

World Best Product

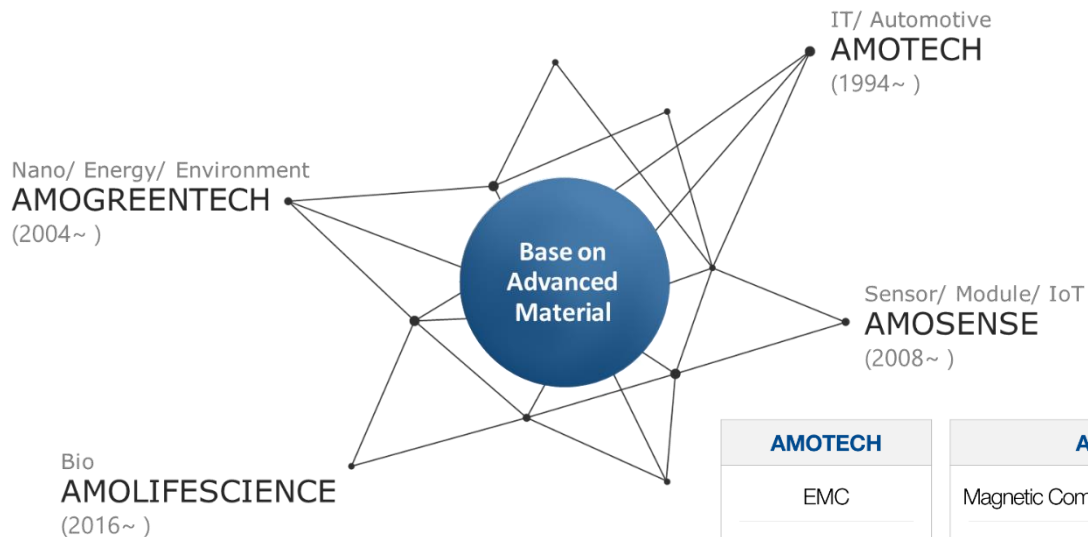
Key Components for IT & Energy Industry Based on
Advanced Materials



AMOTECH CERAMIC CAPACITORS



AMO GROUP INTRODUCTION



AMOTECH

EMC

Antenna

Motor

AMOGREENTECH

Magnetic Component

Flexible Battery

Vent

AMO Plant

Force Touch

ESS

Water Treatment

Nano Fiber

Thermal Magnetic EMI

Thin-film PCB

PCB

Metal-Graphite

Metallic Converter

Smart Clean Window

AMOSENSE

Wireless Charging

Substrate & Package

Module

LED Lighting

5G

IoT Device

Sigfox Operator

AMOLIFESCIENCE

Bio Device

AMO Skin

Nano-mag

Stem Cell

Bio Medical

AMOTECH BUSINESS INTRODUCTION

ESD/EMI Solution



ESD/EMI Components

Common mode Filter

ESD Cap.

Ferrite Sheet

Application

Mobile Phone, Tablet PC, Notebook,
Wearable, Home Appliance, Automotive

Antenna Solution



Passive Antennas

- **GPS Patch / SDARS ant.**

- Bluetooth

- WiFi / LTE

NFC Antenna

Wireless Charging Ant.

RF modules

Application

Mobile Phone, Wearable, M2M, IoT
devices, Automotive

Motor Solution



BLDC Motors

For Automobile

- In Car Sensor

- Battery Cooling Fan

- LED Headlight cooling Fan

- Air Purifier Fan

- Electric Water Pump

For Home appliance

- Motor for Drum Washing M/C

Application

Automotive & Home Appliance

Ceramic Cap. Solution



High Q MLCC

Broadband Cap.

Large Cap. MLCC

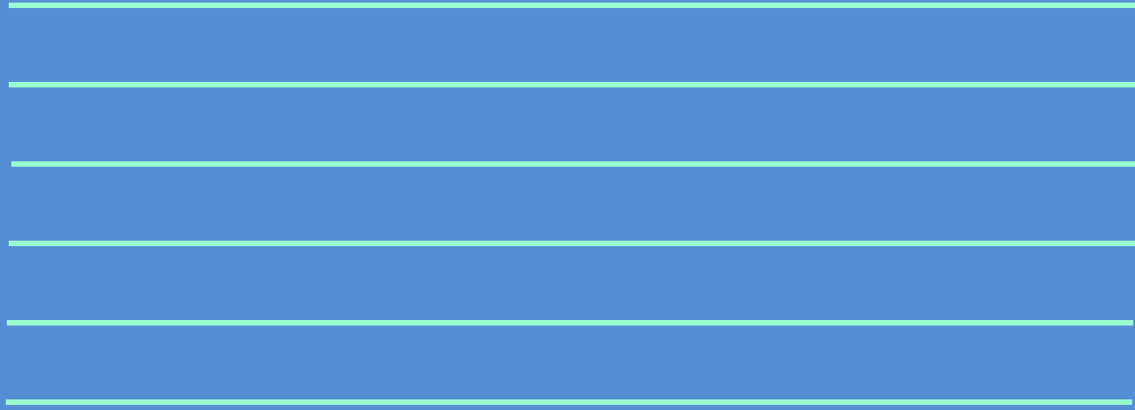
Power MLCC

Application

Base stations & Small Cells, Home
Appliances, Automotives

World Wide 1st Market Share

Amotech Capacitor Overview

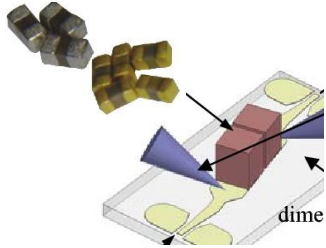


AMOTECH CERAMIC CAPACITOR

IC and Systems Package Application

For Flip chip & Wire bonding at

Broadband capacitor - **ABC series**



IC Developer
Driven

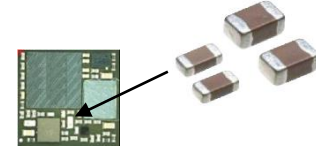
Device Package

**Total solution
for Mobile Communication
& Network**

Integration & Miniaturization
Value Up & Cost Down

System OEM
Driven

System Module



For Space saving

Large capacitance – **ACS, ACX series**

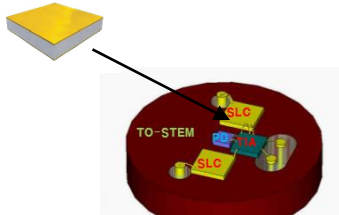
For EMI solution

3 Terminal Capacitor
- **AFC series**



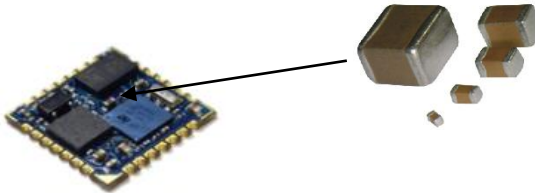
For Wire bonding

Single layer capacitor - **ASC series**



For Wireless application

High Q MLCC - **ACQ series**



PRODUCT REVIEW

◆ High Q MLCC (Capa : 1Bpcs/month)



