

SMD CERAMIC ANTENNA

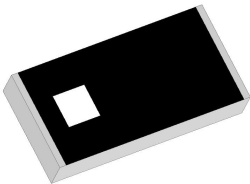
Data Sheet

KH-3216-7.2-31-A

For 6000-8500MHz
3.0x1.5mm [EIA3216]

Feature

- Light weight, compact
- Wide bandwidth, low cost
- Built-in antenna with high gain
- Operating Temp. : -40°C~+85°C



Application

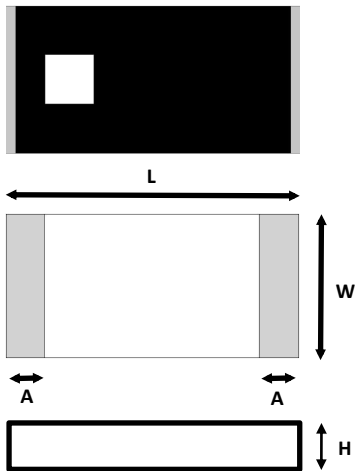
- Automotive sensors
- Precision surveying
- Smart home and entertainment systems
- Centimeter Level Positioning

Electrical Characteristics per line(TA=25°C)

Parameter	Specification	Units
Frequency Band	6000~8500	MHz
Polarization	Linear	
*Peak Gain	4.58	dBi
*Peak Efficiency	83.0%	%
Impedance	50	Ω

*Test condition: Test board size 50*40 mm;
Matching circuit: Pi matching circuit will be required

