

Application note

868MHz Monopole ANTENNA

*10 x 3.2 x 4 mm Ceramic Chip Antenna
(Ground Cleared Under Antenna 11.50 mm x 7 mm)*

Pulse Part Number: W3016

Status

Author	MHK	Version	1.0.0
Checked by	MHa	Date	29.05.2008
Approved by	KiKo	Date	30.05.2008

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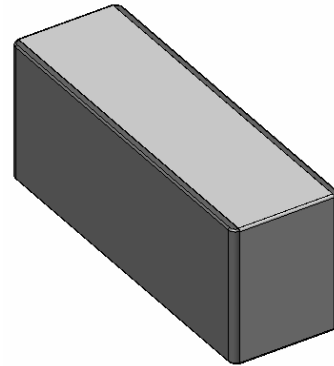
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868MHz Ceramic Chip Antenna

Ground cleared under antenna, clearance area **11.50 mm x 7 mm**

Features

- Low profile
- Compact size W x L x H (10 x 3.2 x 4 mm)
- Low weight (600 mg)
- Lead free materials
- Fully SMD compatible
- Lead free soldering compatible
- Tape and reel packing
- RoHS Compliant Product



Applications

- **868MHz radios**

Electrical specifications @ +25 °C

Note: Electrical characteristics depend on test board (GP) size and antenna positioning on GP and Ground Clearance area size.

W3016 868MHz

*Typical performance (test board size 25 x 25 mm, PWB ground clearance area **11.50 x 7 mm**)*

6.8nH and 22nH series inductors used for frequency tuning and 6.8nH shunt inductor used for impedance matching.

Frequency Range [MHz]	3D Max Gain [dBi]	3D Efficiency [%] / [dB]	Return loss min. [dB]	Impedance [Ω]	Operating Temperature [$^{\circ}$ C]
844 - 904	-2.2 (peak) -4.2 (band edges)	24 / -6.1 (peak) 17 / -7.7 (band edges)	-15	50	-40 to +85

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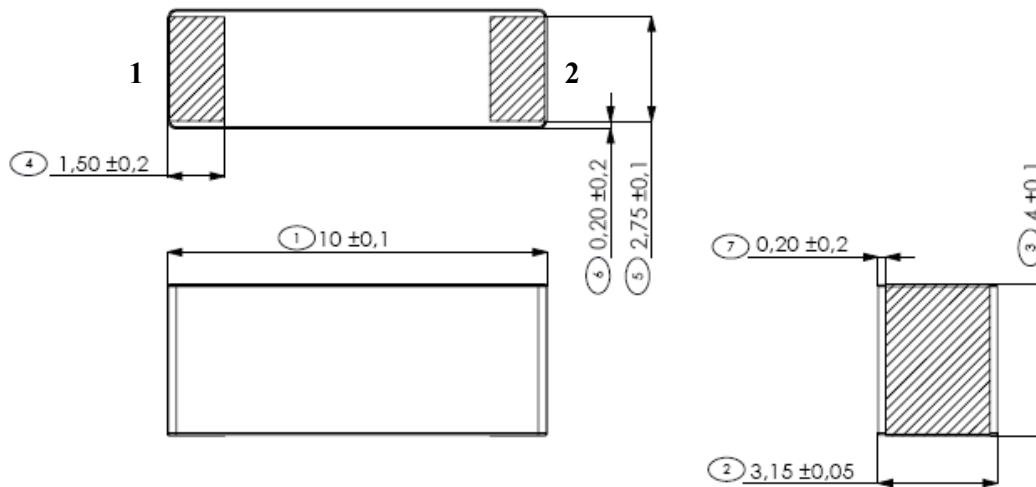
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Ground cleared under antenna, clearance area **11.50 mm x 7 mm**