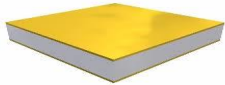
- 1111, 0805, 0603 inch for Macro-cell
- 0402, 0201 inch for Small-cell, CPE
- COG base Low ESR

◆ Broadband capacitor (Capa : 1Bpcs/month)



- 0201, 0402 inch plating
- Up to 40GHz solution
- X7R / X5R base

◆ Single layer capacitor (under development)



- 10 mil, 15 mil (0.25mm, 0.38mm)
- Gold plating
- High Capacitance with Low loss
- High K material

◆ Large Capacitance MLCC (Capa : 2Bpcs/month)

- 0402 – 1210 inch
- High reliability X7R base
- 50, 100V



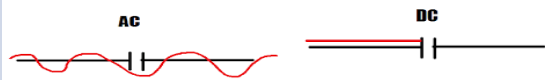
- 3 Terminal filter

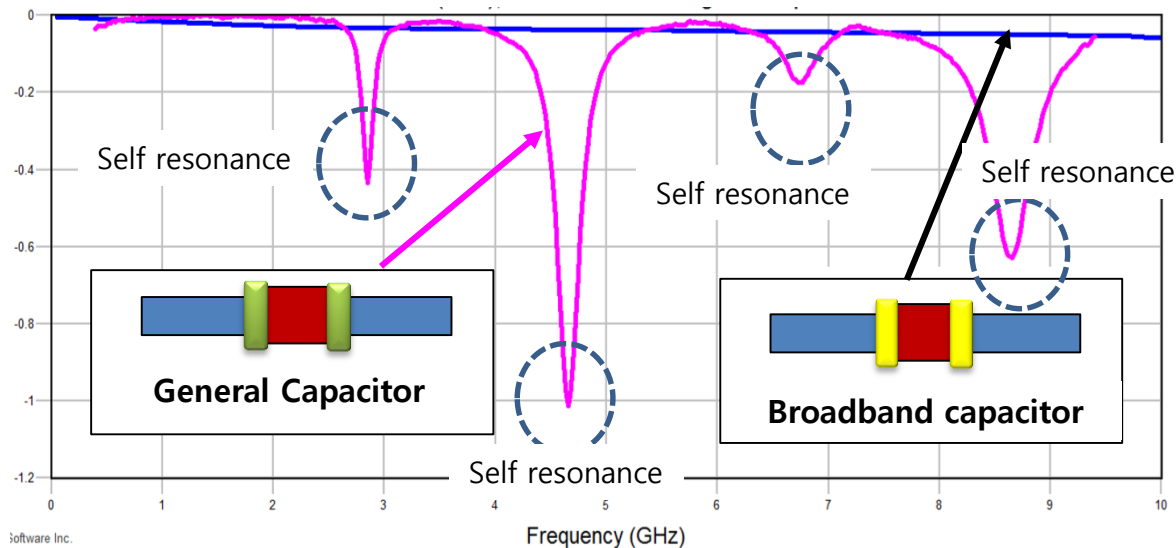
- 0603 – 1806 inch
- High reliability X7R base
- 50, 100V