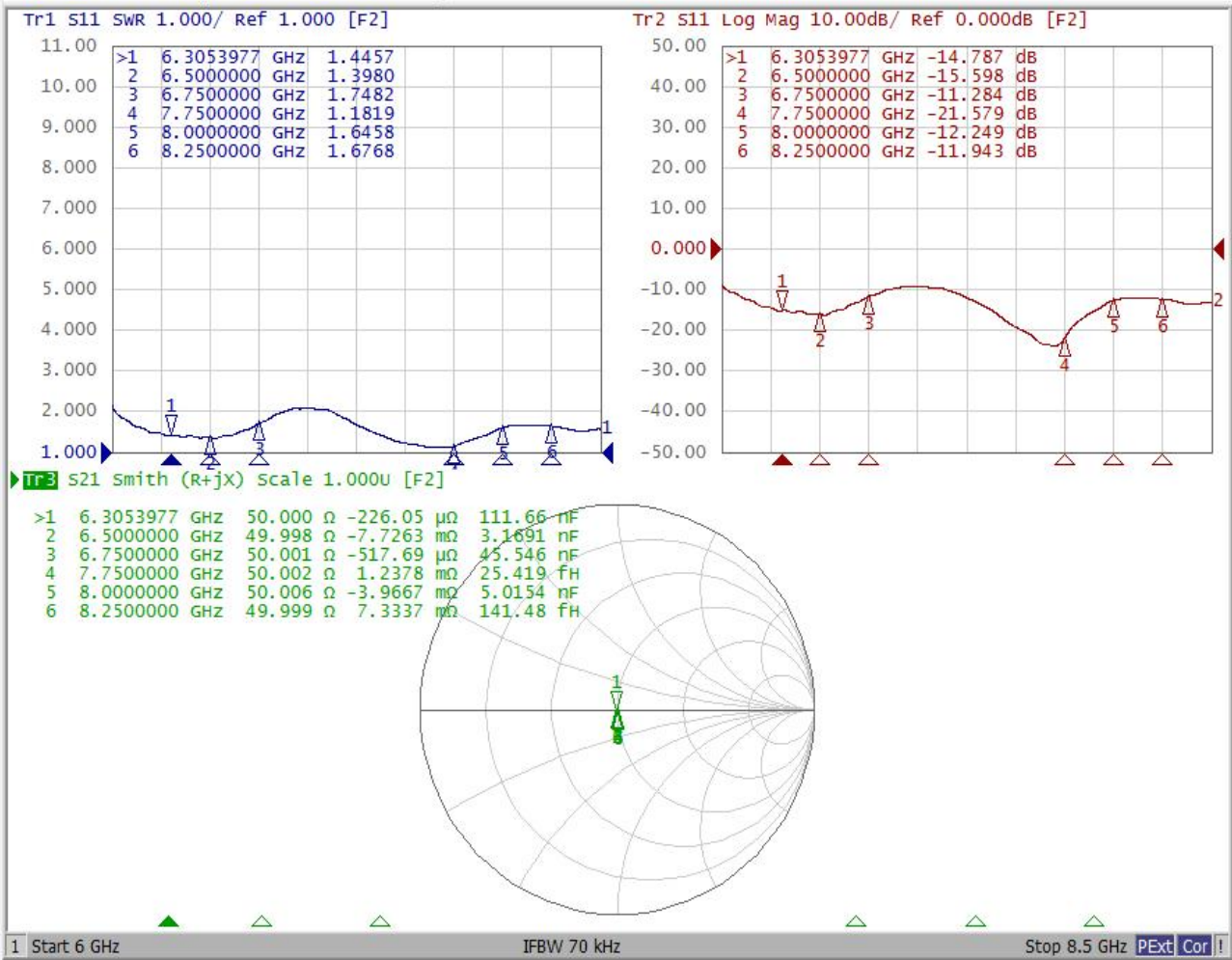
Product Dimension



Units:mm			
L	W	A	H
3.10±0.10	1.55±0.10	0.40±0.20	0.50±0.10

Typical Characteristics

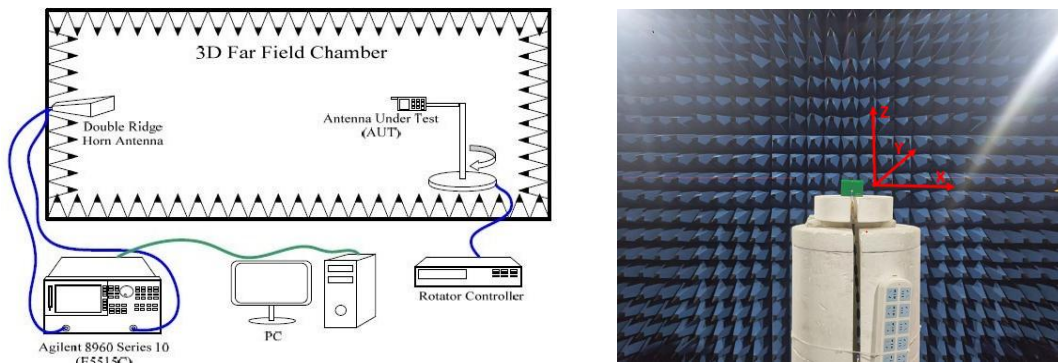
S parameter



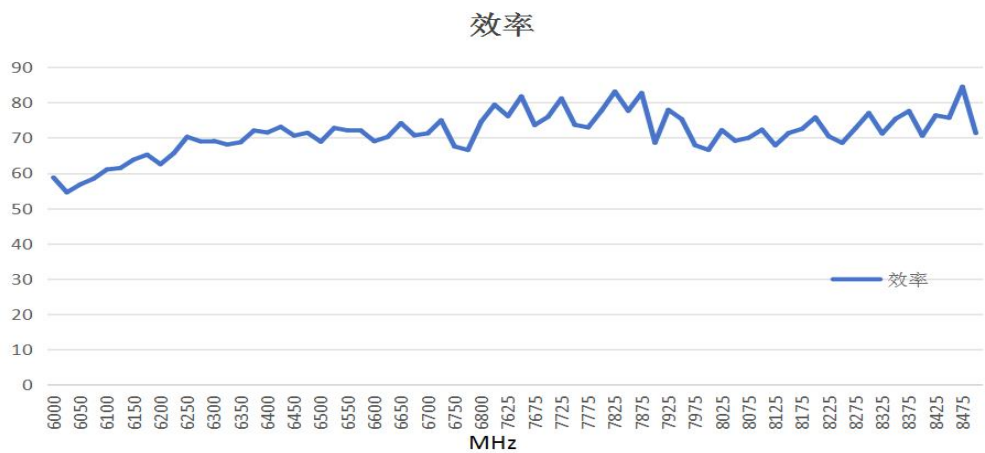
Radiation Pattern

The Gain pattern is measured in FAR-field chamber. DUT is placed on the support , a standard horn antenna and Vector Network Analyzer is used to collect data.

