承　　认　　书

SPECIFICATION FOR APPROVAL

客户名称 Customer Name	深圳市巨诺电子有限公司		
客户项目名 Customer Project Name	SURL502006T79	盛邦尔料号 Surbaner P/N	120901-00057
客户编码 Customer P/N	/	工作频段 Working Band	2400-2500MHz
产品描述 Product description	5.0x2.0x0.6mm		
版本号 Version	V01		
设计人信息/Designer Information			
射频工程师 RF Engineer	/	研发主管 R&D Diretor	朱浩奎
结构工程师 ME Engineer	张宇龙		

盛邦尔审批/Surbaner Approval				客户批准/Customer Approval	
	制作 Prepared By	审核 Checked By	批准 Approval By	审核 Checked By	批准 Approval By
签章 Signature	王海华林				
日期 Date	2025.02.13				

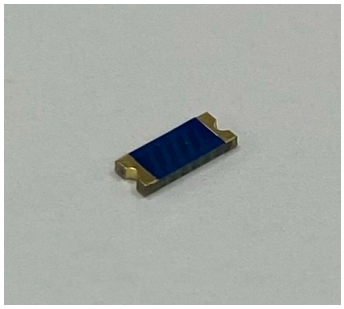
修订履历/Change Log				
版本 Version	修订内容 Change Description	责任人 Person in Charge	核准 Approval By	日期 Date

地址：深圳市宝安区西乡街道鹤洲社区恒丰工业城 B25 栋 2 楼　TEL：0755-82790675　FAX：0755-82809726
Address: 2/F, Building B25, Hengfeng industrial city, Hezhou community, Xixiang Street, Baoan District, Shenzhen City.

2.4GHz Chip Antenna: SURL502006T79

Application:

WLAN, 802.11b/g, Bluetooth, etc…



Features

SMD, high reliability, ultra Impact, Omni-directional…

Part number

SURL 502006 T79 R 245

(1) (2) (3) (4) (5)

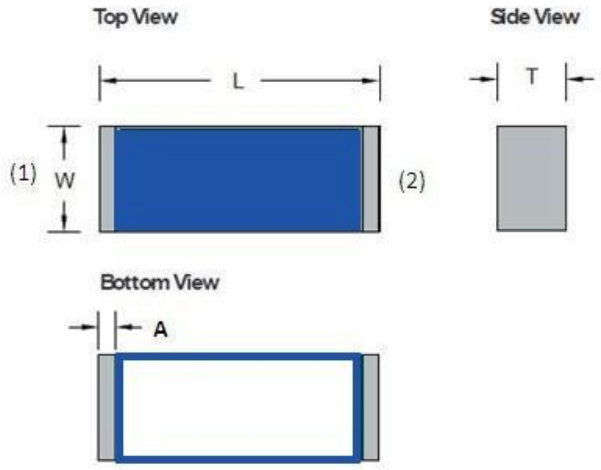
(1)Product Model	SURL
(2) Size Code	5.0x2.0x0.6mm
(3) Type Code	T79
(4) Packing	Tape and reel
(5) Frequency	2.45GHz

Electrical Specification

Working Frequency Range	2400 ~2484 MHz
Peak Gain	3.5dBi (Typ.)
Impedance	50 Ohm
Return loss	10 dB (Min)
Polarization	Linear
Azimuth Beamwidth	Omni-directional
Operation Temperature(℃)	-40 ~85℃

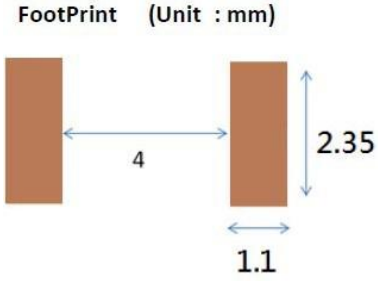
The specification is defined on EVB.

Dimension and Terminal Configuration



Dimension (mm)	
L	5.0 +-0.20
W	2.0+- 0.20
T	0.60+-0.20
A	0.20+-0.20

No.	Terminal Name
1	Feeding
2	Soldering



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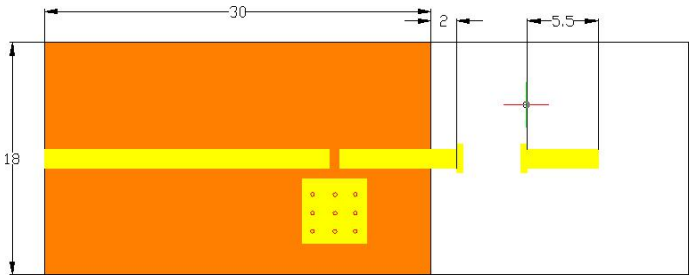
2.4GHz 2.45HHz Chip Antenna: SURL502006T79