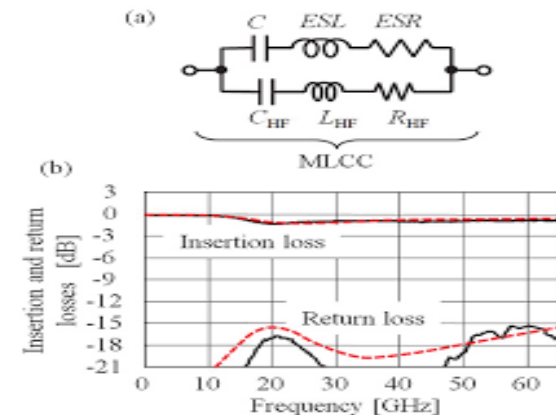
Broad-band Capacitance

Function of Broadband capacitor

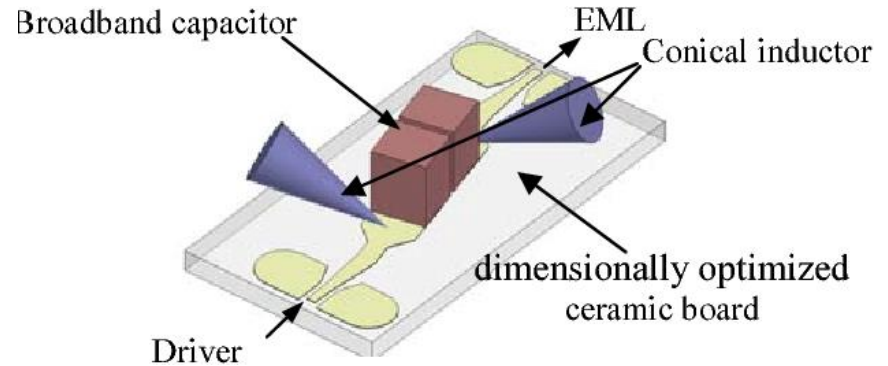
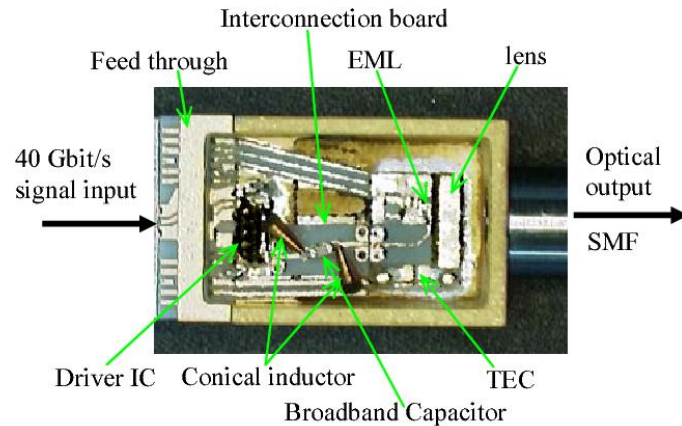
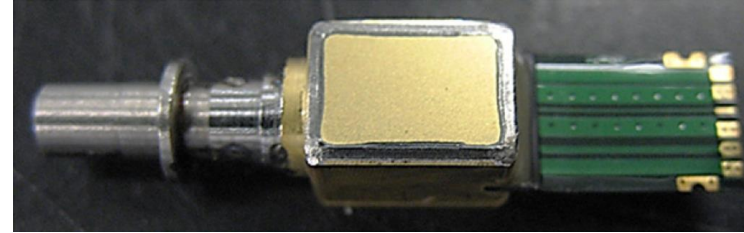
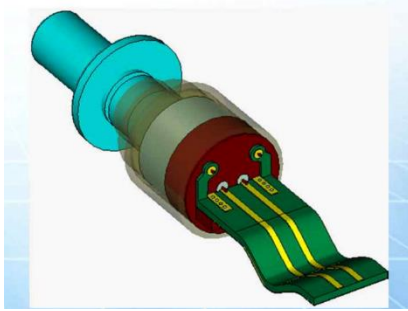
Main Function	DC blocking & Wide frequency range signal passing	
Design Purpose	Minimizing self resonance of capacitor up to 40GHz and over	
Design consideration	Control & Compensation of Equivalents ; ESL, ESR & Parasitic Capacitor and so on.	



※ Equivalent of capacitor



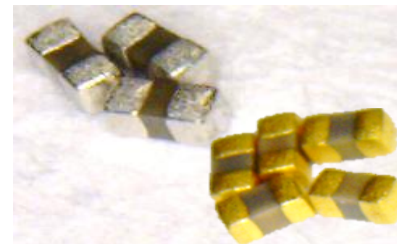
APPLICATION REVIEW



PRODUCT LINE UP

➤ ABCU series (AMOTECH BROADBAND CAPACITOR Ultra-wideband)

- Wide frequency range DC blocking : ~ 40GHz, 56GHz, 67GHz)
- Low insertion loss : ~ 0.5dB, ~ 1.0dB
- Various Material : X7R, X7S, X5R, etc.
- Plating Option : Ni/Sn, Cu, Au, etc.
- Size Line-up : 0402, 0201, 01005inch



<u>ABCU</u>	<u>10</u>	<u>2</u>	<u>01X</u>	<u>103</u>	<u>P</u>	<u>G</u>	<u>D</u>	<u>G</u>
Series name	Voltage	Material code	Size	Capacitance	Cp. Tolerance	Plating	Taping	Application

AMOTECH TECHNICAL ADVANTAGE

➤ Technical advantage

Material

Acquired material technology derived from MLCC investment.

- In house process of *high K material; X5R, X6S, X7R, X7S,*

Design

High Frequency Design & Measurement

- High frequency modeling software (ANSYS-HFSS, ADS)
- *70GHz measurement system* from mmWave technology

Process

In-house Plating tech

- Gold, Nickel, Tin
- *Plasma processing ; surface flatness, migration prevent*



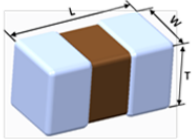
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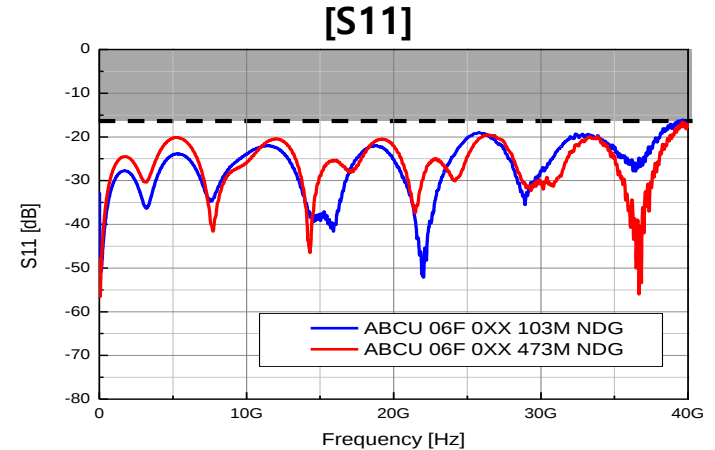
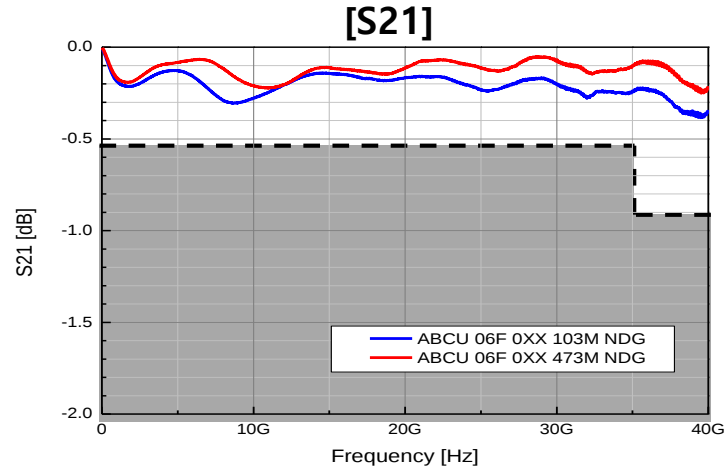
Production

Small size product mass production experience

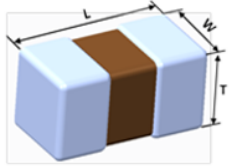
- *Monthly 200Mpcs* production of 0201, 01005

