

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

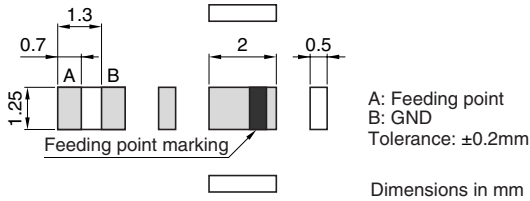
- All specifications are subject to change without notice.
 - Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.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

Ceramic Chip Antennas For 2.4GHz ISM band

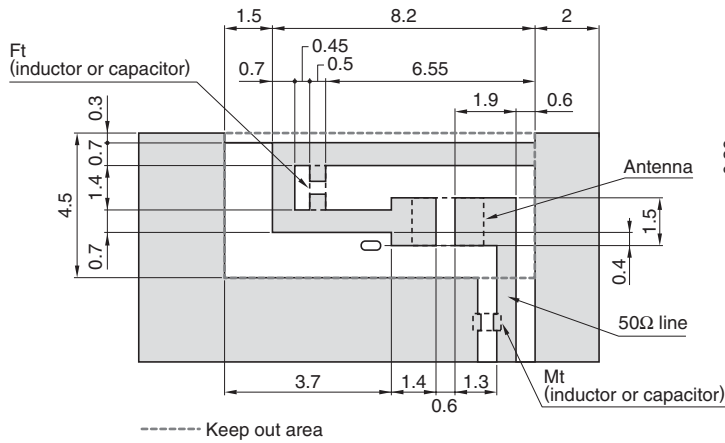
Conformity to RoHS Directive

ANT Series ANT020012CCS2442MA1

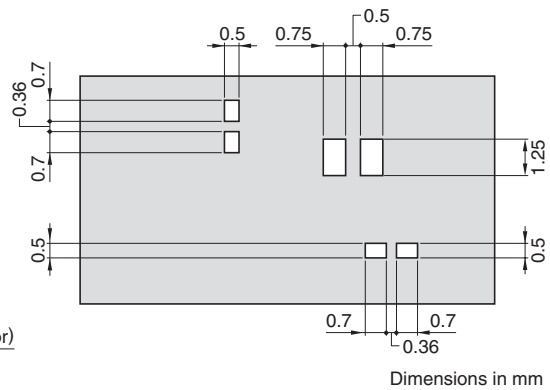
SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS ELECTRODE



SOLDER RESIST

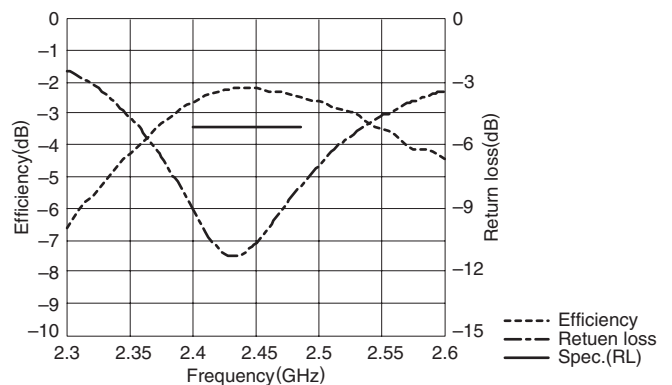


ELECTRICAL CHARACTERISTICS

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



• 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.

• All specifications are subject to change without notice.