Evaluation Board Reference

PCB Dimension & Antenna Layout Reference

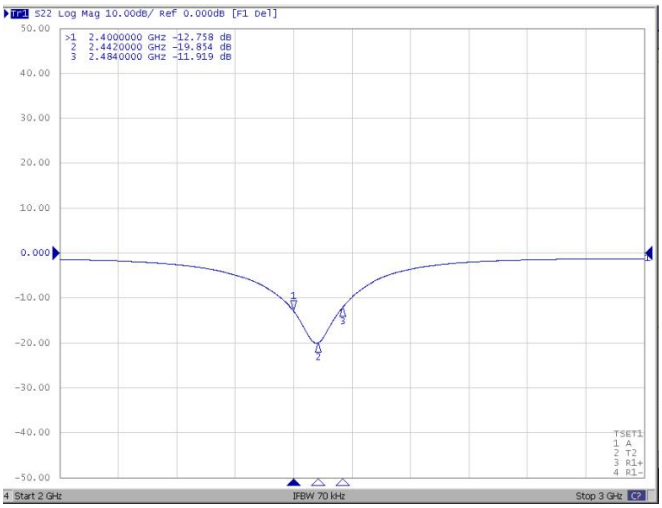


unit :mm

Electrical Characteristics

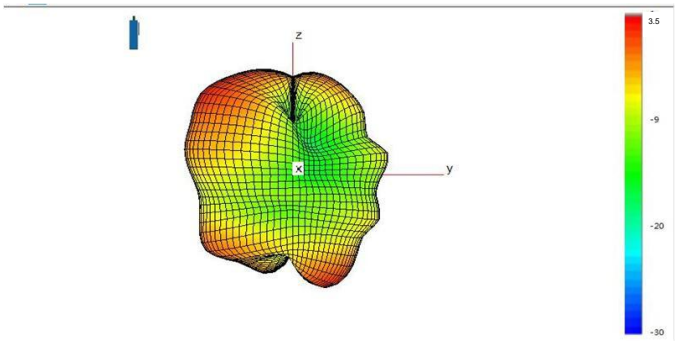
Return Loss & Radiation

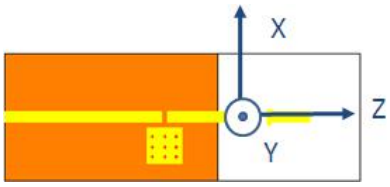
Return Loss



Frequency (MHz)	S11 (dB)
2400	-12.8
2442	-19.8
2484	-11.9

Radiation





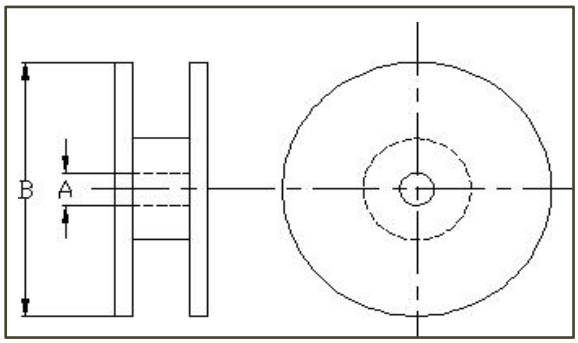
2.45GHz

Frequency	2445MHz
Peak gain	3.5dBi
Efficiency	80.2%

2.4GHz 2.45HHz Chip Antenna:SURL502006T79

Taping Specifications

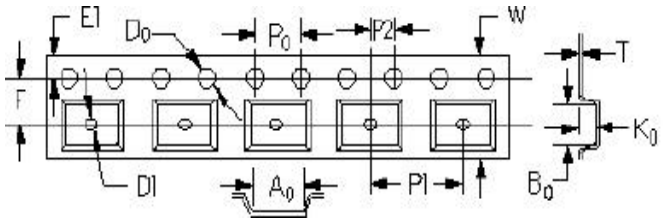
Reel



Checking note	Index	Spec (mm)
Internal diameter of reel	A	60.20 ±0.50
External diameter of reel	B	178 ±1.00

Quantity/per reel	3000 pcs
Tape material	Plastic (embossed)