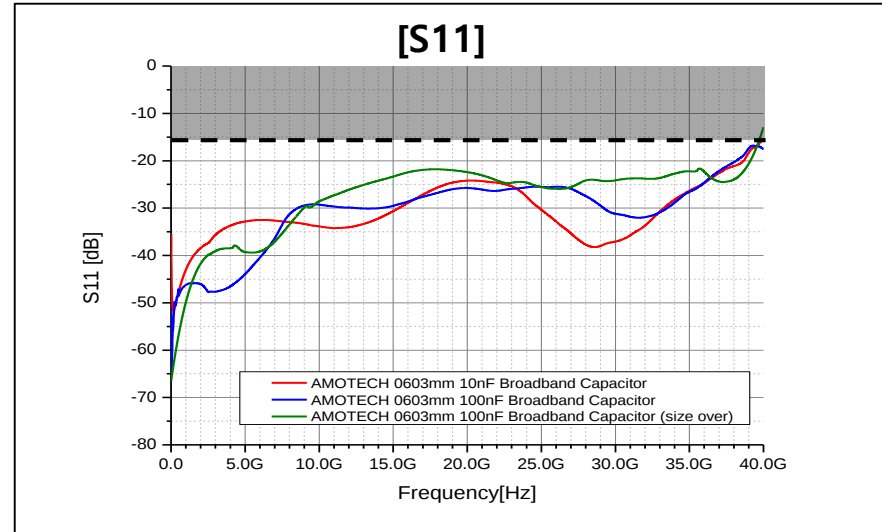
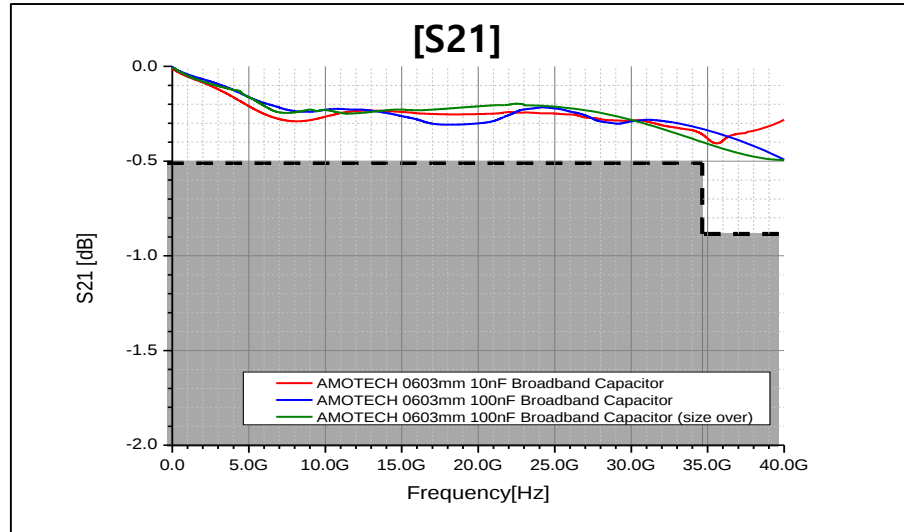
ABCU 01005 series

PART No.	L (mm)	W (mm)	T (mm)	Vdc-Cap.	Layout
ABCUA 06F 0XX 103M N(G)DG	0.40 ± 0.02	0.20 ± 0.02	0.20 ± 0.02	6.3V-10nF	
ABCUA 06F 0XX 473M N(G)DG	0.40 ± 0.02	0.20 ± 0.02	0.20 ± 0.02	6.3V-47nF	
ABCUA 04F 0XX 104M N(G)DG	0.40 ± 0.02	0.20 ± 0.02	0.20 ± 0.02	4V-100nF	

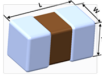


ABCU 0201 series

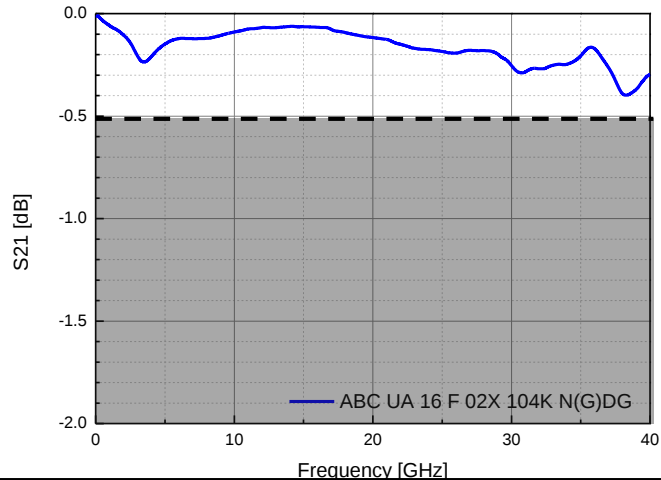
PART No.	L (mm)	W (mm)	T (mm)	Vdc-Cap.	Layout
ABCUA 102 01X 103P N(G)DG	0.60 ± 0.03	0.30 ± 0.03	0.30 ± 0.03	10V-10nF	
ABCUA 102 01X 104K N(G)DG	0.60 ± 0.03	0.30 ± 0.03	0.30 ± 0.03	10V-100nF	



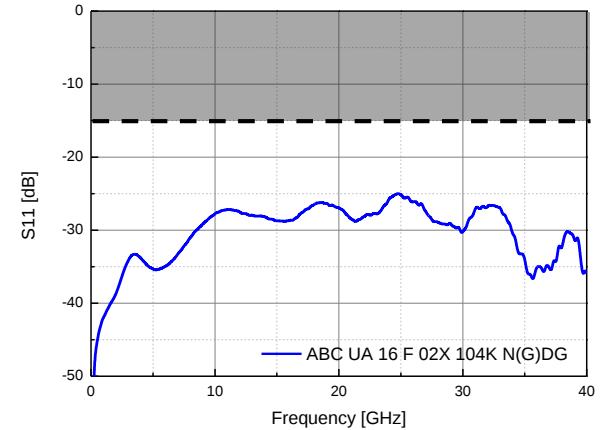
ABCU 0402 series

PART No.	L (mm)	W (mm)	T (mm)	Vdc-Cap.	Layout
ABC UA 16 F 02X 104K N(G)DG	1.0 ± 0.1	0.5 ± 0.1	0.5 ± 0.1	16V-100nF	