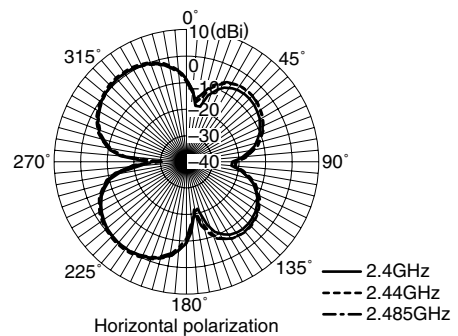
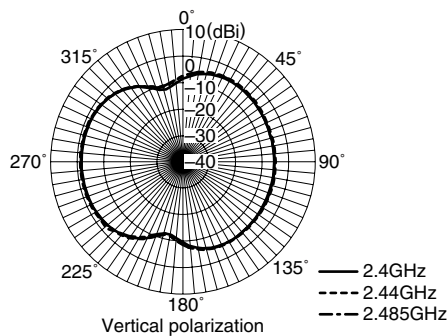
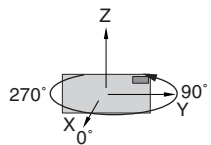
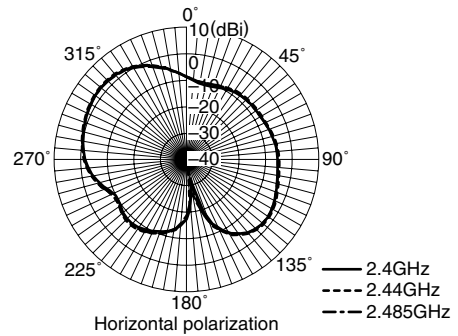
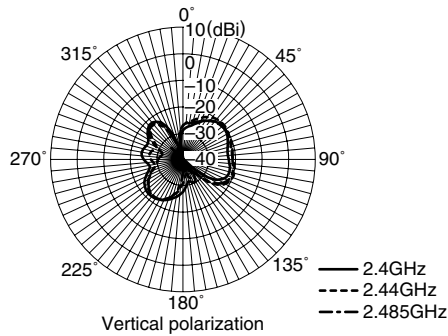
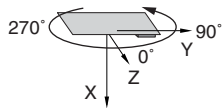
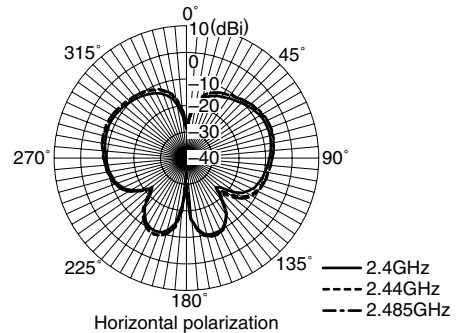
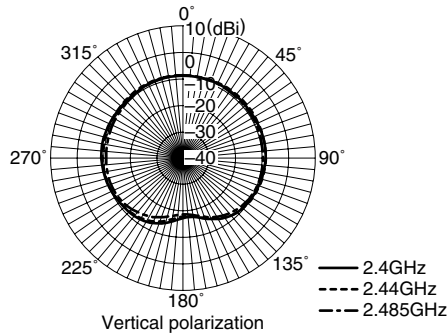
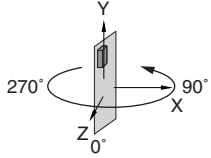
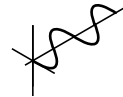
RADIATION PATTERNS
ANT020012CCS2442MA1

Directivity angle

Vertical polarization



Horizontal polarization



• Tested antenna has been soldered.

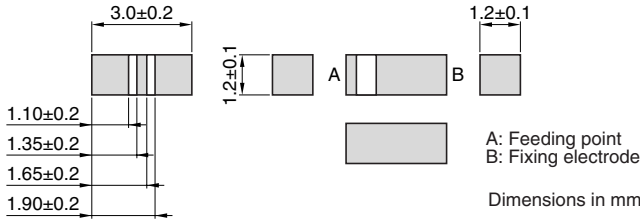
• All specifications are subject to change without notice.

Ceramic Chip Antennas For 2.4GHz ISM band

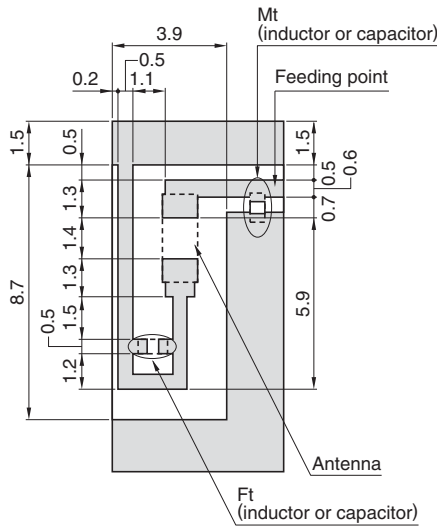
Conformity to RoHS Directive

ANT Series ANT030012CCS2442MA1

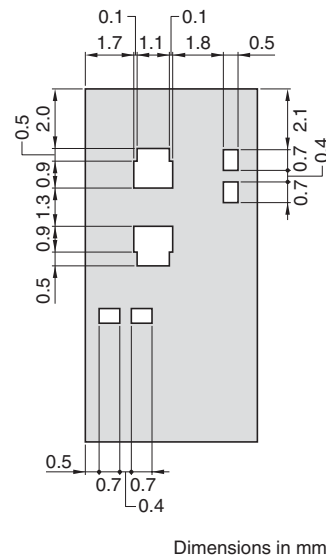
SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS ELECTRODE



SOLDER RESIST



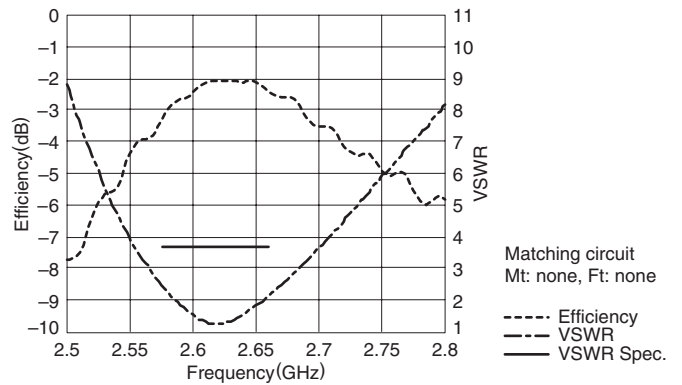
ELECTRICAL CHARACTERISTICS

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.

• All specifications are subject to change without notice.

