Pulse | LARSEN Antennas
A YAGEO Company

TECHNICAL DATA SHEET

Description : 3216 UWB 6.5-8GHz Chip Antenna

PART NUMBER : ANT3216LL02R6580A

Features:

- Size : 3.2x1.6x1.2 mm
- Omni-directional Radiation
- Tape & reel automatic mounting
- Reflow process compatible
- RoHS compliant
- AEC-Q200 Qualified

Applications:

- Smart tag
- Indoor navigation
- Access management
- RTLS B2B
- UWB group Channel 5 (6.5 GHz) to Channel 10 (8.5 GHz)

ELECTRICAL SPECIFICATIONS

Working Frequency	6200 ~ 8500 MHz
Bandwidth	2000 MHz
Return Loss	10 dB (Min.)
Polarization	Linear
Gain	4.1 dBi ~ 7.3 dBi
Impedance	50 Ω
Operating Temperature	-40 ~ 125 ℃
Maximum Power	1 W
Termination	Ni / Sn (Environmentally-Friendly Leadless)
Resistance to Soldering Heats	260℃ , 10sec.

NOTE
1. The specification is defined on Pulse evaluation board

RoHS COMPLIANT

Pulse Worldwide Headquarters
15255 Innovation Drive #100
San Diego, CA 92128
USA
Tel:1-858-674-8100

Pulse/Larsen Antennas
18110 SE 34th St Bldg 2 Suite 250
Vancouver, WA 98683
USA
Tel: 1-360-944-7551

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Pulse GmbH & Do, KG
Zeppelinstrasse 15
Herrenberg, Germany
Tel: 49 7032 7806 0

Pulse (Suzhou) Wireless Products Co, Inc.
99 Huo Ju Road(#29 Bldg,4th Phase
Suzhou New District
Jiangsu Province, Suzhou 215009 PR China
Tel: 86 512 6807 9998

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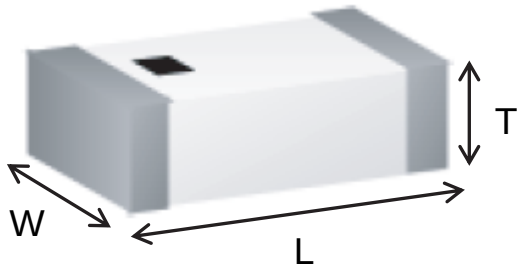
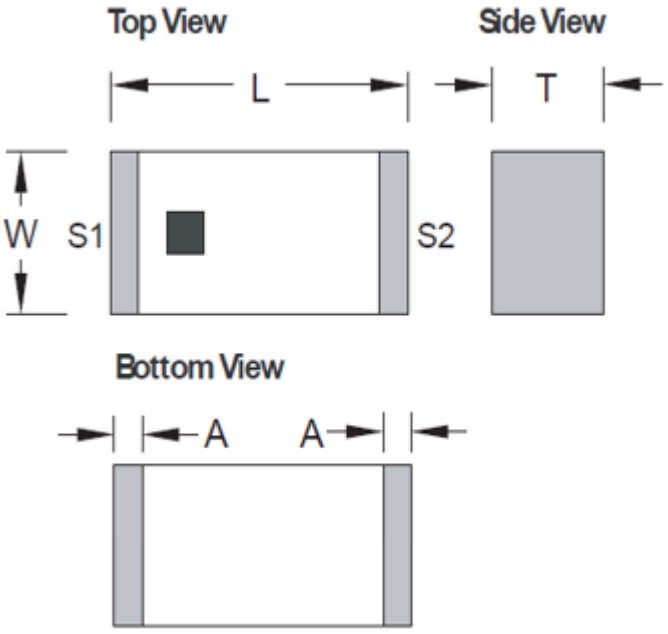
MECHANICAL DRAWING





	Dimension
L (mm)	3.20 ±0.20
W (mm)	1.60 ±0.15
T (mm)	1.20 ±0.15
A (mm)	0.40 ±0.25

