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.

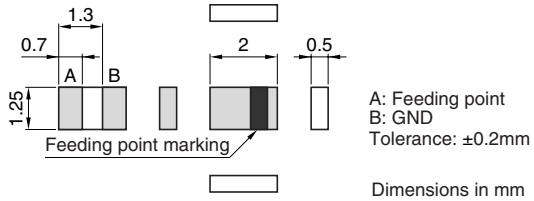
TDK

Ceramic Chip Antennas
For 2.4GHz ISM band

Conformity to RoHS Directive

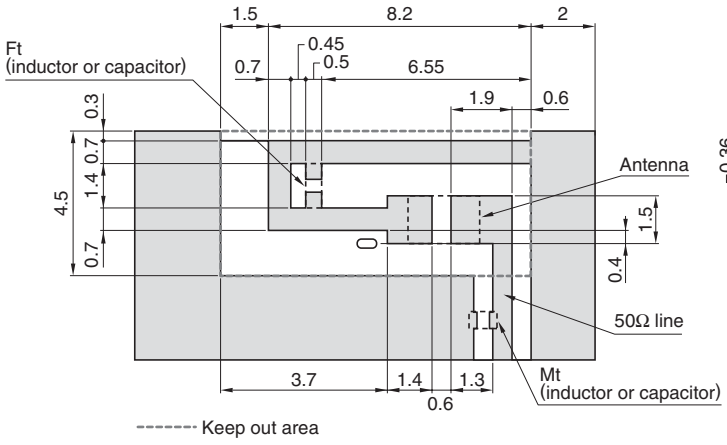
ANT Series ANT020012CCS2442MA1

SHAPES AND DIMENSIONS

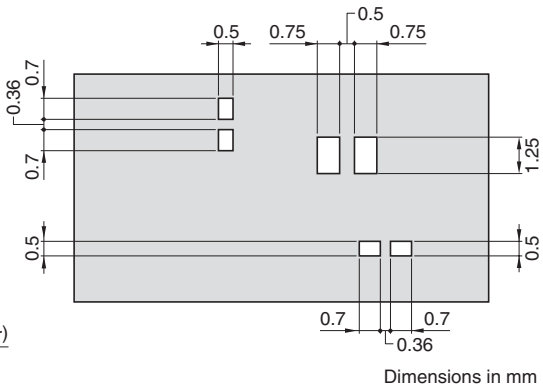


RECOMMENDED PC BOARD PATTERNS

ELECTRODE



SOLDER RESIST



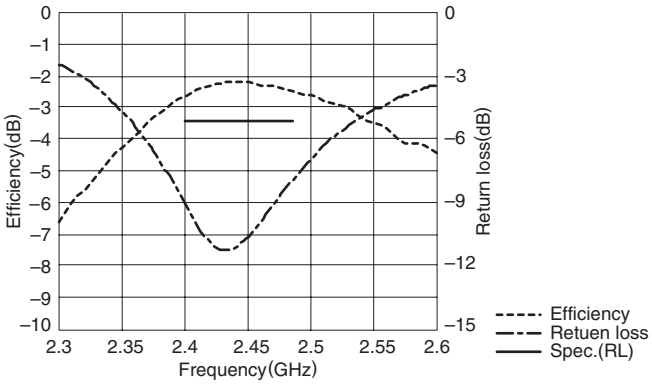
ELECTRICAL CHARACTERISTICS

Center frequency(F_0)		2442MHz
Band width(BW)		F_0 ±42MHz
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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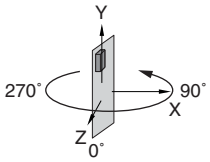
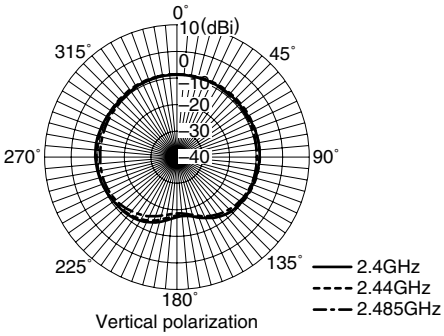
RADIATION PATTERNS

ANT020012CCS2442MA1

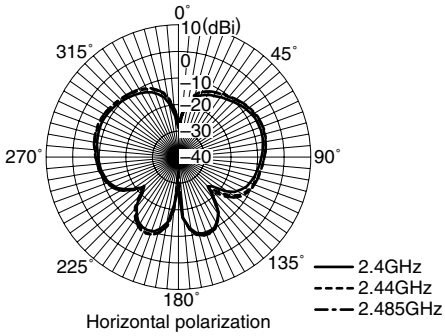
Directivity angle | Vertical polarization | Horizontal polarization





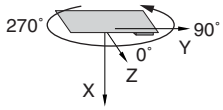
Vertical polarization

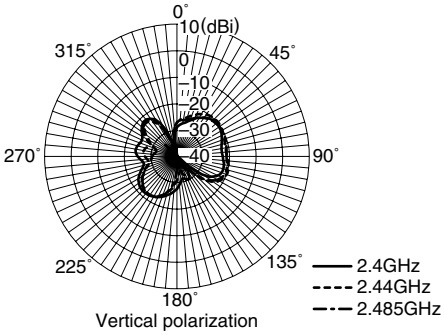
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	−10.08	−9.99	−10.80
Maximum(dBi)	−8.69	−8.58	−8.71
Minimum(dBi)	−17.67	−18.14	−18.69