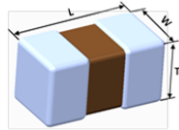
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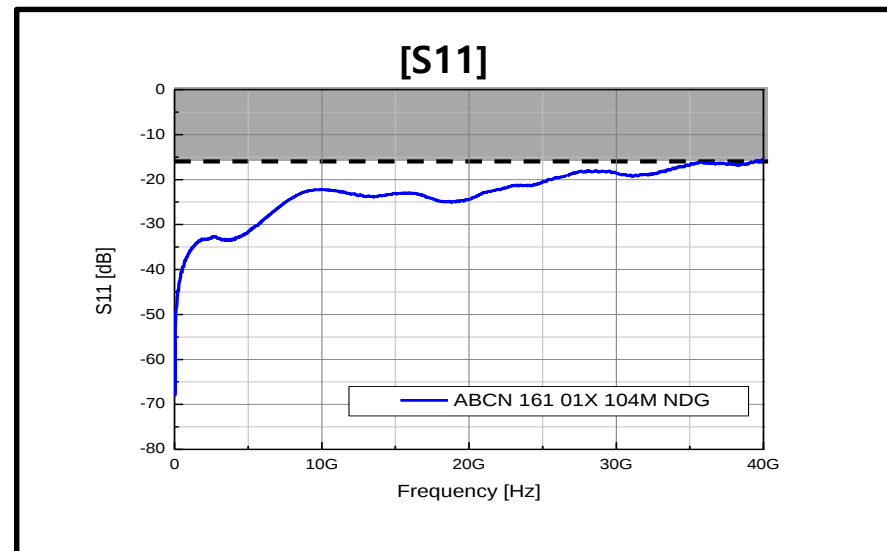
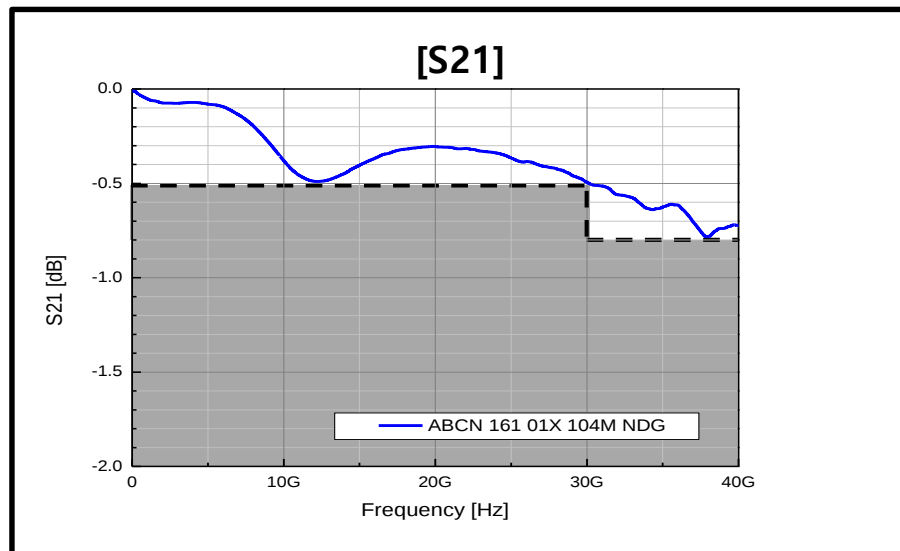


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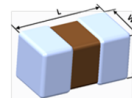


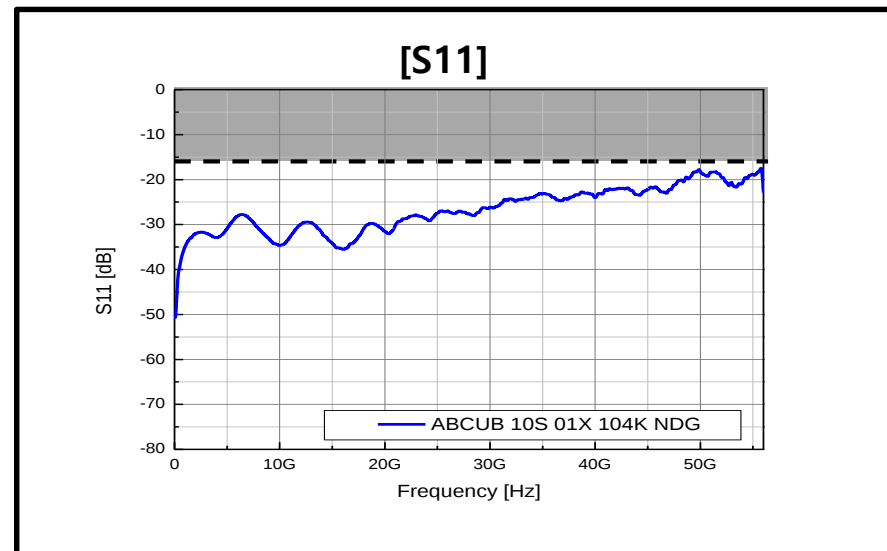
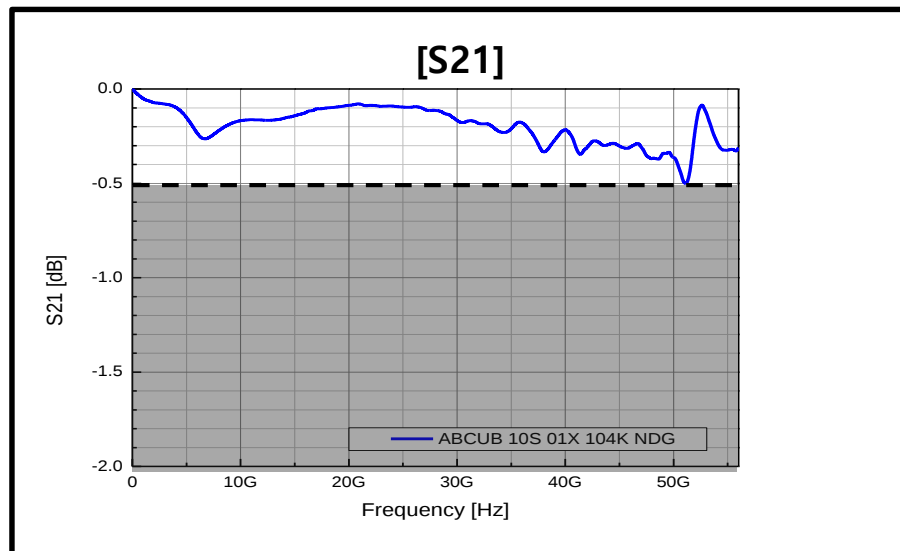
ABCN series