Terminal name	Function
S1	Feeding Point
S2	Soldering Point

Netweigh/pcs(g) : 0.016

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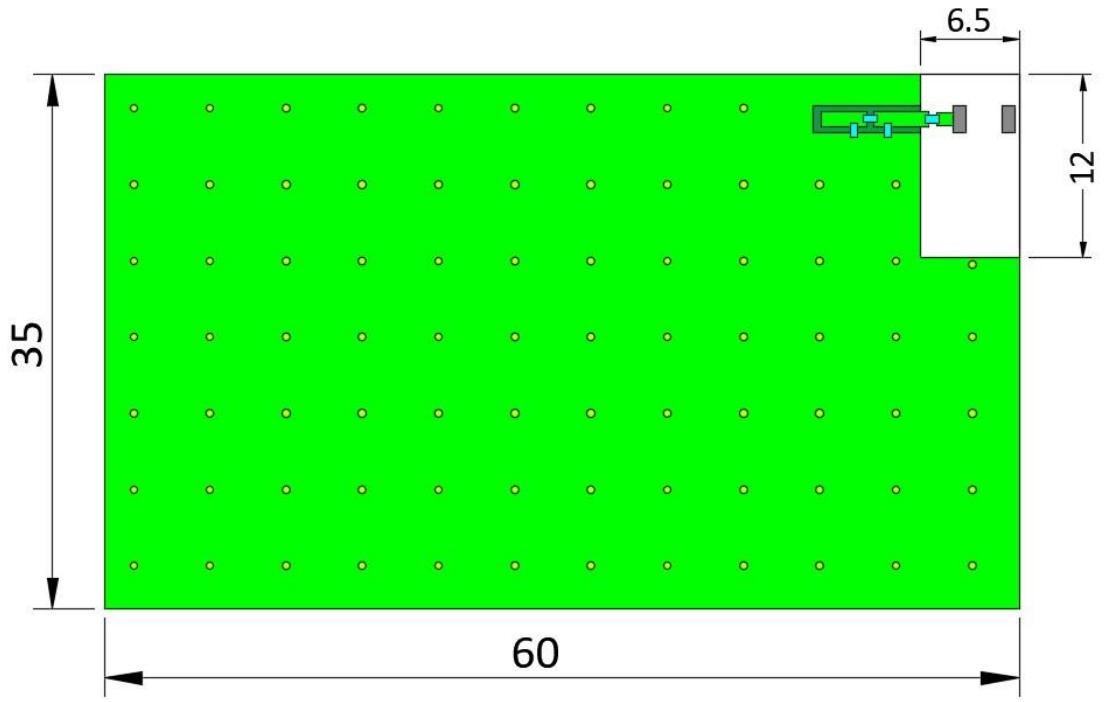
REFERENCE DESIGN OF EVALUATION BOARD



Dimension of evaluation board (60x35mm)