Horizontal polarization

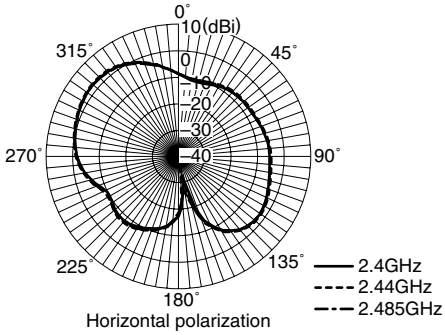
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	−11.22	−10.22	−10.11
Maximum(dBi)	−7.16	−6.22	−6.03
Minimum(dBi)	−28.90	−30.93	−34.47





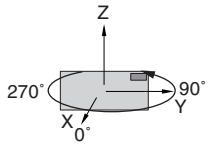
Vertical polarization

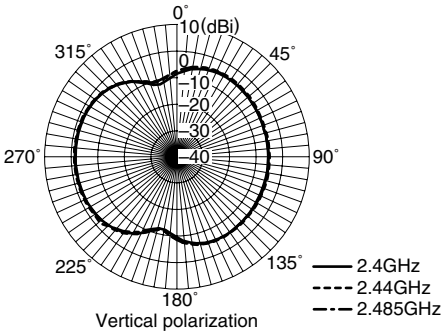
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	−24.14	−23.82	−24.30
Maximum(dBi)	−20.50	−19.81	−20.40
Minimum(dBi)	−46.23	−38.09	−42.88



Horizontal polarization

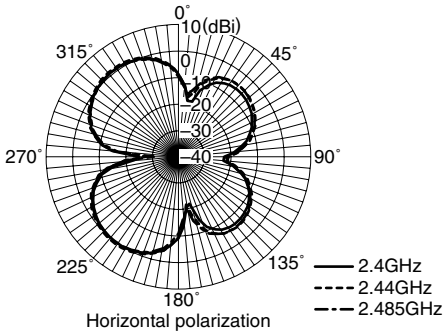
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	−3.92	−3.46	−3.87
Maximum(dBi)	2.21	2.63	2.15
Minimum(dBi)	−30.37	−35.46	−27.55





Vertical polarization

Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	−4.70	−4.19	−4.50
Maximum(dBi)	−1.67	−1.18	−1.44
Minimum(dBi)	−12.08	−11.61	−12.06



Horizontal polarization

Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	−4.57	−3.86	−4.44
Maximum(dBi)	0.87	1.48	0.82
Minimum(dBi)	−25.05	−27.78	−30.69

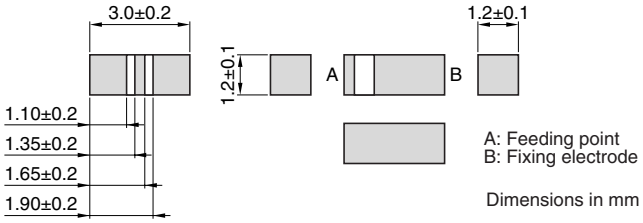
• Tested antenna has been soldered.

Ceramic Chip Antennas
For 2.4GHz ISM band

Conformity to RoHS Directive

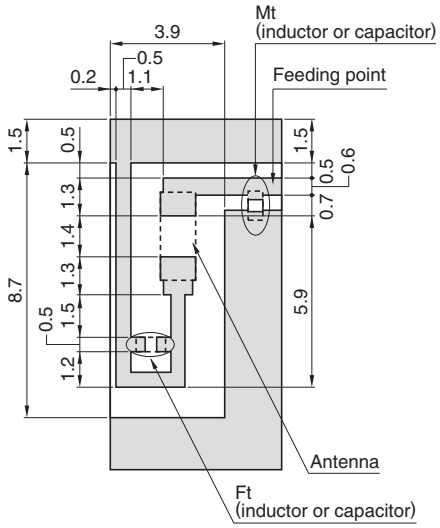
ANT Series ANT030012CCS2442MA1

SHAPES AND DIMENSIONS

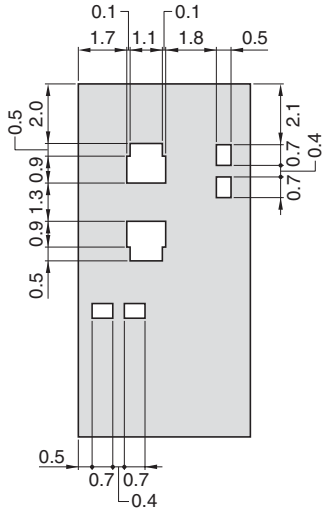


RECOMMENDED PC BOARD PATTERNS

ELECTRODE



SOLDER RESIST



Dimensions in mm

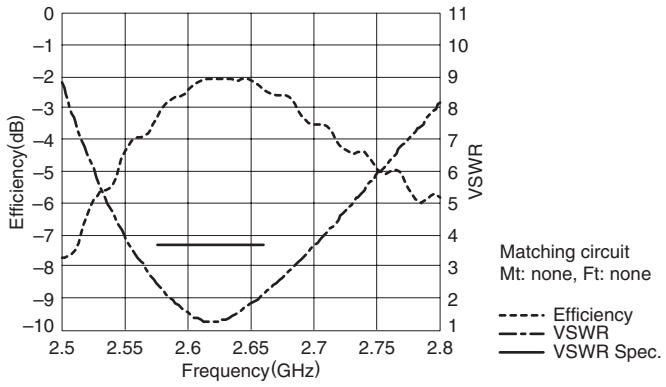
ELECTRICAL CHARACTERISTICS

Center frequency(F_0)		2618MHz
Band width(BW)		F_0 ±42MHz
VSWR(at BW)		3.7max.
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



