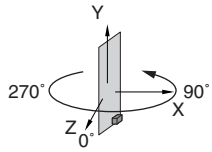
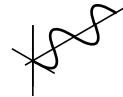
ANT098030CGS2442MA1

Directivity angle

Vertical polarization



Horizontal polarization



• Tested antenna has been soldered.

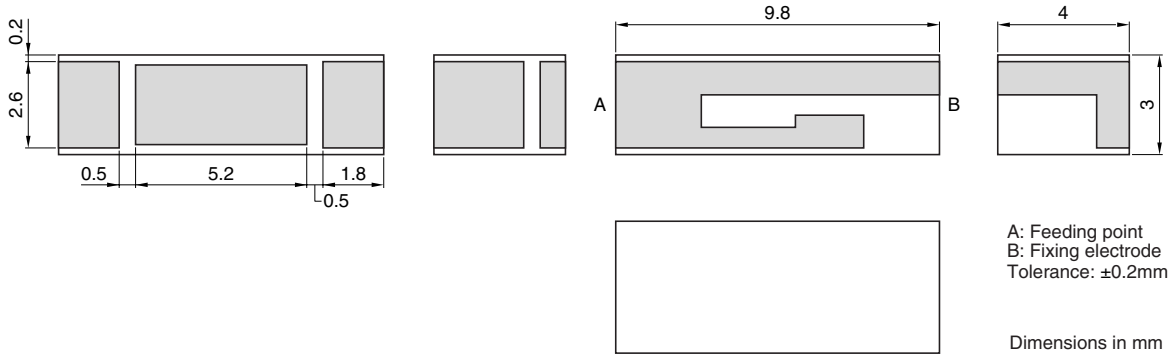
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Ceramic Chip Antennas For 2.4GHz ISM band

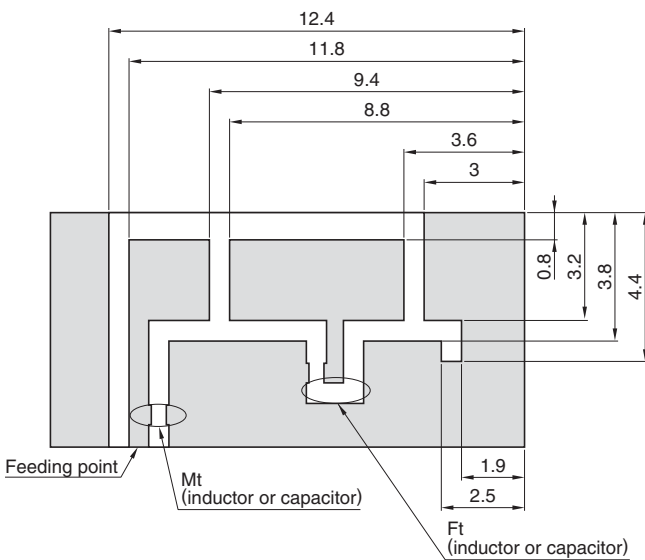
Conformity to RoHS Directive

ANT Series ANT098030CGS2442MB1

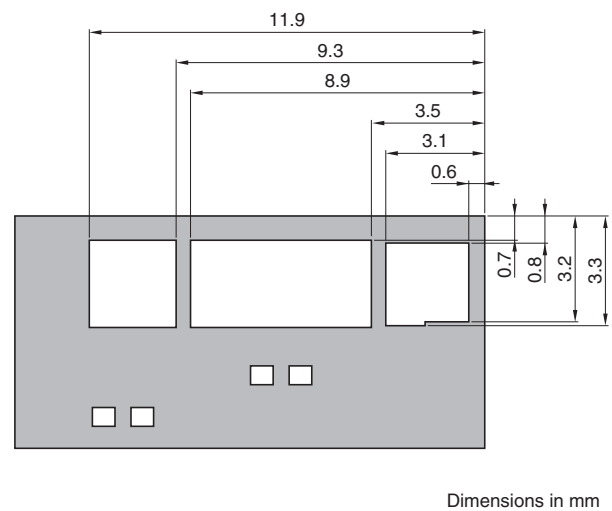
SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS ELECTRODE