RADIATION PATTERNS

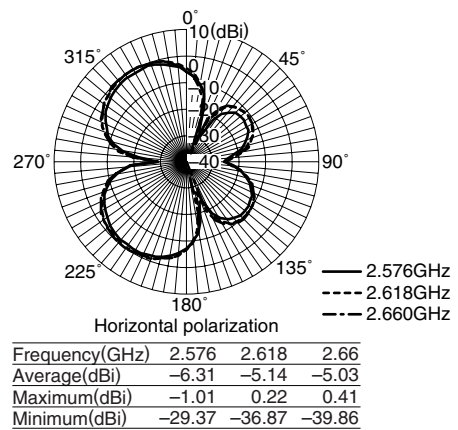
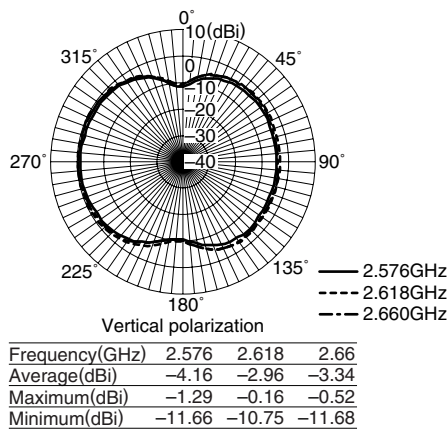
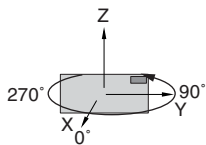
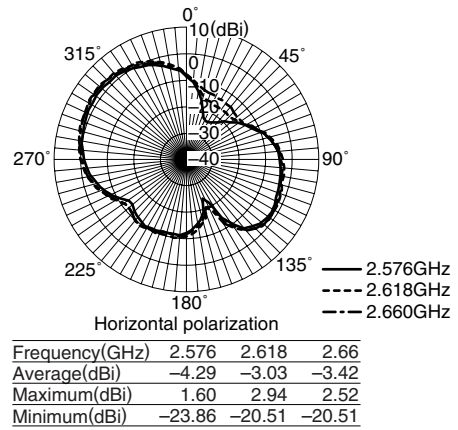
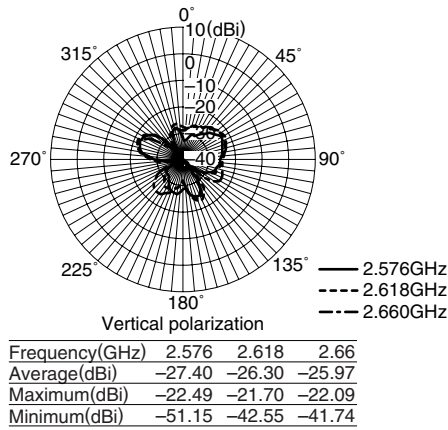
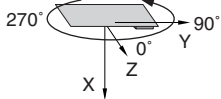
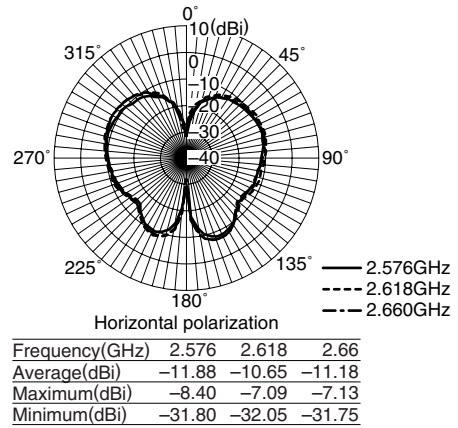
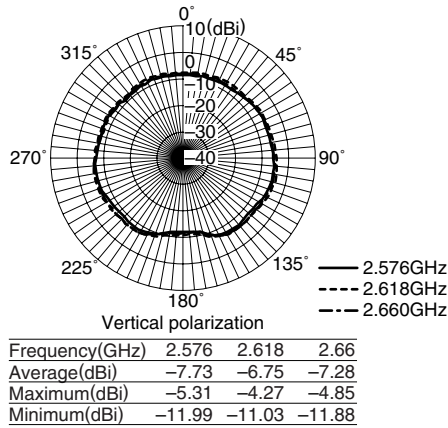
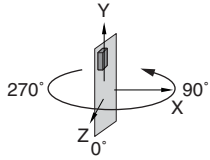
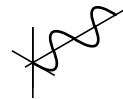
ANT030012CCS2442MA1

Directivity angle

Vertical polarization



Horizontal polarization



• Tested antenna has been soldered.

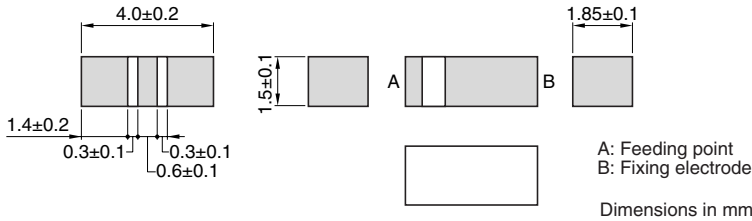
• All specifications are subject to change without notice.