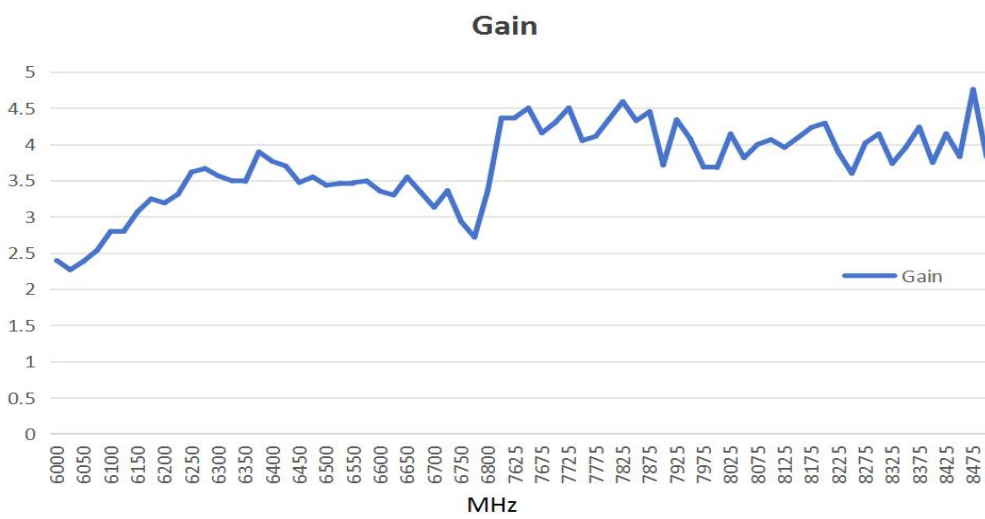
Fig.3 FAR-field Chamber



EFFICIENCY

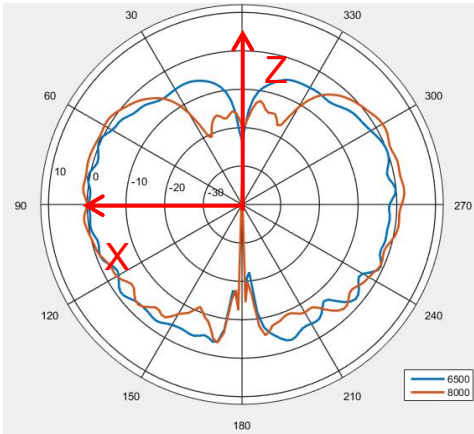


Gain

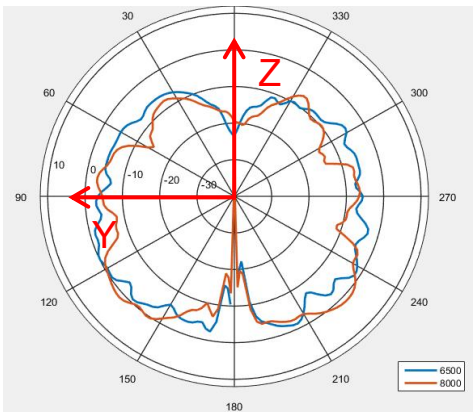


2D Gain Pattern