PART No.	L (mm)	W (mm)	T (mm)	Vdc-Cap.	Layout
ABCNA 161 01X 104M N(G)DG	0.60 ± 0.03	0.30 ± 0.03	0.30 ± 0.03	16V-100nF	

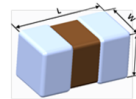


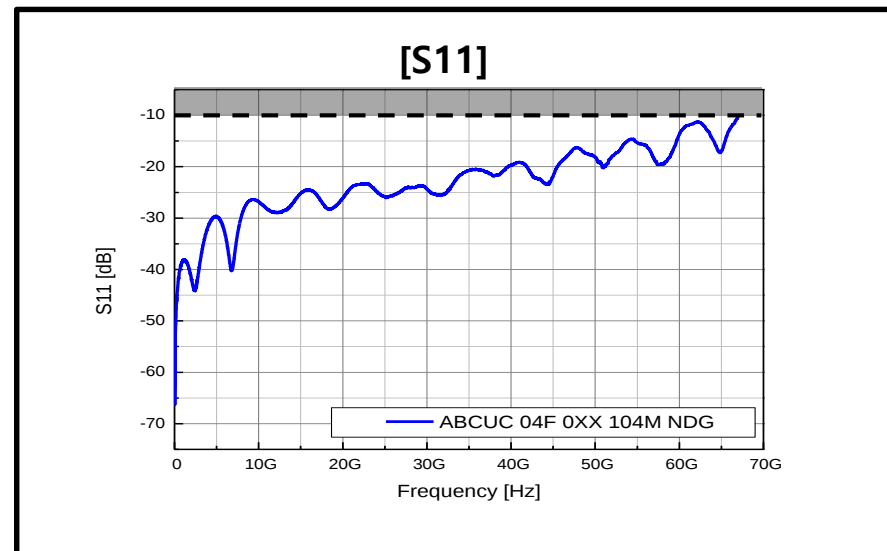
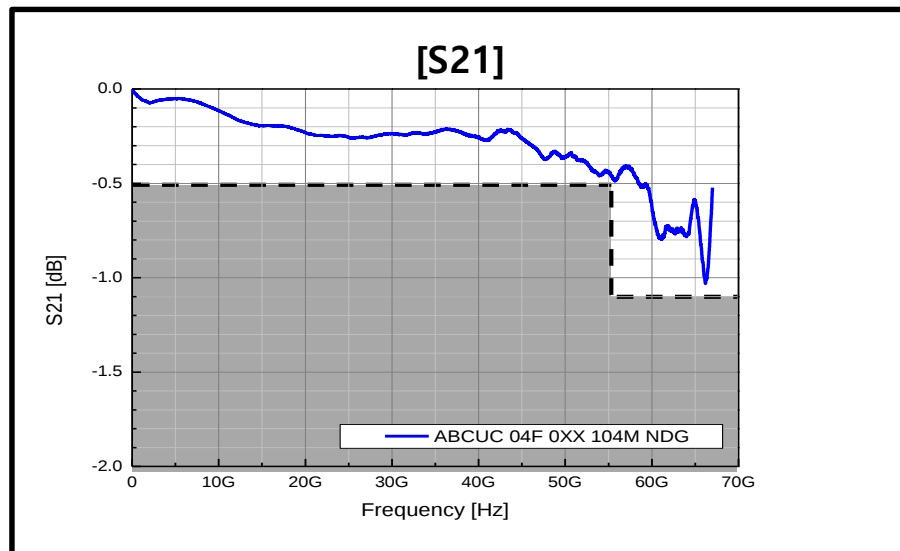
ABCUB series (~56GHz)

PART No.	L (mm)	W (mm)	T (mm)	Vdc-Cap.	Layout
ABCUB 10S 01X 104K N(G)DG	0.60 ± 0.03	0.30 ± 0.03	0.30 ± 0.03	10V-100nF	



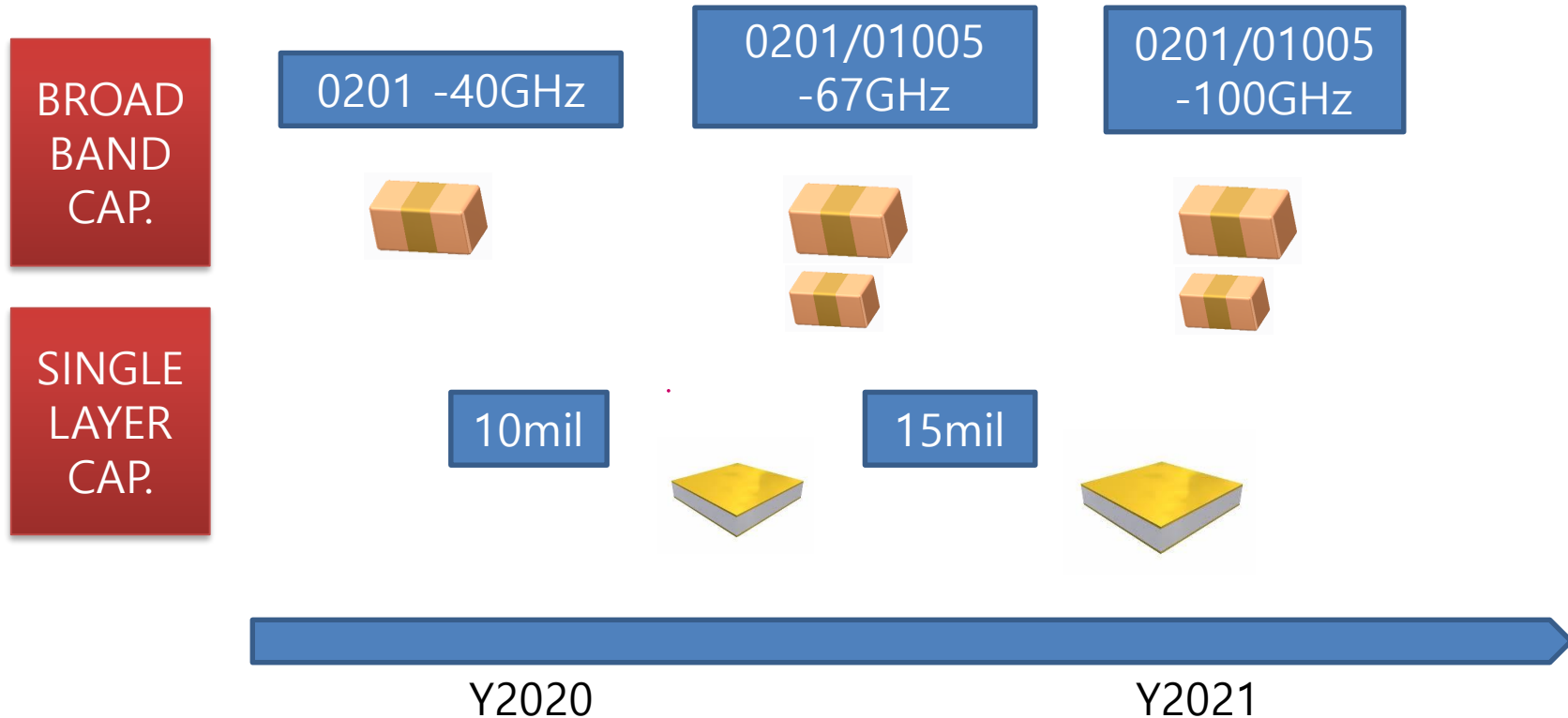
ABCUC series (~67GHz)