Ceramic Chip Antennas For 2.4GHz ISM band

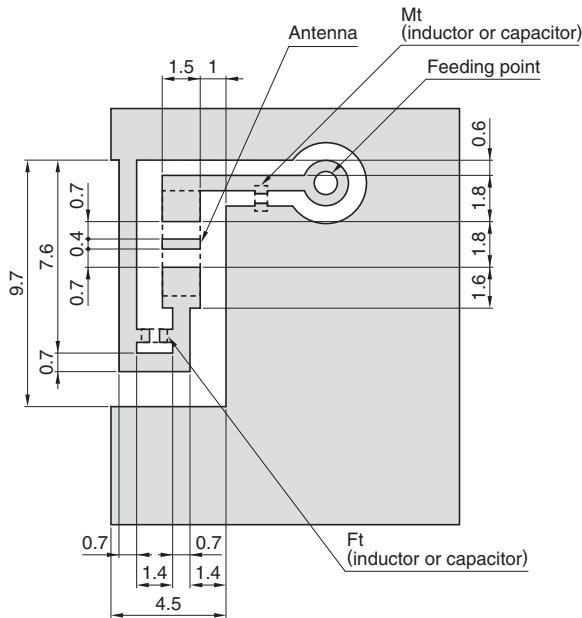
Conformity to RoHS Directive

ANT Series ANT040015CCS2442MA1

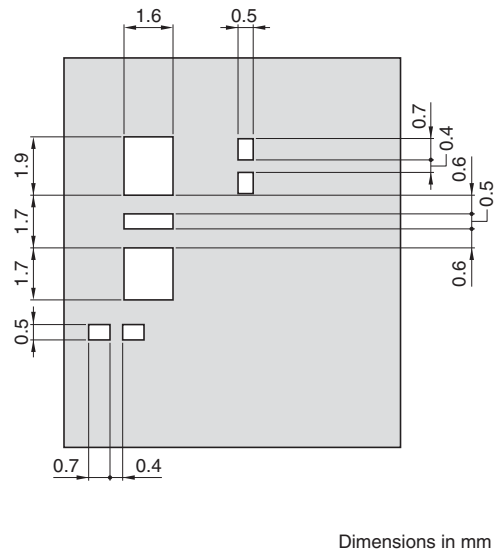
SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS ELECTRODE



SOLDER RESIST



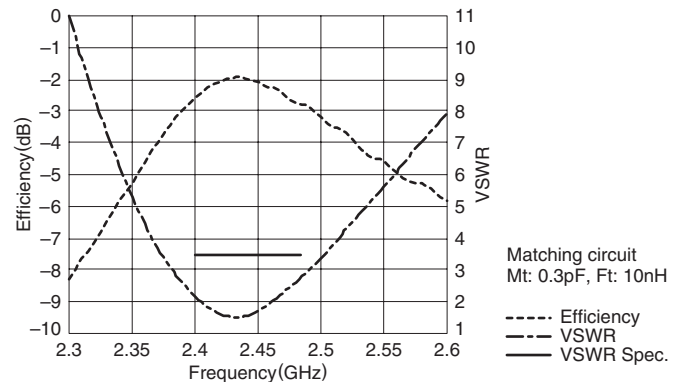
ELECTRICAL CHARACTERISTICS

Center frequency(F ₀)	2442MHz
Band width(BW)	F ₀ ±42MHz
VSWR(at BW)	3.5max.
Polarization	Linear
Impedance	50Ω
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.

• All specifications are subject to change without notice.