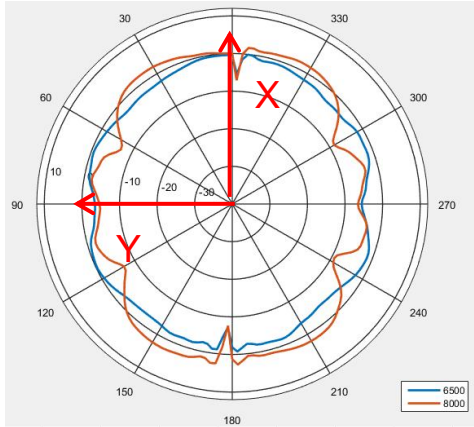
2D-Phi=0



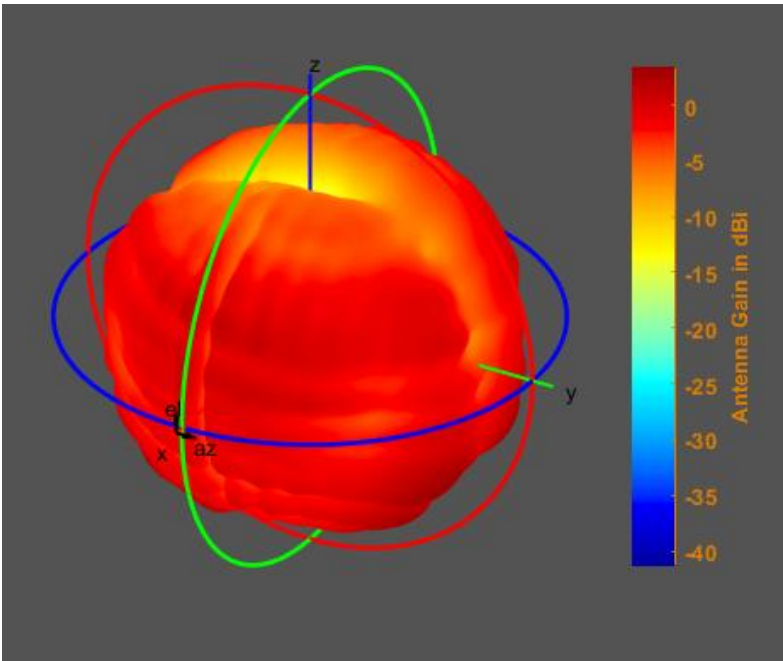
2D-phi=90



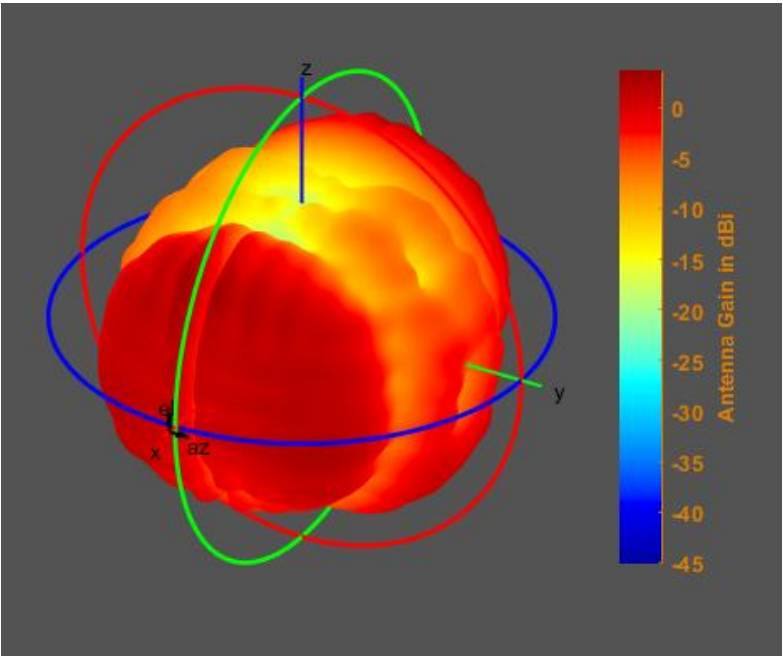
2D-theta=90



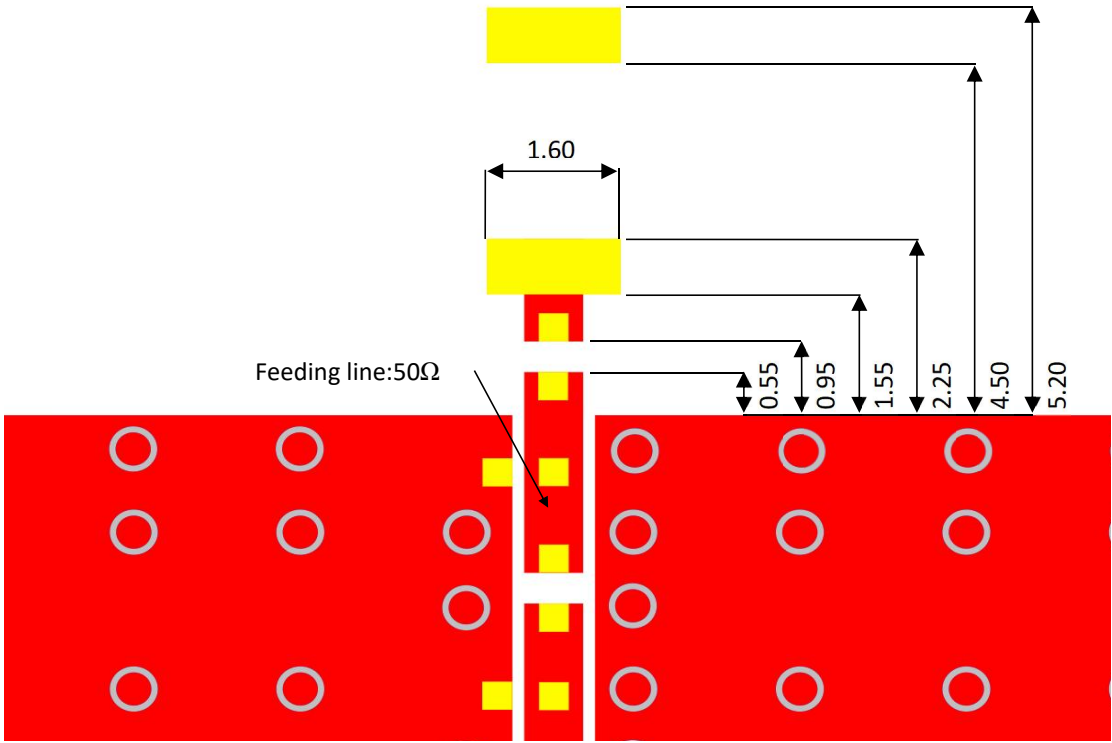
3D Gain Pattern (CH5)