PART No.	L (mm)	W (mm)	T (mm)	Vdc-Cap.	Layout
ABCUC 04F 0XX 104M N(G)DG	0.40 ± 0.02	0.20 ± 0.02	0.20 ± 0.02	4V-100nF	

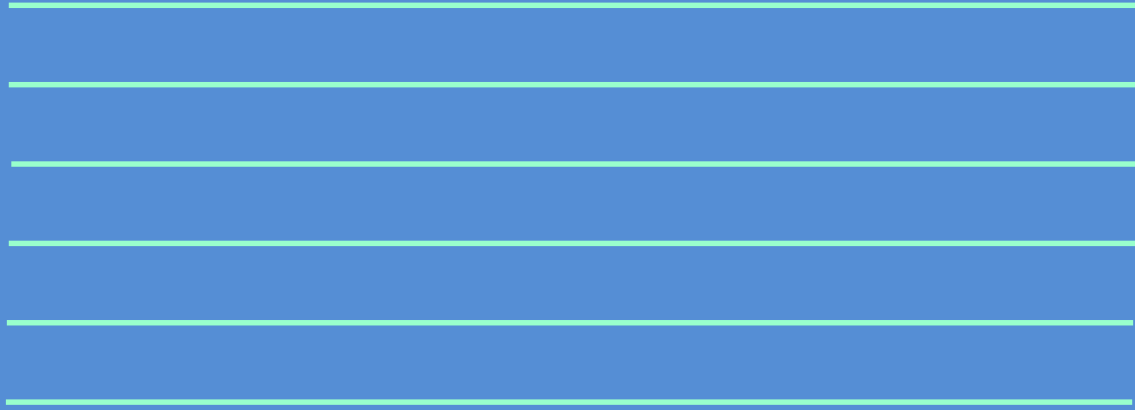


PRODUCT ROADMAP

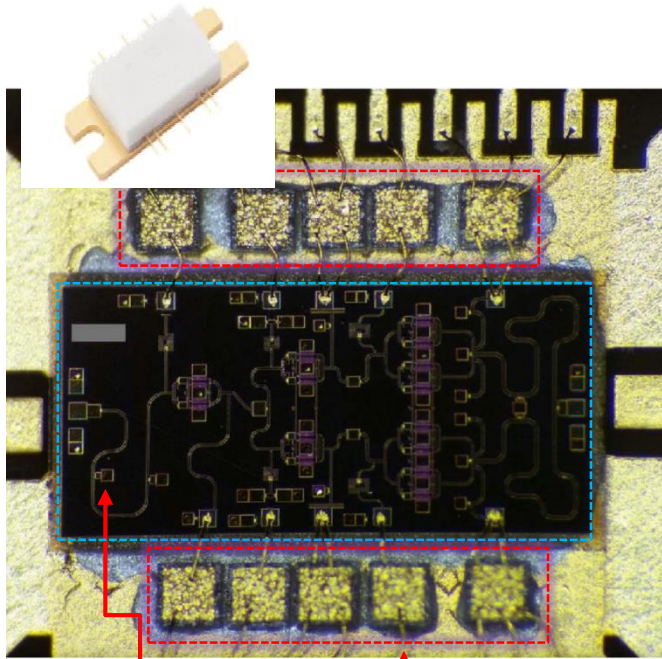
- Patent avoidance design & Higher frequency up to 100G



Single layer Capacitor

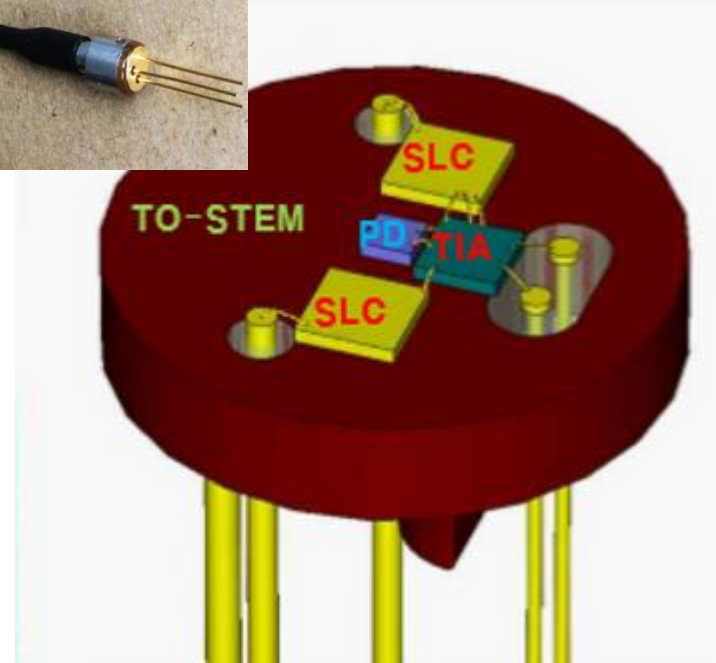


SINGLE LAYER CAPACITOR APPLICATION



Lumped MIM capacitors

Decoupling capacitors (100~1000pF)
with 1 mil gold WBs



SINGLE LAYER CAP. LIBRARY

➤ ASC series

- Customizable size
- Various dielectric material library
- RoHS compliant

Single Cap.