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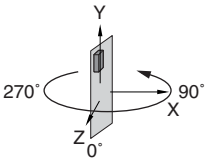
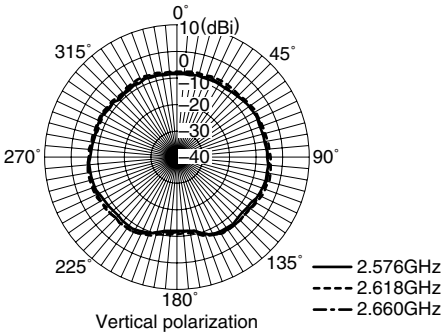
RADIATION PATTERNS

ANT030012CCS2442MA1

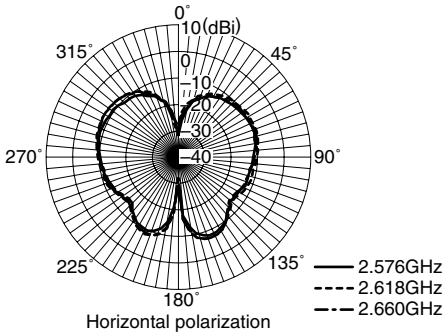
Directivity angle | Vertical polarization | Horizontal polarization





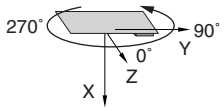
Vertical polarization

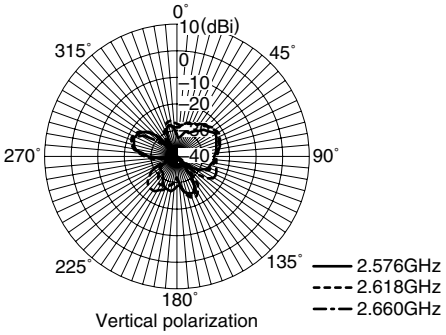
Frequency(GHz)	2.576	2.618	2.66
Average(dBi)	−7.73	−6.75	−7.28
Maximum(dBi)	−5.31	−4.27	−4.85
Minimum(dBi)	−11.99	−11.03	−11.88



Horizontal polarization

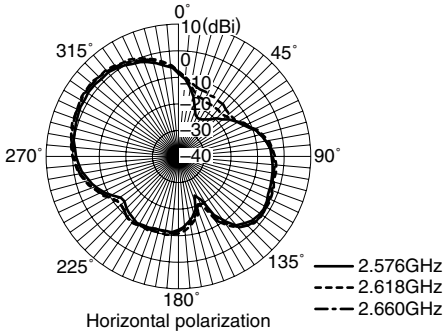
Frequency(GHz)	2.576	2.618	2.66
Average(dBi)	−11.88	−10.65	−11.18
Maximum(dBi)	−8.40	−7.09	−7.13
Minimum(dBi)	−31.80	−32.05	−31.75





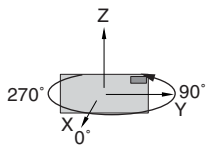
Vertical polarization

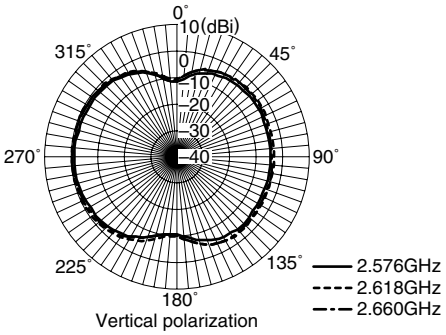
Frequency(GHz)	2.576	2.618	2.66
Average(dBi)	−27.40	−26.30	−25.97
Maximum(dBi)	−22.49	−21.70	−22.09
Minimum(dBi)	−51.15	−42.55	−41.74



Horizontal polarization

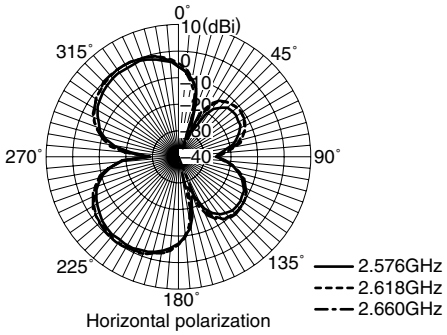
Frequency(GHz)	2.576	2.618	2.66
Average(dBi)	−4.29	−3.03	−3.42
Maximum(dBi)	1.60	2.94	2.52
Minimum(dBi)	−23.86	−20.51	−20.51





Vertical polarization

Frequency(GHz)	2.576	2.618	2.66
Average(dBi)	−4.16	−2.96	−3.34
Maximum(dBi)	−1.29	−0.16	−0.52
Minimum(dBi)	−11.66	−10.75	−11.68



Horizontal polarization

Frequency(GHz)	2.576	2.618	2.66
Average(dBi)	−6.31	−5.14	−5.03
Maximum(dBi)	−1.01	0.22	0.41
Minimum(dBi)	−29.37	−36.87	−39.86

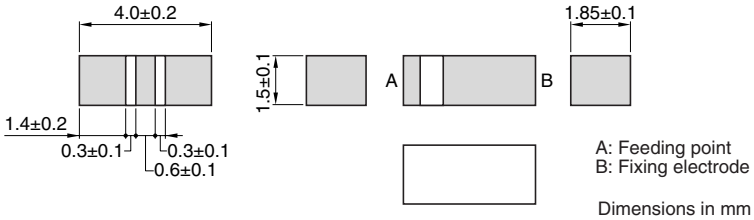
• Tested antenna has been soldered.