Terminal Configuration and antenna dimensions

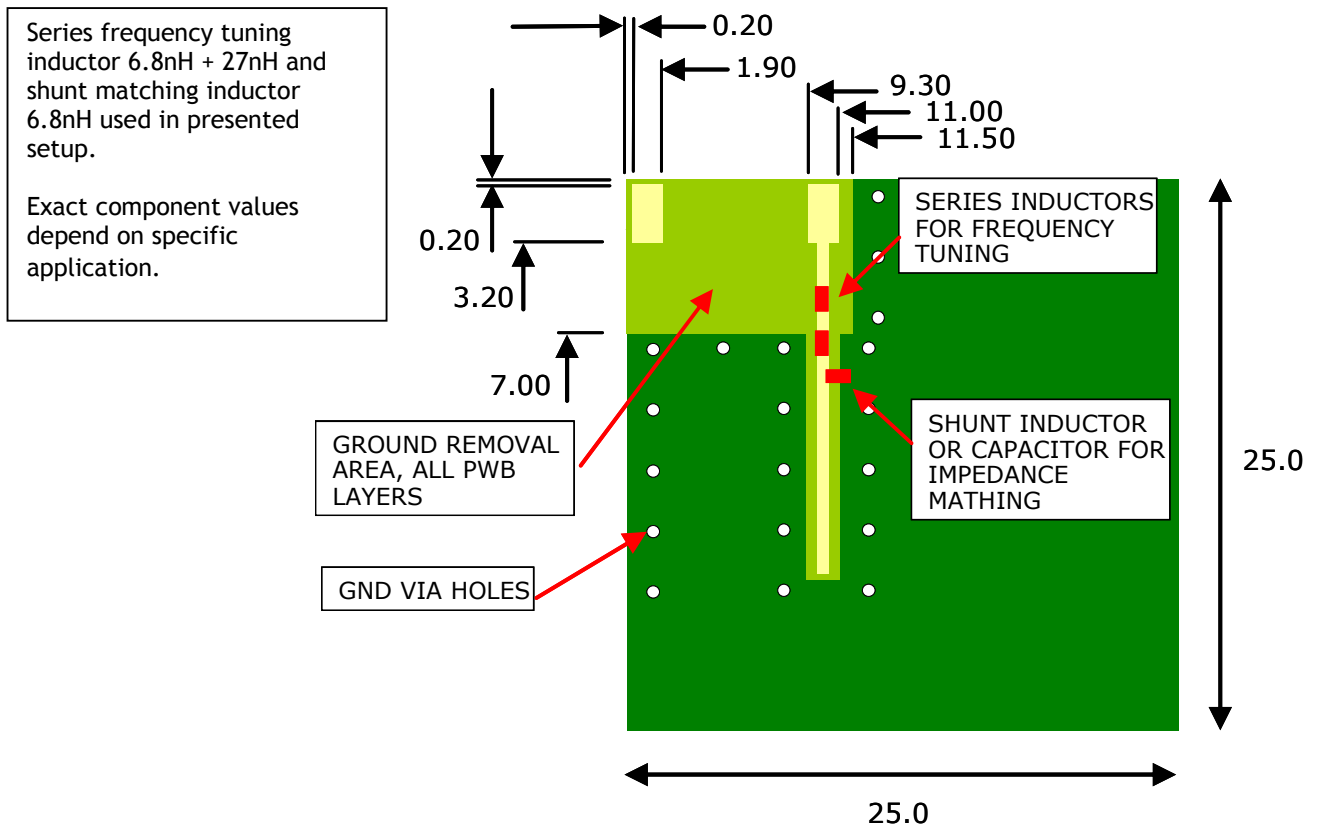


No.	Terminal Name	Terminal Dimensions
1	Feed	1.5 x 2.75 mm
2	Support pad	1.5 x 2.75 mm
Antenna is symmetrical and orientation on footprint can be rotated 180 degrees without change in performance		

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Recommended test board layout for electrical characteristic measurement, test board outline size 25 x 25mm



Feed line should be designed to match 50 Ω characteristic impedance, depending on PWB material and thickness.