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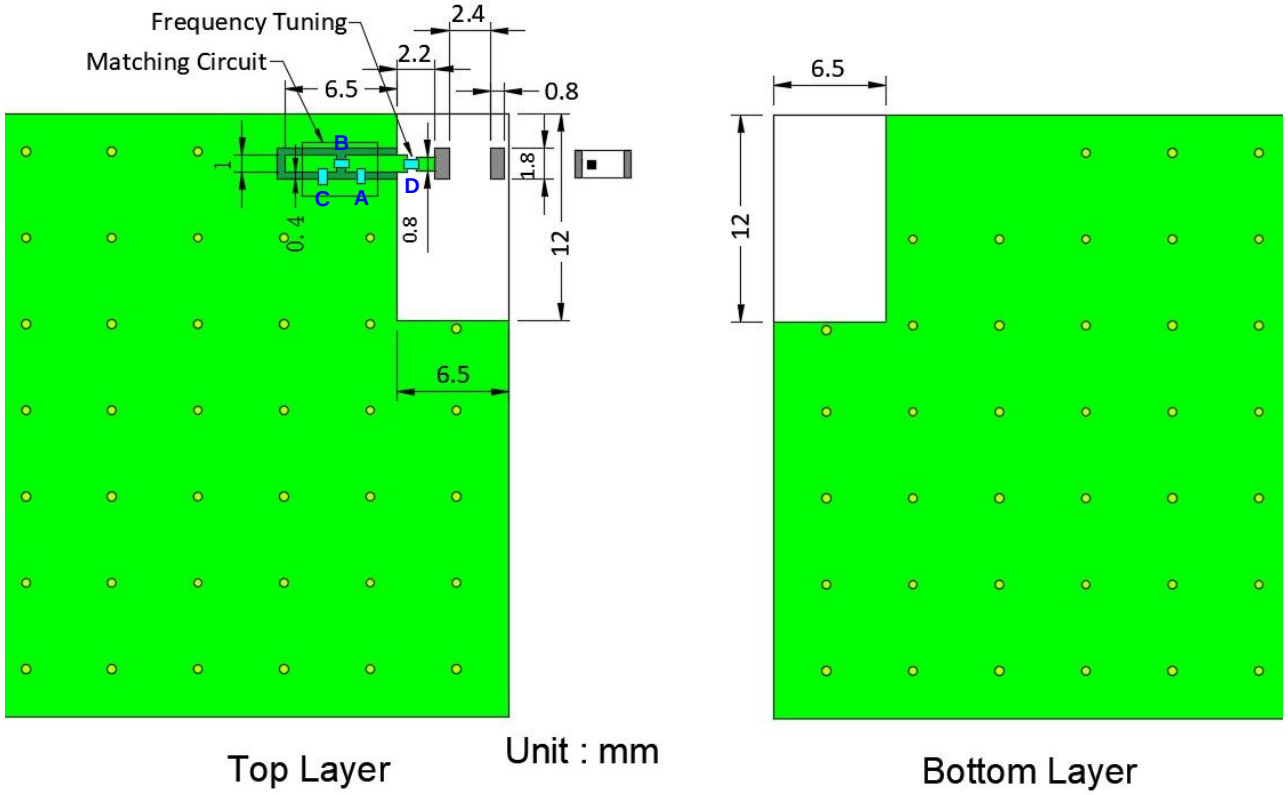
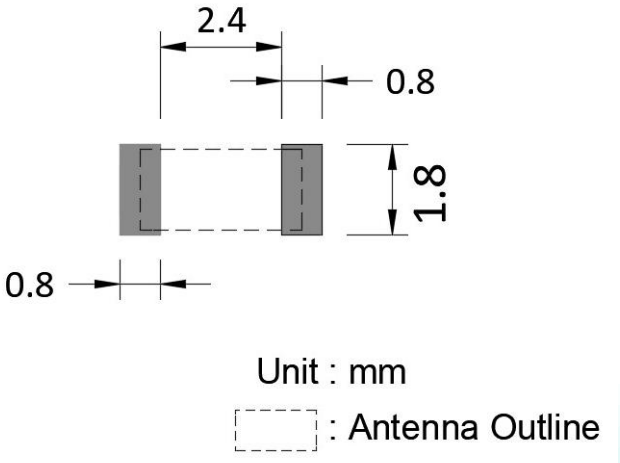
REFERENCE DESIGN OF EVALUATION BOARD



Application and Clearance (12x6.5mm)



Footprint

Description : 3216 UWB 6.5-8GHz Chip Antenna

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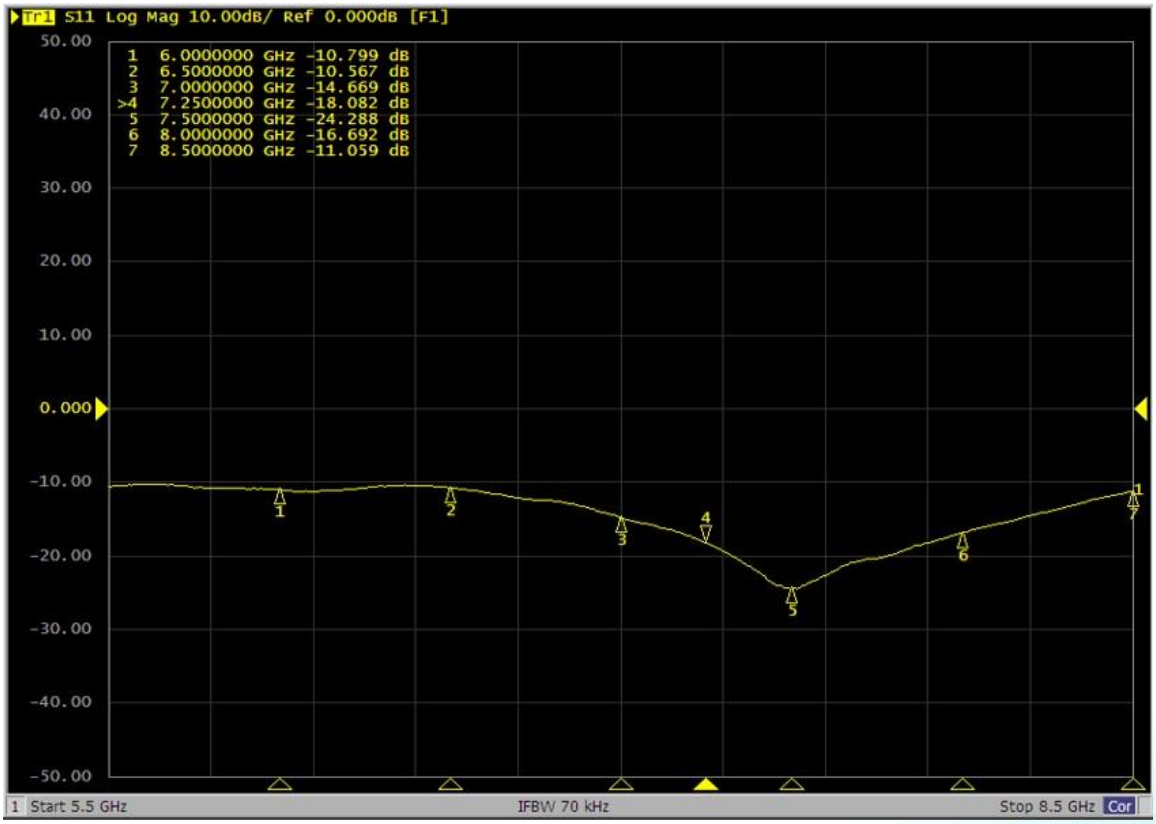
ELECTRICAL PERFORMANCES