Taping Blister Tape



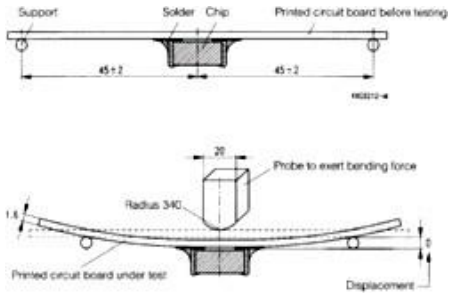
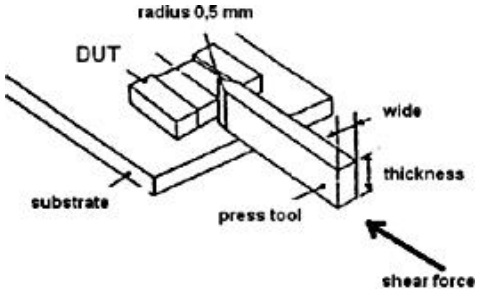
Checking note	Index	Spec (mm)
Sprocket hole	D0	1.50 +0.10/-0.00
Distance sprocket hole to outside	E1	1.75 ± 0.10
Distance sprocket hole to pocket	F	5.50 ± 0.05
Distance sprocket hole to sprocket hole	P0	4.00 ± 0.10
Distance pocket to pocket	P1	4.00 ± 0.10
Distance sprocket hole to pocket	P2	2.00 ± 0.05
Tape width	W	12.00 +0.30/-0.10
Pocket width nominal clearance	A0	2.28 ±0.13
Pocket length nominal clearance	B0	5.70 ±0.13
Pocket depth minimum clearance	K0	1.58 ±0.10
Thickness of tape	T	0.23 ±0.02

2.4GHz 2.45HHz Chip Antenna: SURL502006T79

Reliability Table

Test Item	Procedure	Requirements Ceramic Type	Remark (Reference)
Electrical Characterization		Fulfill the electrical specification	User Spec.
Thermal Shock	1. Preconditioning: 50 ± 10℃ / 1 hr , then keep for 24 ± 1 hrs at room temp. 2. Initial measure: Spec: refer Initial spec. 3. Rapid change of temperature test: -30℃ to +85℃; 100 cycles; 15 minutes at Lower category temperature; 15 minutes at Upper category temperature.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 107
Temperature Cycling	1. Initial measure: Spec: refer Initial spec. 2. 100 Cycles (-30℃ to +85℃), Soak Mode=1 (2 Cycle/hours). 3. Measurement at 24 ± 2Hours after test condition.	No Visible Damage. Fulfill the electrical specification.	JESD22 JA104
High Temperature Exposure	1. Initial measure: Spec: refer Initial spec. 2. Unpowered; 500hours @ T=+85℃. 3. Measurement at 24 ±2 hours after test.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 108
Low Temperature Storage	1. Initial measure: Spec: refer Initial spec. 2. Unpowered: 500hours @ T=-30℃. 3. Measurement at 24 ±2 hours after test.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 108
Solderability (SMD Bottom Side)	Dipping method: a. Temperature: 235 ±5°C b. Dipping time: 3 ±0.5s	The solder should cover over 95% of the critical area of bottom side.	IEC 60384-21/22 4.10
Soldering Heat Resistance (RSH)	Preheating temperature: 150 ±10°C. Preheating time: 1~2 min. Solder temperature: 260 ± 5°C. Dipping time: 5 ±0.5s	No Visible Damage.	IEC 60384-21/22 4.10
Vibration	5g's for 20 min., 12 cycles each of 3 orientations Note: Use 8"X5" PCB .031" thick 7 secure points on, one long side and 2 secure points at corners of opposite sides. Parts mounted within 2" from any secure point. Test from 10-2000 Hz.	No Visible Damage.	MIL-STD-202 Method 204
Mechanical Shock	Three shocks in each direction shall be applied along the three mutually perpendicular axes of the test specimen (18 shocks) Peak value: 1,500g's Duration: 0.5ms Velocity change: 15.4 ft/s Waveform: Half-sine	No Visible Damage.	MIL-STD-202 Method 213
Humidity Bias	1. Humidity: 85% R.H., Temperature: 85 ± 2 °C. 2. Time: 500 ± 24 hours. 3. Measurement at 24 ± 2hrs after test condition.	No Visible Damage. Fulfill the electrical specification.	MIL-STD-202 Method 106

2.4GHz 2.45HHz Chip Antenna: SURL502006T79

Board Flex (SMD)	1. Mounting method: IR-Reflow. PCB Size (L:100 × W:40 ×T:1.6mm) 2.Apply the load in direction of the arrow until bending reaches 2 mm. 	No Visible Damage.	AEC-Q200 005
Adhesion	Force of 1.8Kg for 60 seconds. 	No Visible Damage Magnification of 20X or greater may be employed for inspection of the mechanical integrity of the device body terminals and body/terminal junction.	AEC-Q200 006
Physical Dimension	Any applicable method using x10 magnification, micrometers, calipers, gauges, contour projectors, or other measuring equipment, capable of determining the actual specimen dimensions.	In accordance with specification.	JESD22 JB100

Revision History

Revision	Date	Content
1	2019/7/20	New issue