Matching and tuning component values depend on application and surrounding mechanics / materials

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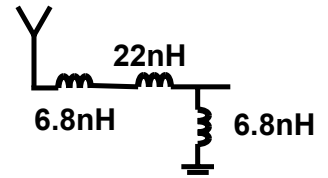
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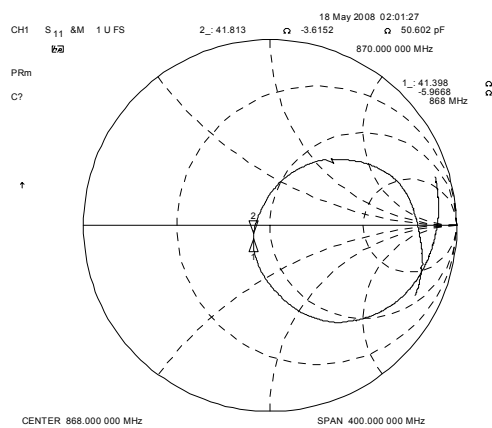
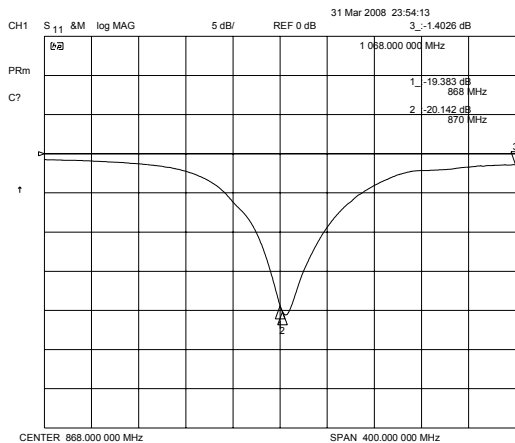
Ground cleared under antenna, clearance area **11.50 mm x 7 mm**



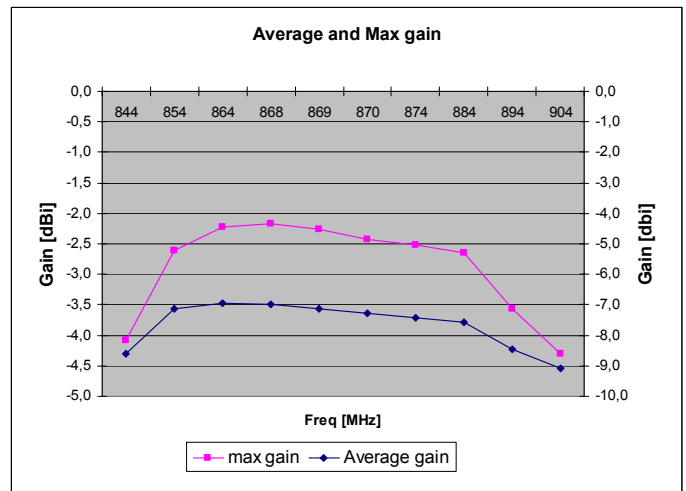
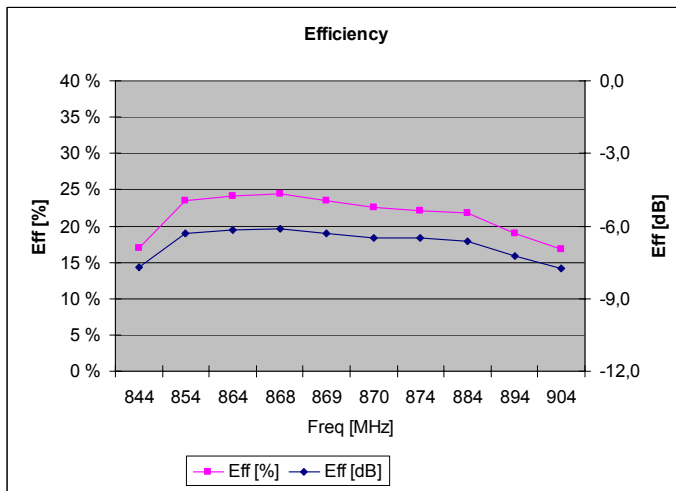
868 MHz Typical Electrical Characteristics (T=25 °C)