SOLDER RESIST



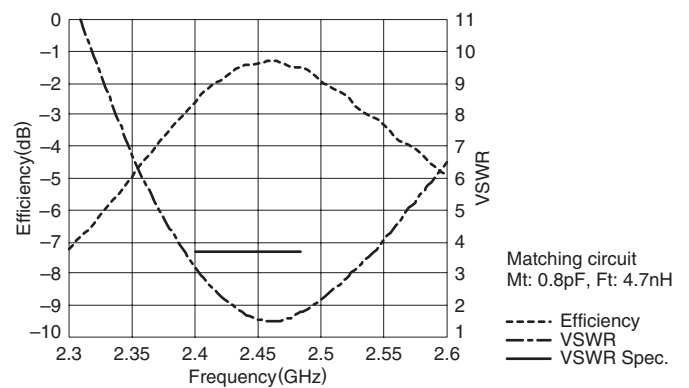
ELECTRICAL CHARACTERISTICS

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Band width(BW)	$F_0 \pm 42$ MHz
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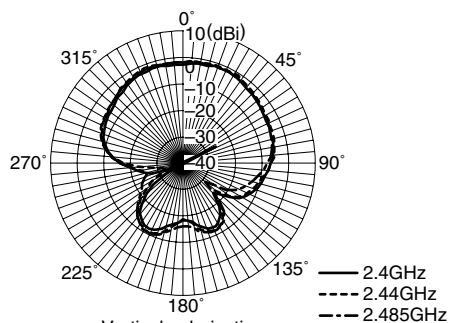
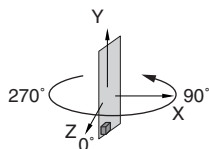
RADIATION PATTERNS
ANT098030CGS2442MB1

Directivity angle

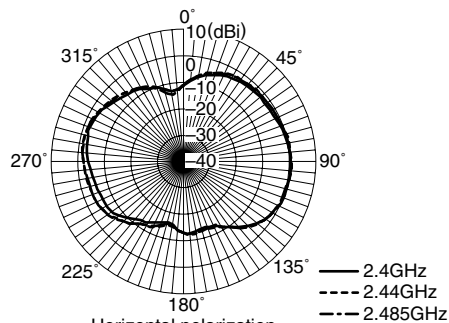
Vertical polarization



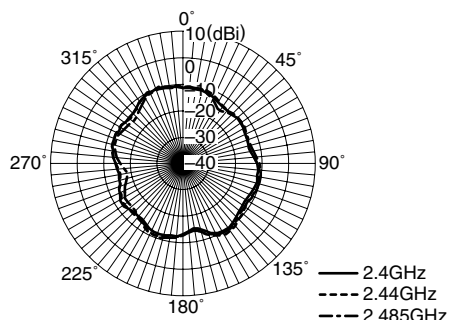
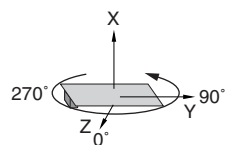
Horizontal polarization



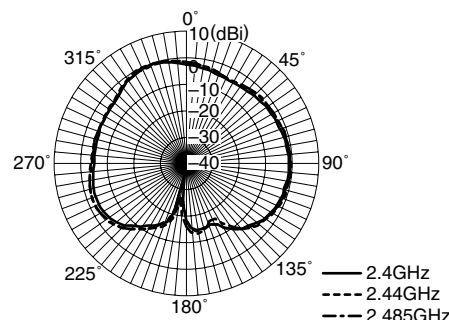
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	-6.61	-5.82	-6.19
Maximum(dBi)	-1.61	-0.92	-1.36
Minimum(dBi)	-53.65	-33.24	-29.04



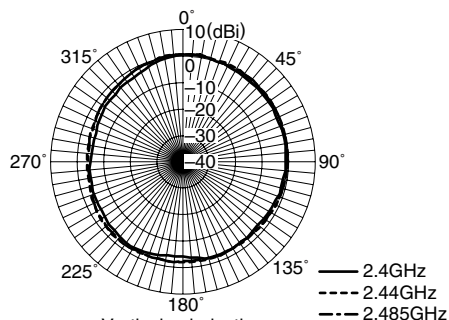
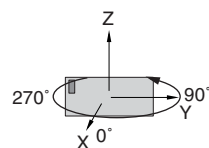
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	-4.34	-3.54	-3.78
Maximum(dBi)	0.54	0.68	0.36
Minimum(dBi)	-16.28	-15.12	-15.44



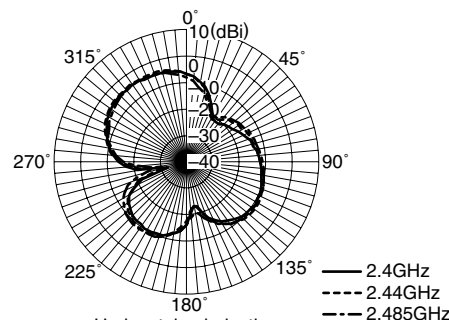
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	-12.42	-11.92	-12.48
Maximum(dBi)	-10.02	-8.90	-9.89
Minimum(dBi)	-15.55	-15.77	-18.54



Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	-4.14	-3.34	-3.61
Maximum(dBi)	-0.43	0.01	-0.66
Minimum(dBi)	-35.27	-26.02	-26.84



Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	-2.13	-1.21	-1.38
Maximum(dBi)	0.56	0.74	0.36
Minimum(dBi)	-5.55	-3.95	-4.27



Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	-9.94	-9.32	-9.88
Maximum(dBi)	-4.70	-3.94	-4.62
Minimum(dBi)	-32.34	-31.36	-26.68

• Tested antenna has been soldered.

• All specifications are subject to change without notice.