Component		Brand	Value	PN
A	Ind. _0402	TDK	1.5 nH	MLG1005S1N5ST
B	Ind. _0402	TDK	1.0 nH	MLG1005S1N0ST
C	Open			
D	Res. _0402		0 Ω	

Matching component values (The values are for reference only.)



Return loss

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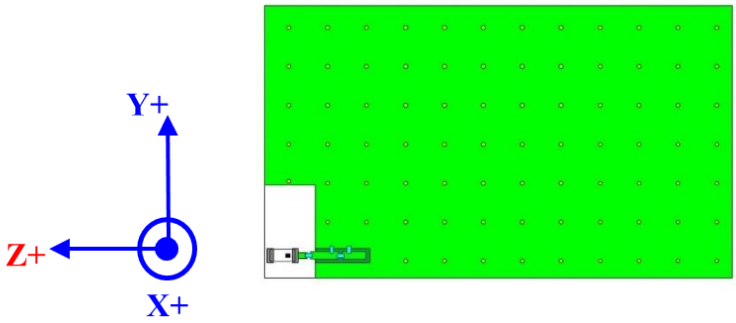
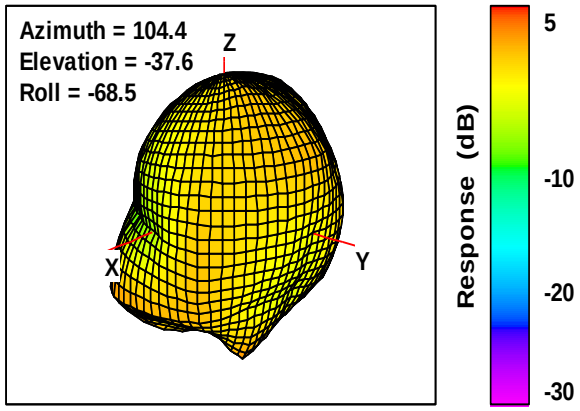
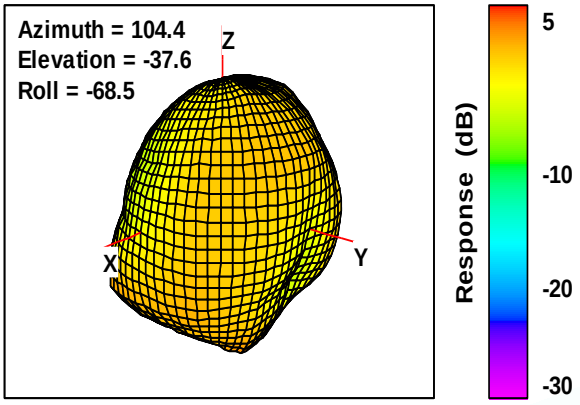
RADIATION PATTERN