Ceramic Chip Antennas
For 2.4GHz ISM band

Conformity to RoHS Directive

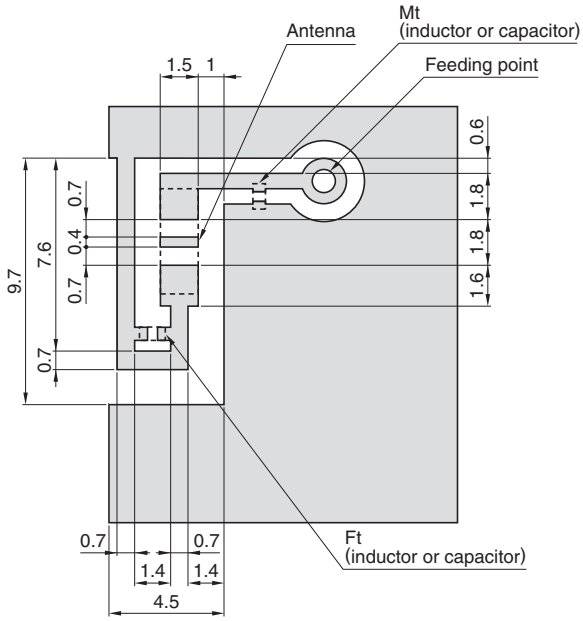
ANT Series ANT040015CCS2442MA1

SHAPES AND DIMENSIONS

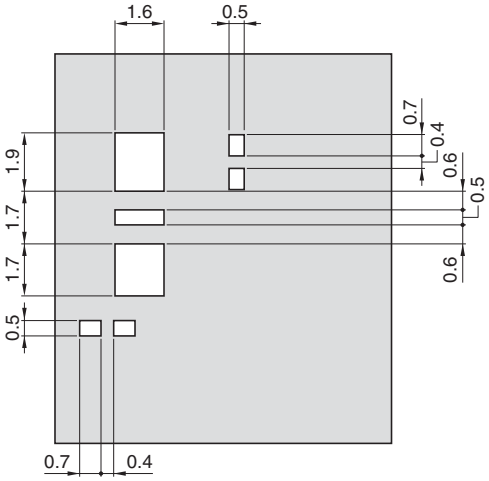


RECOMMENDED PC BOARD PATTERNS

ELECTRODE



SOLDER RESIST



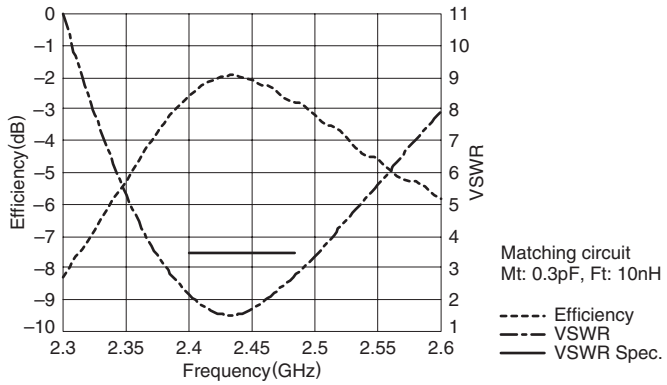
ELECTRICAL CHARACTERISTICS

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



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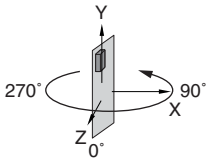
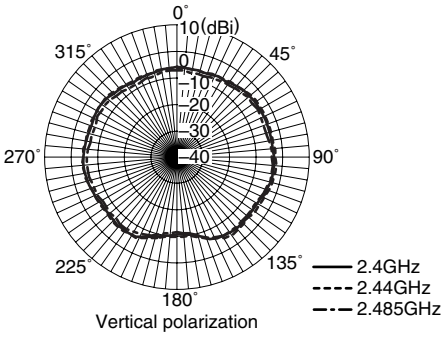
RADIATION PATTERNS

ANT040015CCS2442MA1

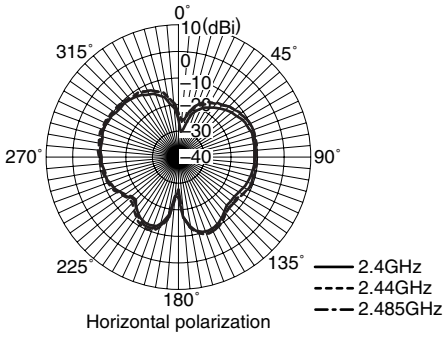
Directivity angle | Vertical polarization | Horizontal polarization





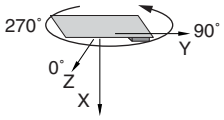
Vertical polarization

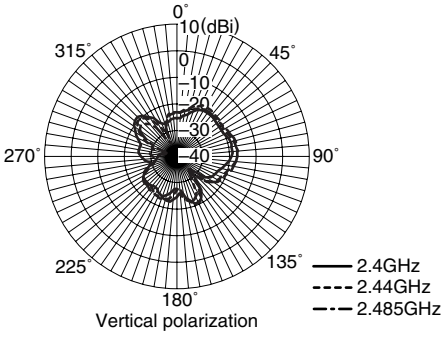
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–5.53	–5.09	–6.46
Maximum(dBi)	–3.17	–2.50	–3.68
Minimum(dBi)	–10.82	–10.10	–11.47