Measured on the 25x25mm test board with matching circuit, 6,8nH, 22nH series and 6.8nH shunt inductor

Typical Return Loss S11/ impedance



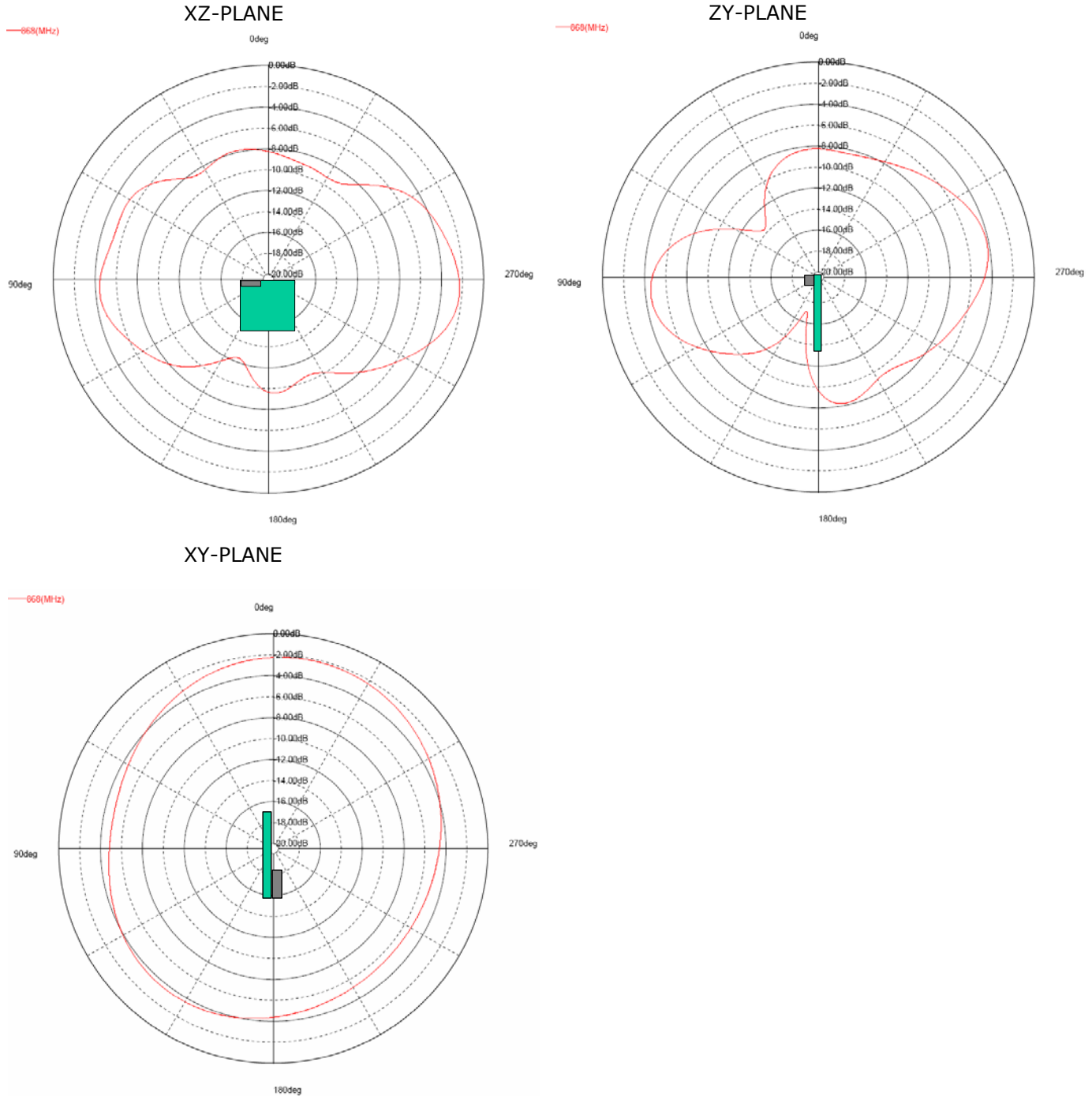
Free space 3D efficiency and gain



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868 MHz Typical Free Space Radiation Patterns