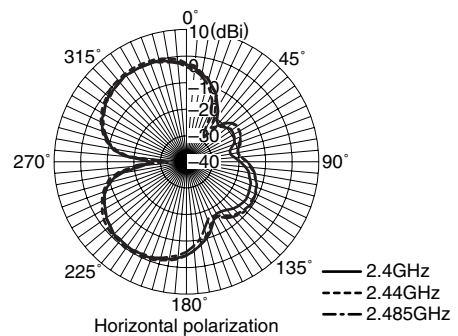
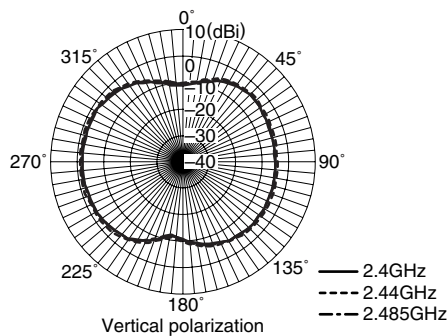
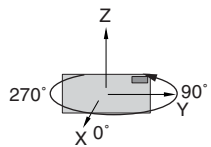
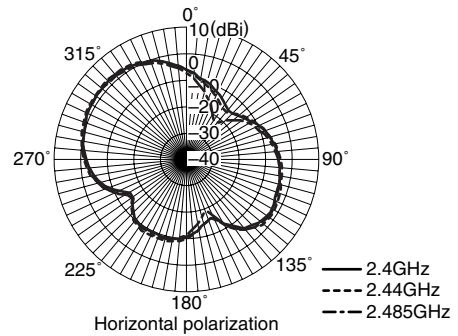
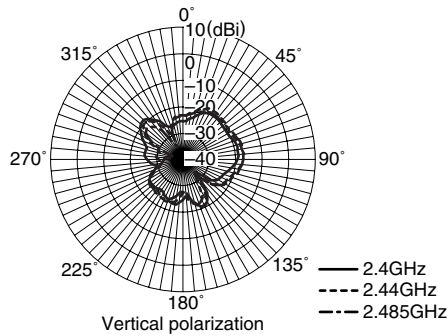
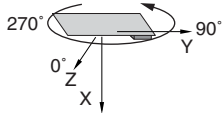
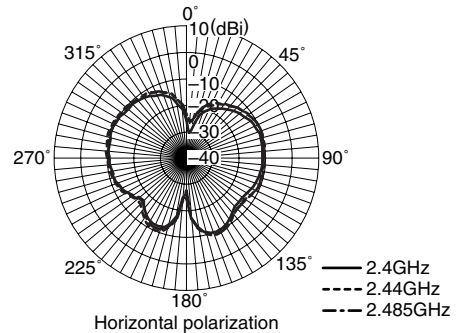
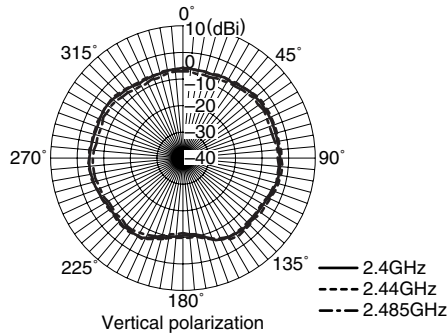
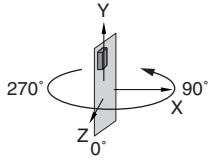
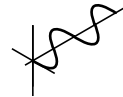
RADIATION PATTERNS ANT040015CCS2442MA1

Directivity angle

Vertical polarization



Horizontal polarization



• Tested antenna has been soldered.

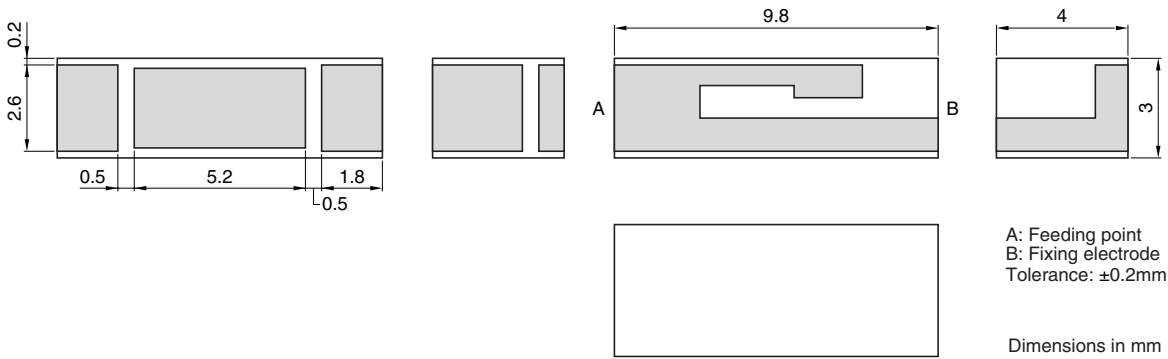
• All specifications are subject to change without notice.