Horizontal polarization

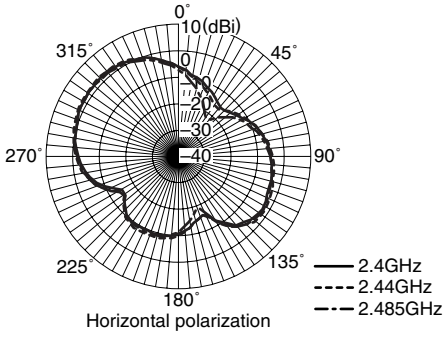
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–12.88	–11.80	–12.09
Maximum(dBi)	–9.95	–9.02	–9.07
Minimum(dBi)	–30.30	–27.45	–27.63





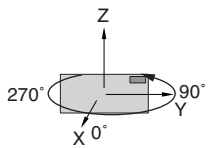
Vertical polarization

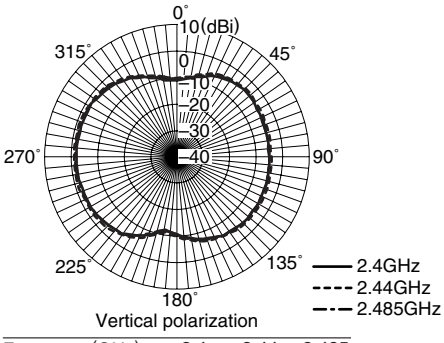
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–22.69	–21.97	–22.24
Maximum(dBi)	–18.95	–17.00	–16.96
Minimum(dBi)	–33.22	–32.13	–36.22



Horizontal polarization

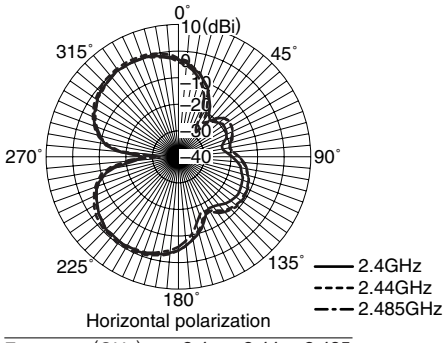
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–4.07	–3.42	–4.20
Maximum(dBi)	1.71	2.32	1.59
Minimum(dBi)	–16.05	–16.62	–22.00





Vertical polarization

Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–4.73	–3.94	–4.54
Maximum(dBi)	–1.98	–1.17	–1.61
Minimum(dBi)	–11.61	–10.94	–12.00



Horizontal polarization

Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–5.33	–4.56	–5.61
Maximum(dBi)	–0.08	0.72	–0.26
Minimum(dBi)	–26.23	–30.96	–32.81

• Tested antenna has been soldered.