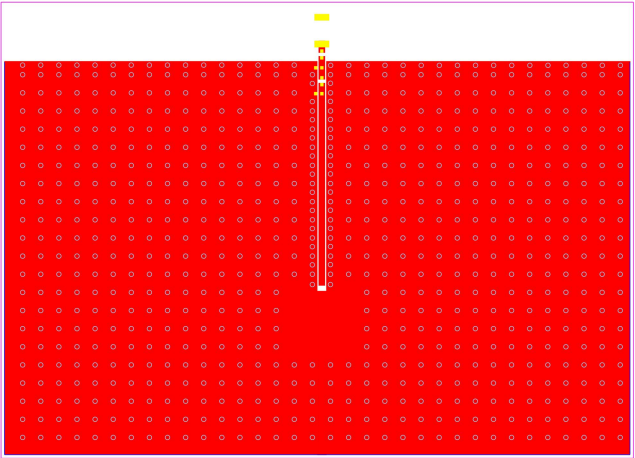
3D Gain Pattern (CH9)



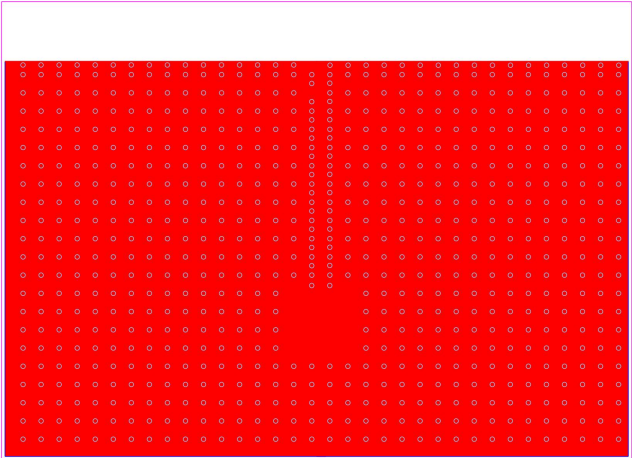
Evaluation Board



Mounting Considerations



Top Layout



Bottom Layout

Item	Condition	Specification
Thermal shock	1. 30±3 minutes at -40°C±5°C, 2. Convert to +105°C (5minutes) 3. 30±3 minutes at +105°C±5°C, 4. Convert to -40°C (5 minutes) 5. Total 100 continuous cycles	No apparent damage Fulfill the electrical spec. after test.
Humidity resistance	1. Humidity:85% R.H. 2. Temperature:85±5°C 3. Time:1000 hours.	No apparent damage Fulfill the electrical spec. after test.
High temperature resistance	No apparent damage Fulfill the electrical spec. after test.	1. Temperature: 150°C±5°C 2. Time: 1000 hours.
Low temperature resistance	1. Temperature: -40°C±5°C 2. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
Soldering heat resistance	1. Solder bath temperature : 260±5°C 2. Bathing time: 10±1 seconds	No apparent damage
Solderability	The dipped surface of the terminal shall be at least 95% covered with solder after dipped in solder bath of 245±5°C for 3±1 seconds.	No apparent damage

(2) Storage Condition

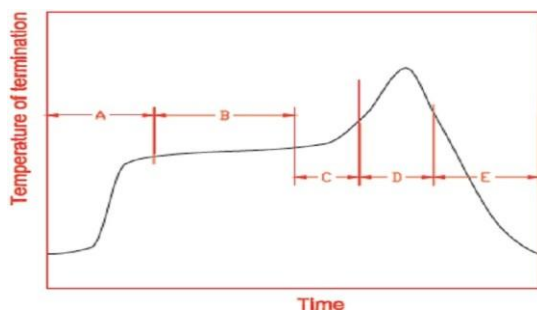
(a) At warehouse: The temperature should be within 0 ~ 30°C and humidity should be less than 60% RH. The product should be used within 1 year from the time of elivery

(b) On board: The temperature should be within -40~85°C and humidity should be less than 85% RH.