Ceramic Chip Antennas For 2.4GHz ISM band

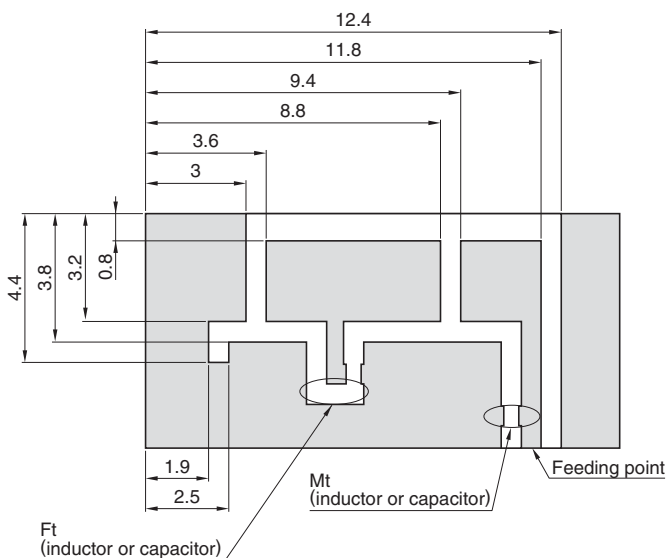
Conformity to RoHS Directive

ANT Series ANT098030CGS2442MA1

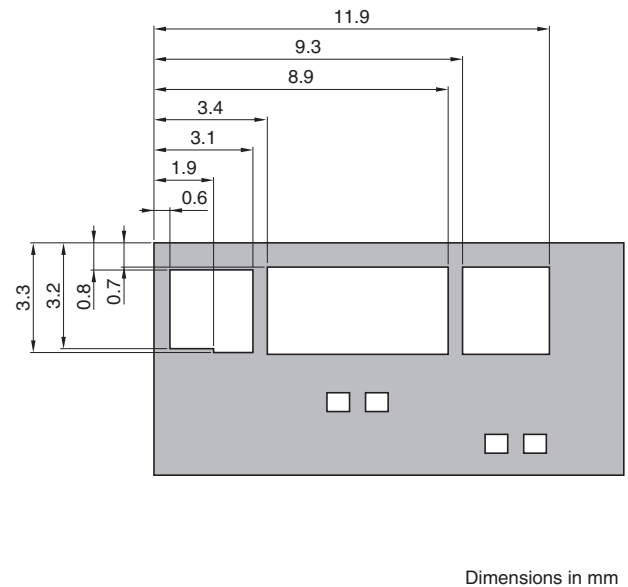
SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS ELECTRODE



SOLDER RESIST



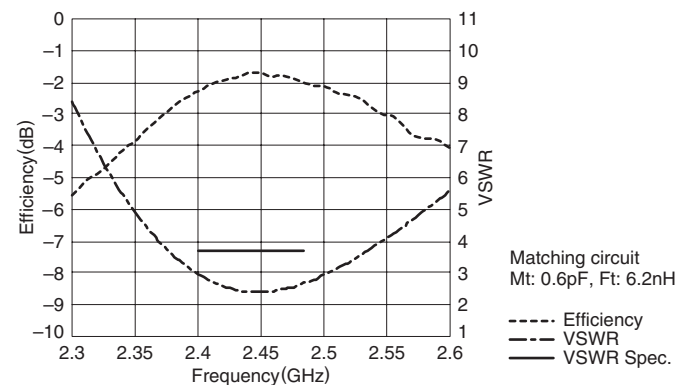
ELECTRICAL CHARACTERISTICS

Center frequency(F_0)	2442MHz	
Band width(BW)	$F_0 \pm 42\text{MHz}$	
VSWR(at BW)	3.7max.	
Polarization	Linear	
Impedance	50Ω	
PCB size	$80 \times 37 \times 1.0\text{mm}$	
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



• 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.

• All specifications are subject to change without notice.

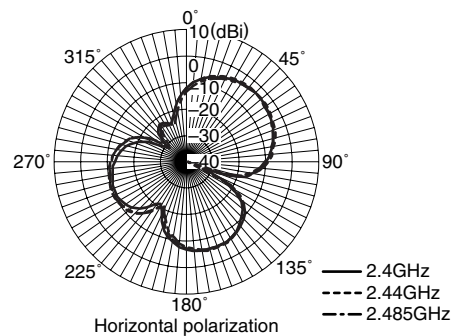
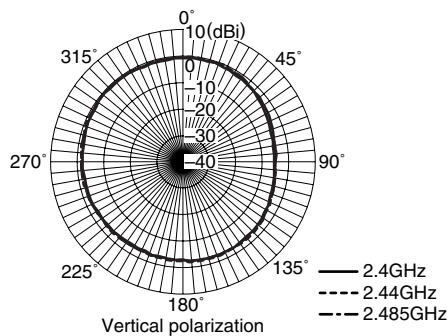
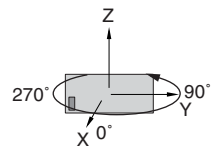
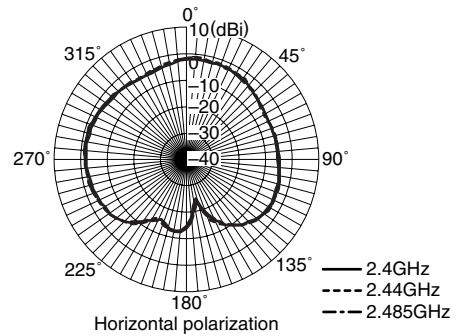
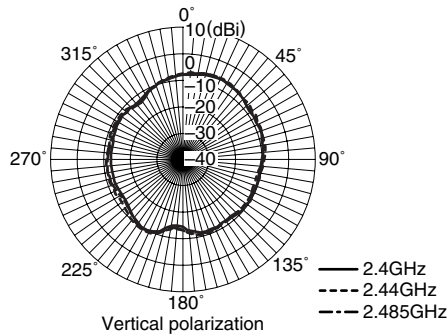
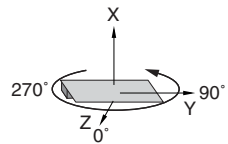
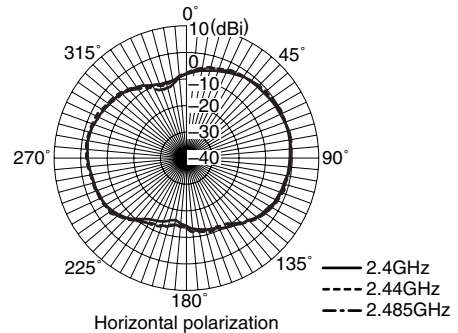
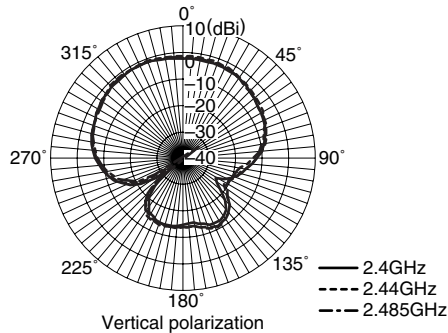
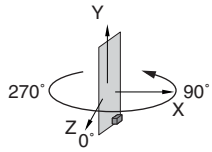
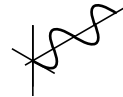
RADIATION PATTERNS
ANT098030CGS2442MA1