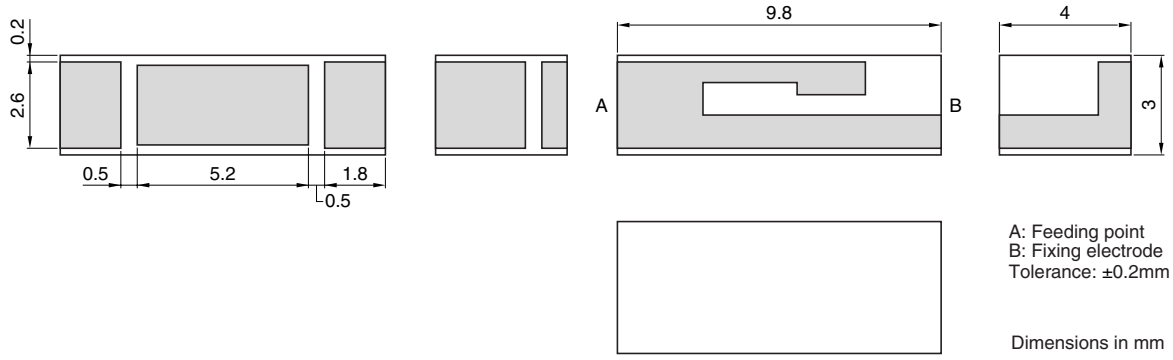
TDK

Ceramic Chip Antennas
For 2.4GHz ISM band

Conformity to RoHS Directive

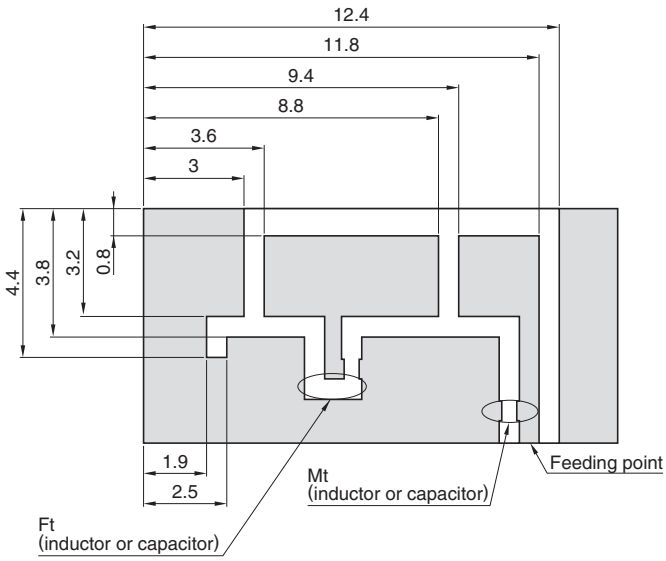
ANT Series ANT098030CGS2442MA1

SHAPES AND DIMENSIONS

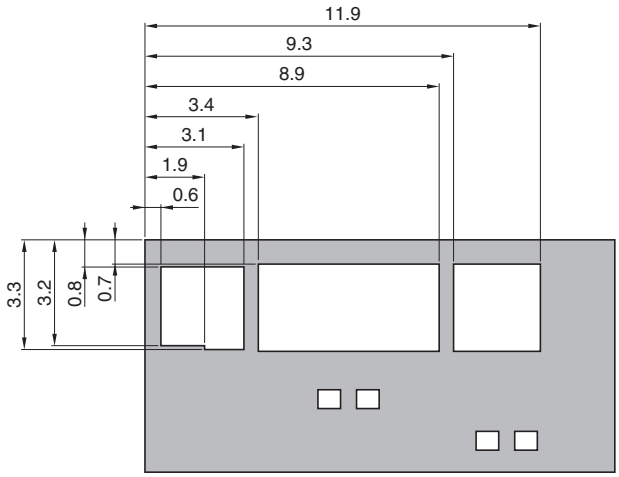


RECOMMENDED PC BOARD PATTERNS

ELECTRODE



SOLDER RESIST



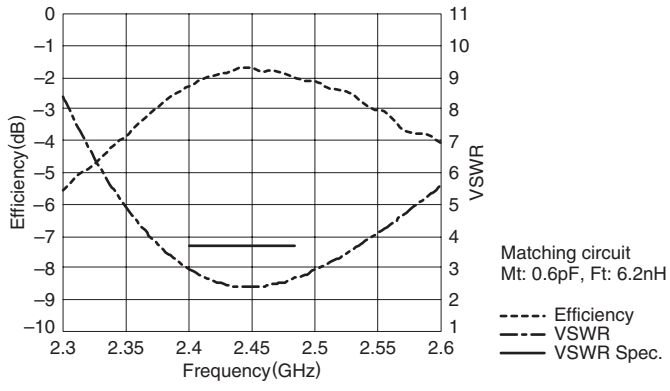
ELECTRICAL CHARACTERISTICS

Center frequency(F0)		2442MHz
Band width(BW)		F0 ±42MHz
VSWR(at BW)		3.7max.
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

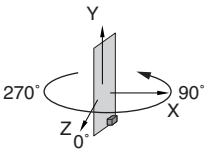


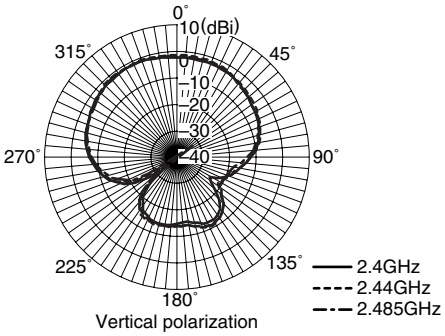
• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

RADIATION PATTERNS

ANT098030CGS2442MA1

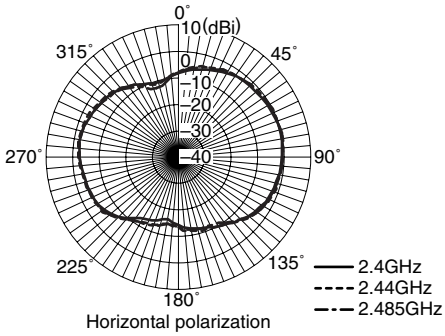
Directivity angle | Vertical polarization | Horizontal polarization





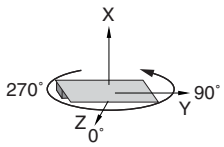
Vertical polarization

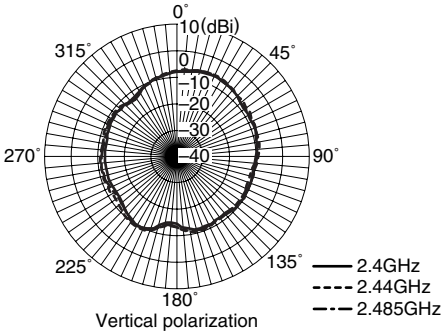
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–6.03	–5.59	–6.08
Maximum(dBi)	–1.36	–0.92	–1.40
Minimum(dBi)	–31.57	–34.86	–47.72



Horizontal polarization

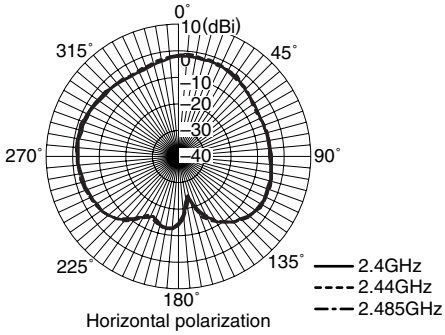
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–4.43	–3.93	–4.22
Maximum(dBi)	–0.49	0.02	–0.12
Minimum(dBi)	–15.92	–14.49	–14.20