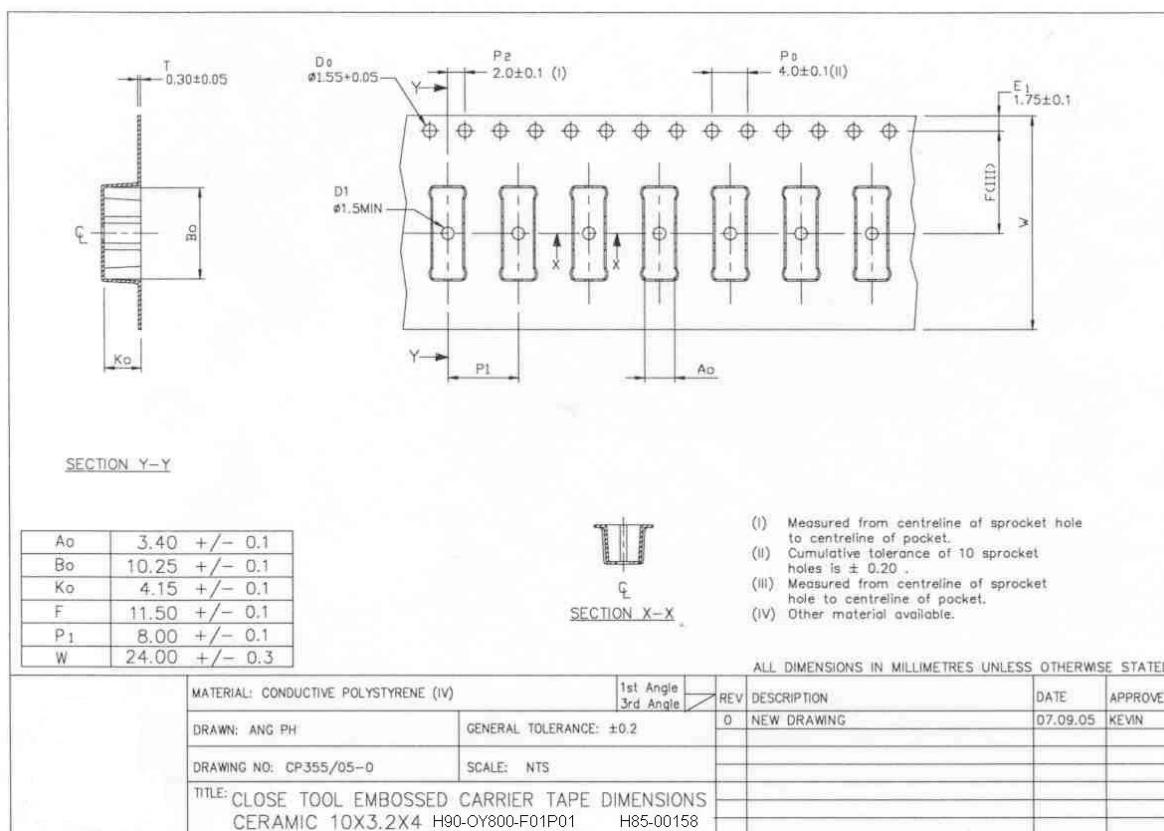


868MHz Ceramic Chip Antenna

Packing

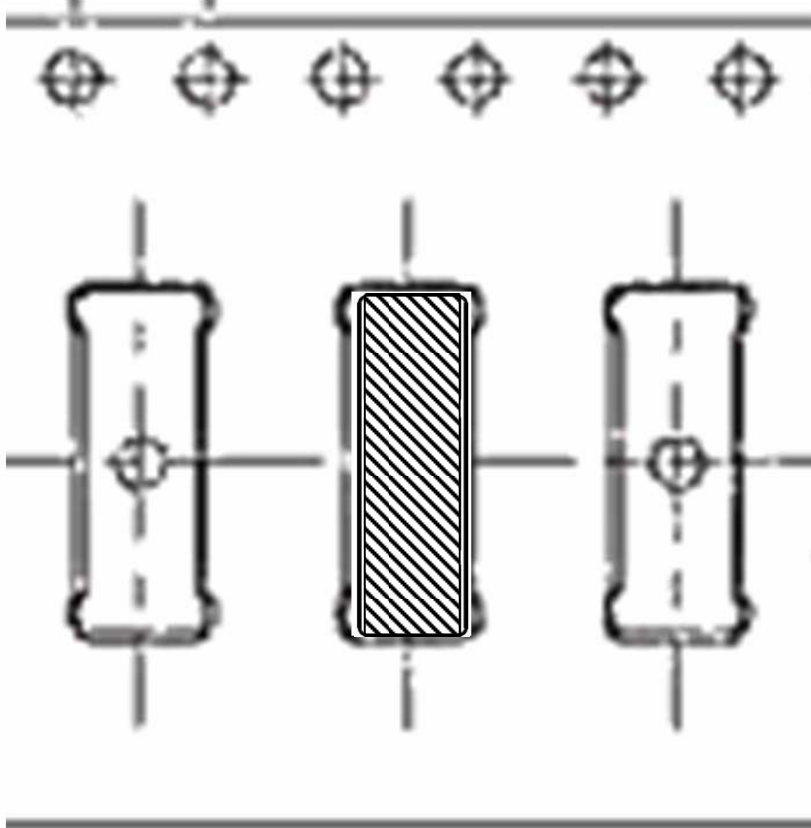
General

Tape and reel packing is used. Carrier tape, reel and box dimensions are presented in following pictures.

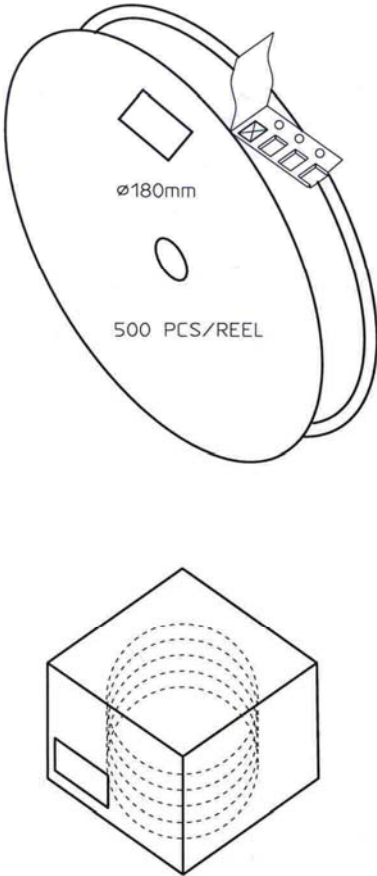


Block orientation

Antenna soldering pads facing down to the bottom of the carrier tape.



Packing form




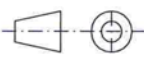
CARRIER TAPE H85-00158
width=24,00 depth=4.15
COVER TAPE H85-00159
width=21.20

LENGTH OF TAPE:

- Leader section: min 350 mm before component section
- Trailer section: min 40 mm after component section.

Empty part cavities at leader and trailer section of the tape must be sealed with top cover tape.