Directivity angle

Vertical polarization



Horizontal polarization



• Tested antenna has been soldered.

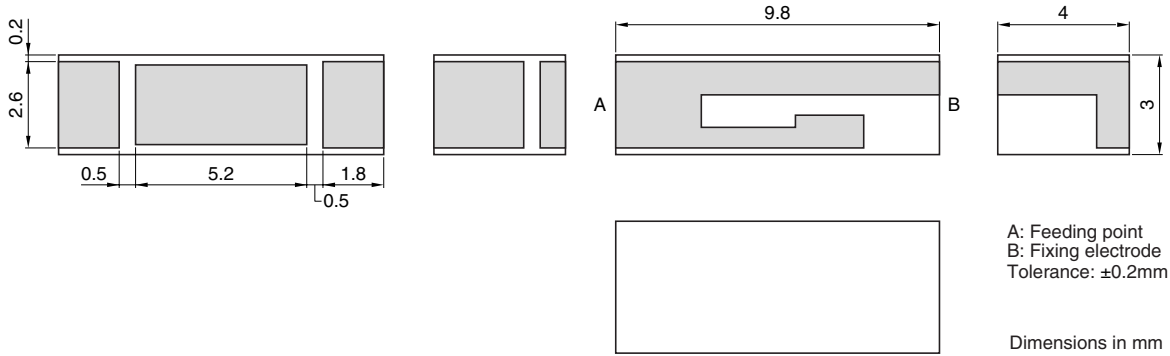
• All specifications are subject to change without notice.

Ceramic Chip Antennas For 2.4GHz ISM band

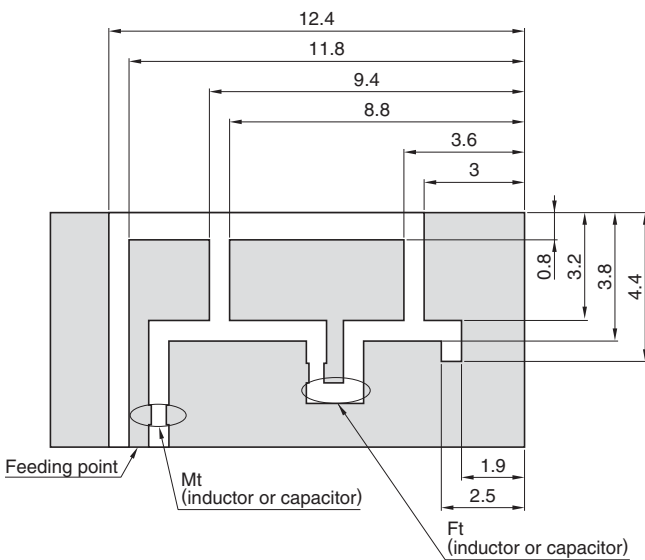
Conformity to RoHS Directive

ANT Series ANT098030CGS2442MB1

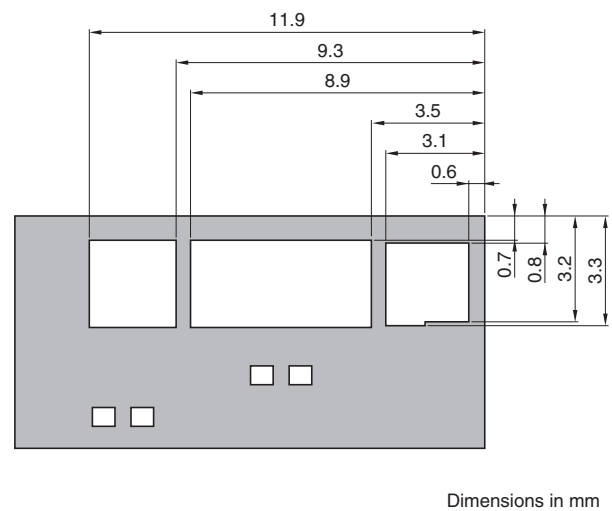
SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS ELECTRODE