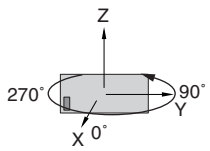
Vertical polarization

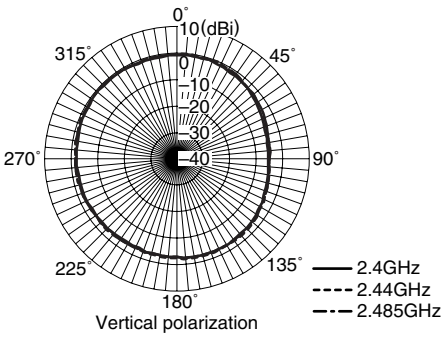
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–10.30	–9.66	–10.14
Maximum(dBi)	–6.46	–6.09	–6.36
Minimum(dBi)	–14.96	–13.88	–13.94



Horizontal polarization

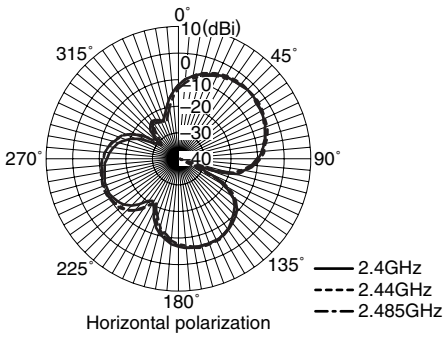
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–4.74	–4.23	–4.39
Maximum(dBi)	–1.93	–1.41	–1.28
Minimum(dBi)	–24.82	–23.62	–23.03





Vertical polarization

Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–2.38	–1.92	–2.03
Maximum(dBi)	–0.82	–0.39	–0.49
Minimum(dBi)	–5.44	–4.95	–4.93



Horizontal polarization

Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–8.98	–8.48	–9.09
Maximum(dBi)	–3.28	–2.79	–3.48
Minimum(dBi)	–33.03	–39.37	–33.20

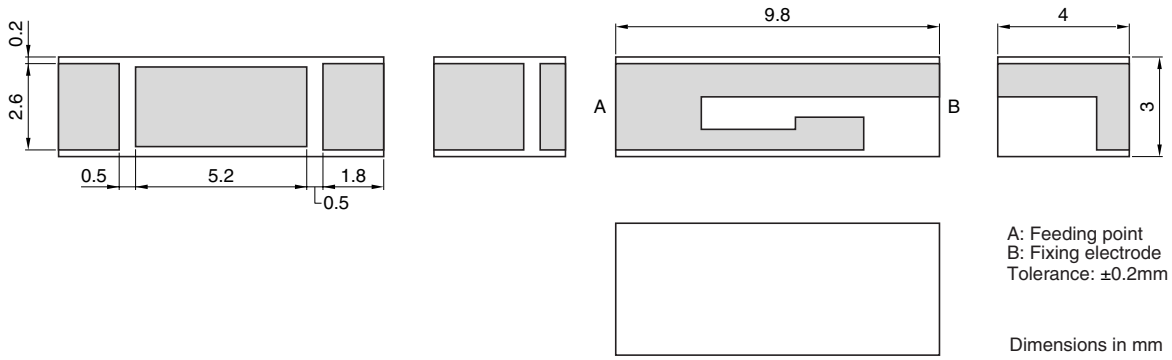
• Tested antenna has been soldered.