Evaluation board and XYZ direction



Frequency：6200 MHz
Max. Gain : 4.1 dBi
Efficiency：83.5 %



Frequency：6500 MHz
Max. Gain : 4.4 dBi
Efficiency：80.3 %

Radiation pattern

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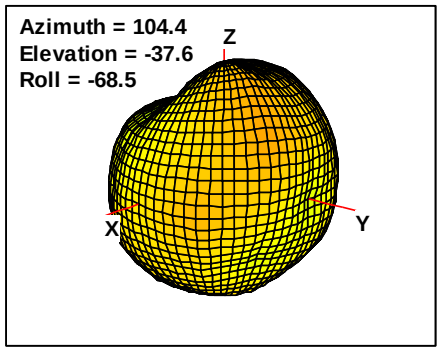
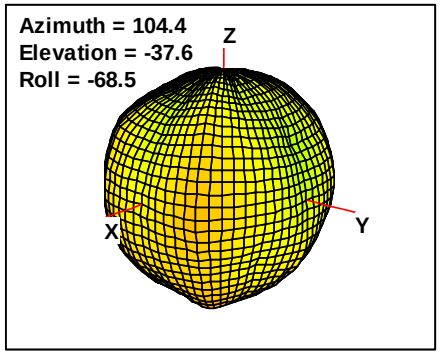
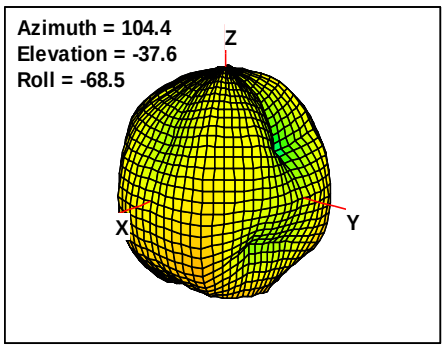
RADIATION PATTERN



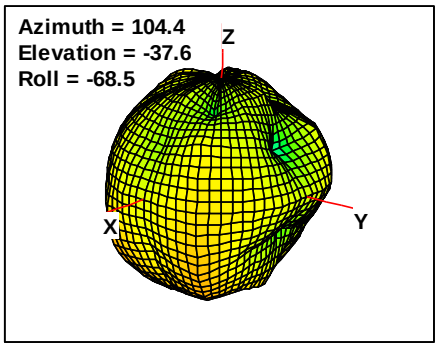
Frequency：7200 MHz
Max. Gain : 7.3 dBi
Efficiency：87.1 %



Frequency：8000 MHz
Max. Gain : 6.9 dBi
Efficiency：73.7 %



Frequency：8200 MHz
Max. Gain : 5.5 dBi
Efficiency：72.8 %



Frequency：8500 MHz
Max. Gain : 4.4 dBi
Efficiency：69.0 %

Radiation pattern

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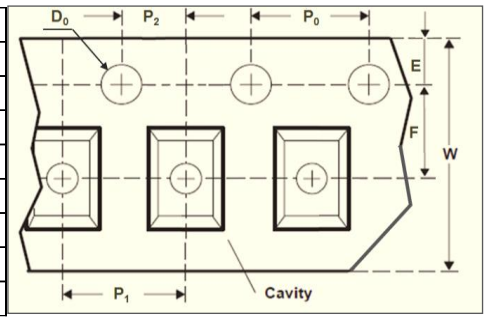
Tape & Reel Configurations

Serial no	Checking note	Index
1	Sprocket hole	Do
2	Distance sprocket hole to sprocket hole	Po
3	Distance pocket to pocket	P1
4	Distance sprocket hole/pocket	P2
5	Tape width	W
6	Distance sprocket hole to outside	E
7	Distance sprocket hole to pocket	F
8	Reel Diameter	R