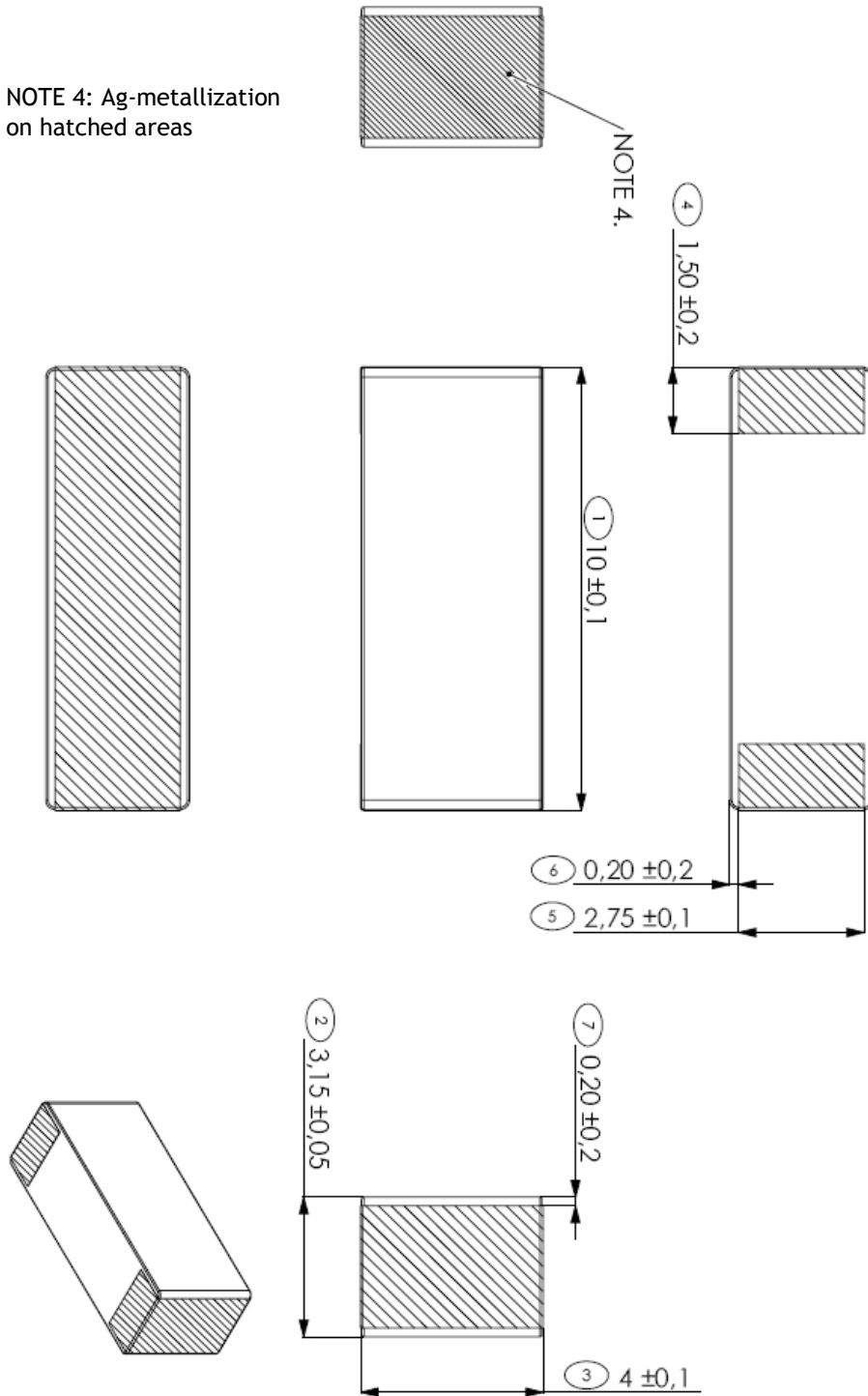
BOX H85-00128 (182x182x125)	1 pcs
- LABEL	1 pcs/BOX
REEL H85-00160 (D180, W28)	4 pcs
- REEL LABEL	1 pcs/REEL

MATERIAL			
HANDLINGS			
		RATIO	DRWN 160107 PeHa H
			DGNER G
			CHKD F
			APPRD E
PRODUCT H90-OY800-F01P01		APPRD BY	D
			C
			B
			A
DENOMINATION PACKING FORM		VERSION	MOD/DATE/NAME

868MHz Ceramic Chip Antenna

Mechanical Outline

NOTE 4: Ag-metallization on hatched areas



For More Information, please contact:

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