(3) Operating Temperature Range

-40°C to +85°C。 Operating temperature range : -40°C to +85°C.

Recommended Reflow Solder curve



A	1 st rising temperature	The normal to Preheating temperature	30s to 60s
B	Preheating	140°C to 160°C	60s to 120s
C	2 nd rising temperature	Preheating to 200°C	20s to 40s
D	Main heating	if 220°C	50s~60s
		if 230°C	40s~50s
		if 240°C	30s~40s
		if 250°C	20s~40s
		if 260°C	20s~40s
E	Regular cooling	200°C to 100°C	1°C/s ~ 4°C/s

*reference: J-STD-020C

(1) Soldering Gun Procedure

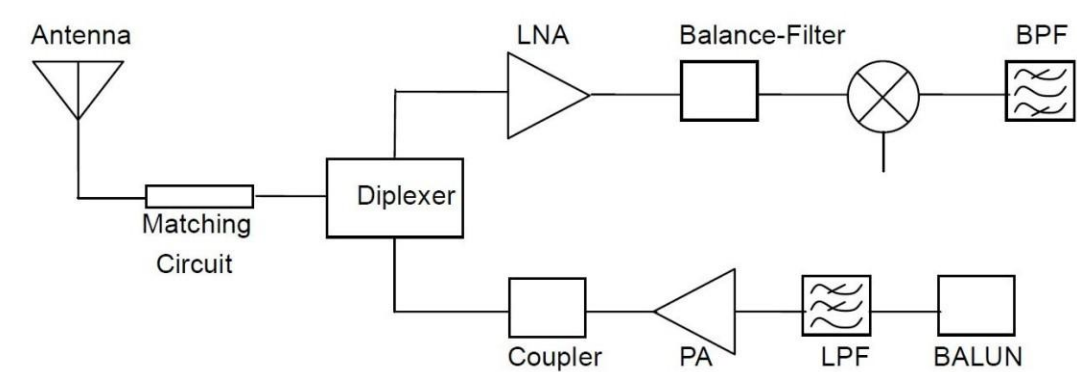
Note the follows, in case of using solder gun for replacement.

- (a) The tip temperature must be less than 350°C for the period within 3 seconds by using soldering gun under 30W.
- (b) The soldering gun tip shall not touch this product directly.

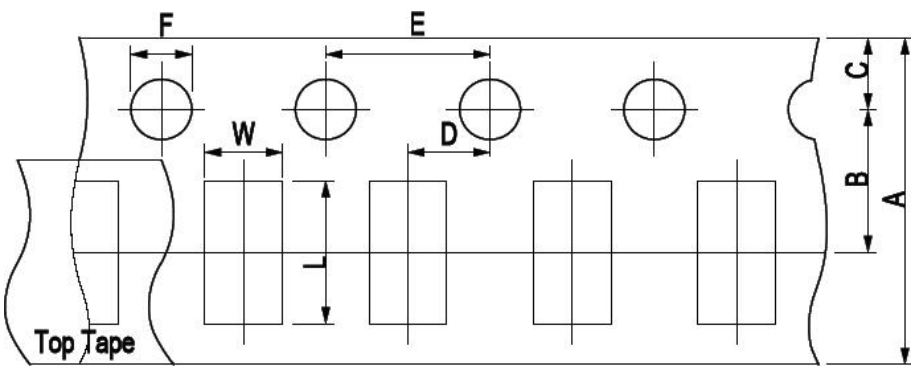
(2) Soldering Volume

Note that excess of soldering volume will easily get crack the body of this product.

Application Guide



Package Information



A	B	C	D	E	F	L	W
8.00±0.3	3.50± 0.05	1.75±0.1	2.00±0.05	4.00±0.1	1.50±0.1	2.30± 0.1	1.55± 0.1

Order Information

Device	Package	Net Weighte	Carrier	Quantity	HSF Status
KH-3216-7.2-31-A	3216	0.0089g	Tape&Reel	5000pcs	RoHS compliant

Revision history

Date	Revision	Description of changes
2023-11-5	1.0	First Version