Product Size Code	Product Size (mm)	Tape & Reel Configurations								
		Q'ty (Kpcs)	D0 (mm)	P0 (mm)	P1 (mm)	P2 (mm)	W (mm)	E (mm)	F (mm)	R (mm)
0605	0.6 x 0.5	10	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	2 (+0.05 / -0.05)	2 (+0.1 / -0.1)	8 (+0.3 / -0.1)	1.75 (+0.1 / -0.1)	3.5 (+0.05 / -0.05)	180±2
1005	1.0 x 0.5	10	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	2 (+0.05 / -0.05)	2 (+0.1 / -0.1)	8 (+0.3 / -0.1)	1.75 (+0.1 / -0.1)	3.5 (+0.05 / -0.05)	180±2
1608	1.6 x 0.8	4	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	4 (+0.1 / -0.1)	2 (+0.1 / -0.1)	8 (+0.3 / -0.1)	1.75 (+0.1 / -0.1)	3.5 (+0.05 / -0.05)	180±2
2012	2.0 x 1.2	4	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	4 (+0.1 / -0.1)	2 (+0.1 / -0.1)	8 (+0.3 / -0.1)	1.75 (+0.1 / -0.1)	3.5 (+0.05 / -0.05)	180±2
2520	2.5 x 2.0	3	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	4 (+0.1 / -0.1)	2 (+0.1 / -0.1)	8 (+0.3 / -0.1)	1.75 (+0.1 / -0.1)	3.5 (+0.05 / -0.05)	180±2
3216	3.2 x 1.6	3	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	4 (+0.1 / -0.1)	2 (+0.1 / -0.1)	8 (+0.3 / -0.1)	1.75 (+0.1 / -0.1)	3.5 (+0.05 / -0.05)	180±2
5010	5.0 x 1.0	3	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	4 (+0.1 / -0.1)	2 (+0.1 / -0.1)	16 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	7.5 (+0.1 / -0.1)	180±2
5320	5.3 x 2.0	2	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	4 (+0.1 / -0.1)	2 (+0.1 / -0.1)	12 (+0.3 / -0.1)	1.75 (+0.1 / -0.1)	5.5 (+0.1 / -0.1)	180±2
6020	6.0 x 2.0	2	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	4 (+0.1 / -0.1)	2 (+0.1 / -0.1)	12 (+0.3 / -0.1)	1.75 (+0.1 / -0.1)	5.5 (+0.1 / -0.1)	180±2
6230	6.2 x 3.0	2	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	4 (+0.1 / -0.1)	2 (+0.1 / -0.1)	12 (+0.3 / -0.1)	1.75 (+0.1 / -0.1)	5.5 (+0.1 / -0.1)	180±2
7020	7.0 x 2.0	2	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	4 (+0.1 / -0.1)	2 (+0.1 / -0.1)	16 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	7.5 (+0.1 / -0.1)	180±2
7836	7.8 x 3.6	1	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	8 (+0.1 / -0.1)	2 (+0.1 / -0.1)	16 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	7.5 (+0.1 / -0.1)	180±2
8010	8.0 x 1.0	3	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	4 (+0.1 / -0.1)	2 (+0.1 / -0.1)	16 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	7.5 (+0.1 / -0.1)	180±2
8868	8.8 x 6.8	1	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	12 (+0.1 / -0.1)	2 (+0.1 / -0.1)	16 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	7.5 (+0.1 / -0.1)	180±2
9520	9.5 x 2.0	2	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	4 (+0.1 / -0.1)	2 (+0.1 / -0.1)	16 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	7.5 (+0.1 / -0.1)	180±2
1003	10 x 03	1	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	8 (+0.1 / -0.1)	2 (+0.1 / -0.1)	16 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	7.5 (+0.1 / -0.1)	180±2
1204	12 x 04	1	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	8 (+0.1 / -0.1)	2 (+0.1 / -0.1)	24 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	11.5 (+0.1 / -0.1)	180±2
1212	12 x 12	0.5	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	16 (+0.1 / -0.1)	2 (+0.1 / -0.1)	24 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	11.5 (+0.1 / -0.1)	330±2
1515	15 x15	0.4	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	20 (+0.1 / -0.1)	2 (+0.1 / -0.1)	32 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	14.2 (+0.1 / -0.1)	330±2
1818	18 x 18	0.4	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	24 (+0.1 / -0.1)	2 (+0.1 / -0.1)	32 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	14.2 (+0.1 / -0.1)	330±2
1903	19 x 03	1	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	8 (+0.1 / -0.1)	2 (+0.1 / -0.1)	32 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	14.2 (+0.1 / -0.1)	330±2
2405	24 x 05	2	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	8 (+0.1 / -0.1)	2 (+0.1 / -0.1)	44 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	20.2 (+0.1 / -0.1)	330±2
2525	25 x 25	0.25	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	32 (+0.1 / -0.1)	2 (+0.1 / -0.1)	44 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	20.2 (+0.15 / -0.15)	330±2
3807	38 x 07	1	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	12 (+0.1 / -0.1)	2 (+0.15 / -0.15)	56 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	26.2 (+0.15 / -0.15)	330±2
4005	40 x 05	0.6	1.55 (+0.1 / -0.1)	4 (+0.1 / -0.1)	12 (+0.1 / -0.1)	2 (+0.15 / -0.15)	56 (+0.3 / -0.3)	1.75 (+0.1 / -0.1)	26.2 (+0.15 / -0.15)	330±2

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REVISION HISTORY

Revision	Date	Description
Preliminary 1	Jan. 2025	- New issue.

RoHS COMPLIANT