SOLDER RESIST



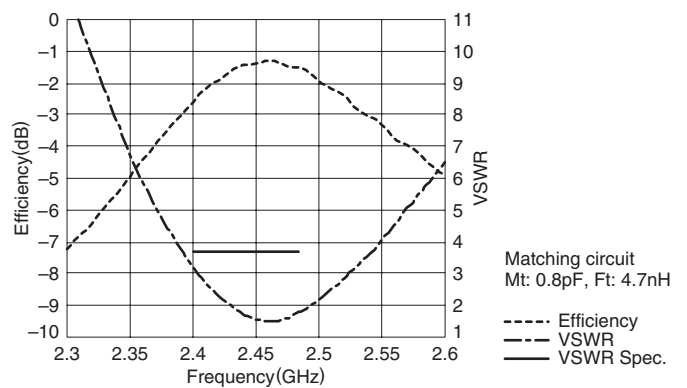
ELECTRICAL CHARACTERISTICS

Center frequency(F_0)	2442MHz
Band width(BW)	$F_0 \pm 42$ MHz
VSWR(at BW)	3.7max.
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



• 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.

• All specifications are subject to change without notice.

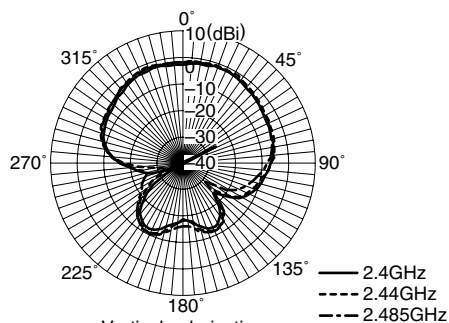
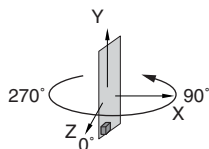
RADIATION PATTERNS
ANT098030CGS2442MB1

Directivity angle

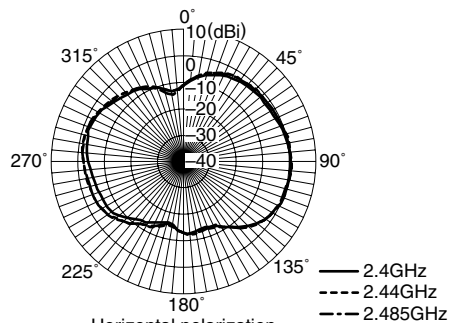
Vertical polarization



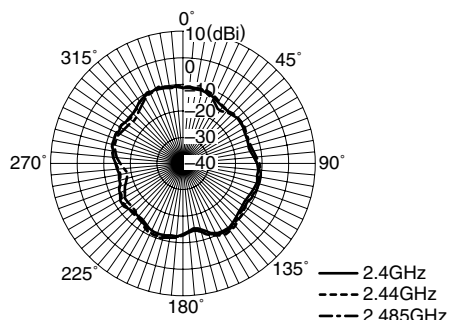
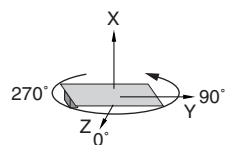
Horizontal polarization



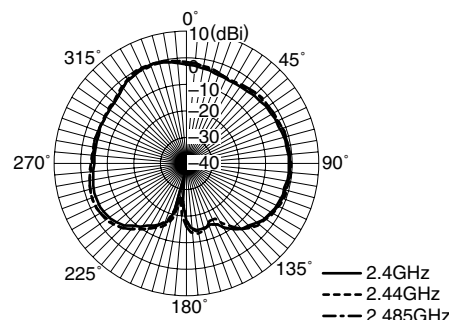
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	-6.61	-5.82	-6.19
Maximum(dBi)	-1.61	-0.92	-1.36
Minimum(dBi)	-53.65	-33.24	-29.04



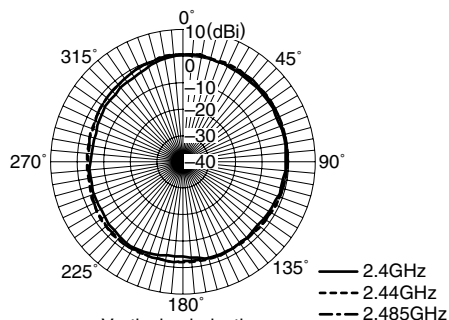
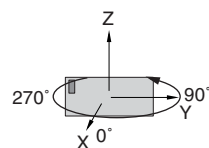
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	-4.34	-3.54	-3.78
Maximum(dBi)	0.54	0.68	0.36
Minimum(dBi)	-16.28	-15.12	-15.44



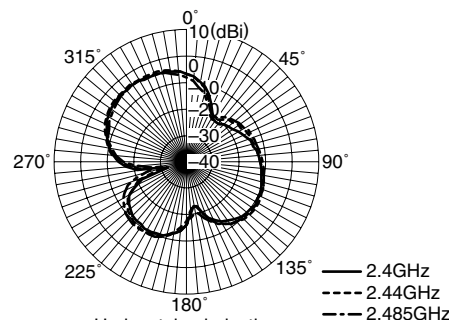
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	-12.42	-11.92	-12.48
Maximum(dBi)	-10.02	-8.90	-9.89
Minimum(dBi)	-15.55	-15.77	-18.54



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.