Ceramic Chip Antennas
For 2.4GHz ISM band

Conformity to RoHS Directive

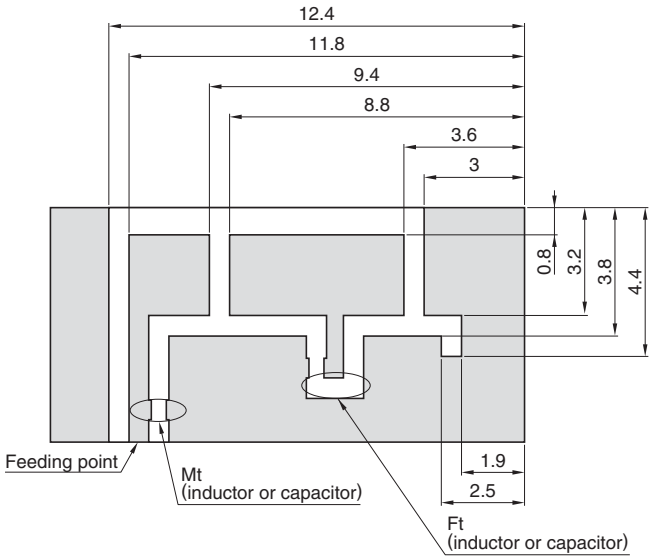
ANT Series ANT098030CGS2442MB1

SHAPES AND DIMENSIONS

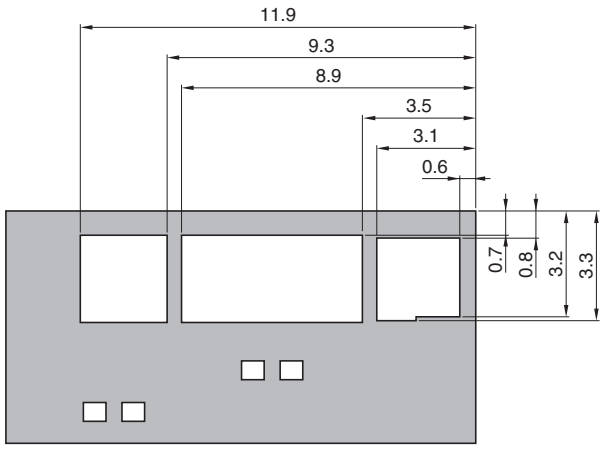


RECOMMENDED PC BOARD PATTERNS

ELECTRODE



SOLDER RESIST



ELECTRICAL CHARACTERISTICS

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	Storage	–40 to +85°C

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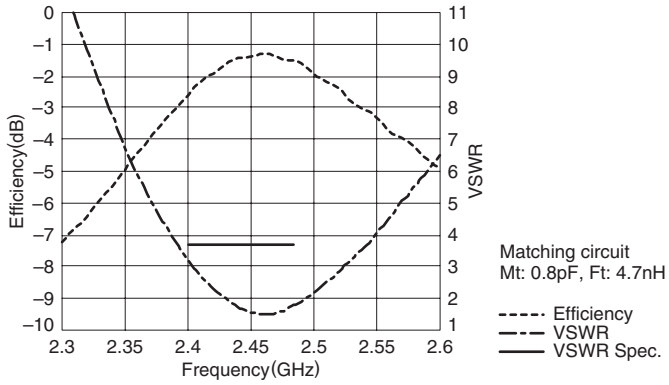
FREQUENCY CHARACTERISTICS
EFFICIENCY AND VSWR



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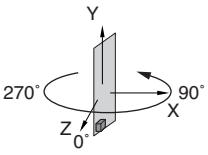
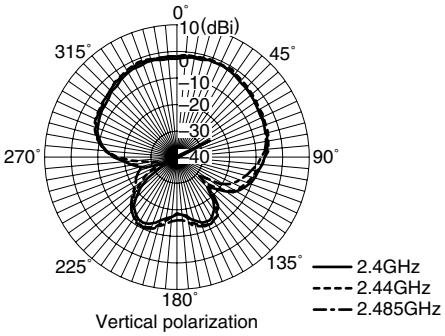
RADIATION PATTERNS

ANT098030CGS2442MB1

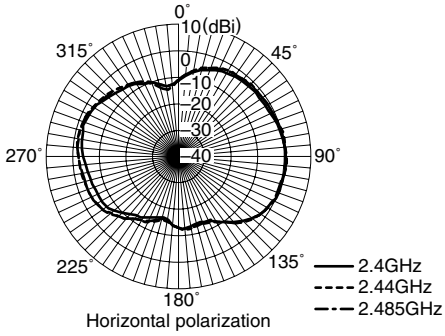
Directivity angle | Vertical polarization | Horizontal polarization





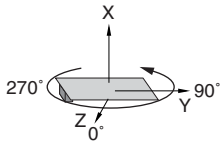
Vertical polarization

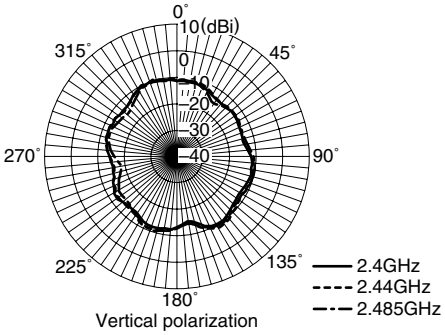
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–6.61	–5.82	–6.19
Maximum(dBi)	–1.61	–0.92	–1.36
Minimum(dBi)	–53.65	–33.24	–29.04



Horizontal polarization

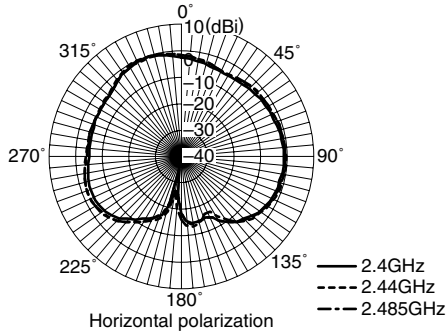
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–4.34	–3.54	–3.78
Maximum(dBi)	0.54	0.68	0.36
Minimum(dBi)	–16.28	–15.12	–15.44





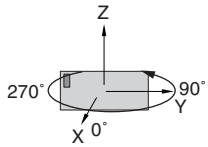
Vertical polarization

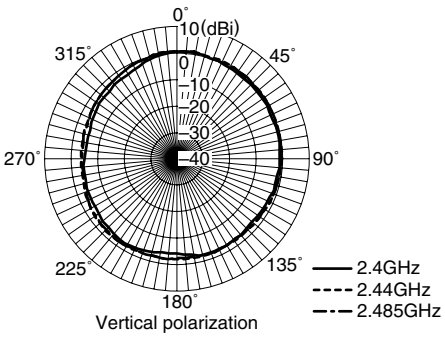
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–12.42	–11.92	–12.48
Maximum(dBi)	–10.02	–8.90	–9.89
Minimum(dBi)	–15.55	–15.77	–18.54



Horizontal polarization

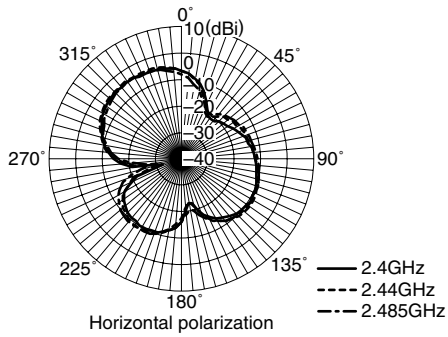
Frequency(GHz)	2.4	2.44	2.485
Average(dBi)	–4.14	–3.34	–3.61
Maximum(dBi)	–0.43	0.01	–0.66
Minimum(dBi)	–35.27	–26.02	–26.84





Vertical polarization

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



Horizontal polarization

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.

Mouser Electronics

Authorized Distributor

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ANT098030CGS2442MB1