Double Cap.

Array Cap.

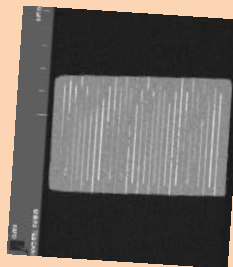
Customized Cap.

Class	Permittivity	L X W	mil	10 x 10	15 x 15	20 x 20	30 x 30	40x40
			mm	0.25 x 0.25	0.38 x 0.38	0.50 x 0.50	0.76 x 0.76	1.0 X 1.0
		T	mm	0.15 ~ 0.25	0.15 ~ 0.30	0.15 ~ 0.30	0.15 ~ 0.30	0.15 ~ 0.30
C0G	K22	Cap.	[pF]	~ 0.1	0.1 ~ 0.2	0.2 ~ 0.3	0.4 ~ 0.8	0.7 ~ 1.3
	K30		[pF]	~ 0.1	0.2 ~ 0.3	0.2 ~ 0.5	0.5 ~ 1.0	0.7 ~ 1.4
	K70		[pF]	0.2 ~ 0.3	0.3 ~ 0.7	0.6 ~ 1.2	1.3 ~ 2.7	2.3 ~ 4.7
	K100		[pF]	0.2 ~ 0.3	0.4 ~ 0.8	0.7 ~ 1.4	1.6 ~ 3.3	2.8 ~ 5.7
X7R	K40		[pF]	~ 0.1	0.2 ~ 0.3	0.3 ~ 0.6	0.7 ~ 1.4	1.2 ~ 2.4
	K1000		[pF]	2.0 ~ 3.5	4.1 ~ 8.2	7.1 ~ 14	16 ~ 33	28 ~ 56
	K2000		[pF]	4.8 ~ 8.1	9.0 ~ 19	16 ~ 32	37 ~ 75	65 ~ 130
	K4000		[pF]	8.9 ~ 15	15 ~ 34	30 ~ 60	67 ~ 135	120 ~ 240
	K5000		[pF]	10 ~ 20	20 ~ 43	37 ~ 75	86 ~ 170	150 ~ 300
X7S	K30000		[pF]	66 ~ 110	130 ~ 250	220 ~ 440	510 ~ 1020	880 ~ 1770
	K50000		[pF]	110 ~ 180	210 ~ 420	370 ~ 740	850 ~ 1700	1500 ~ 2900

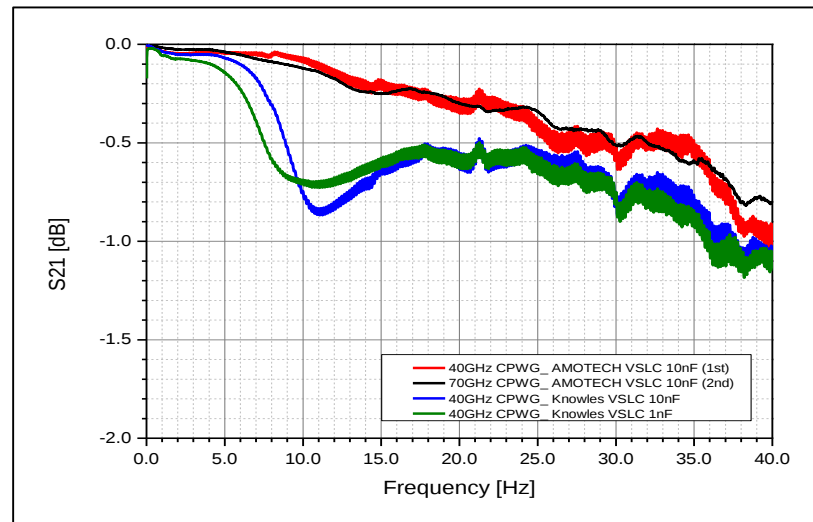
SINGLE LAYER CAP. – VERTICAL TYPE

➤ ASCV series

- Large Capacitance
- Low Insertion Loss
- PME Internal electrode
- RoHS compliant

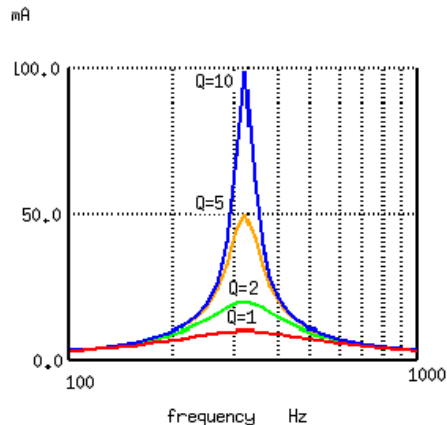


Item	Value
Size	30x30 mil (0.76 x 0.76 x 0.56mm)
Voltage	100V
Capacitance	10nF
Cap tolerance	20%
Dissipation Factor	2.5% @ 1MHz
Insulation Resistance	1000 MΩ
Permittivity	5,000



High Q MLCC

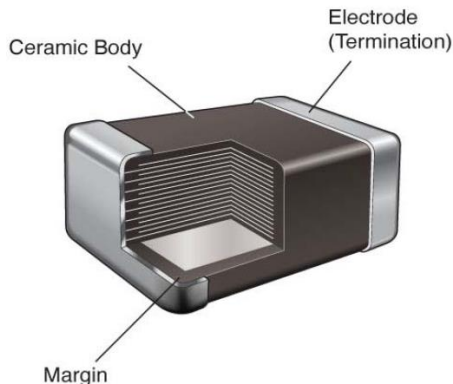
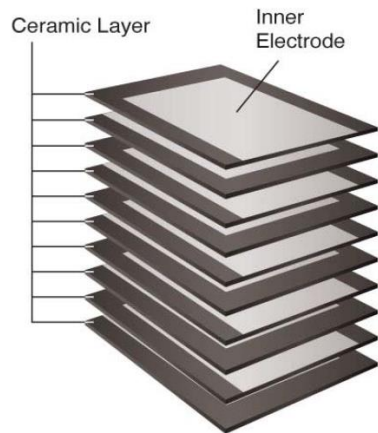
What is High Q MLCC



“ Q or Q factor ” is a term, which is used in RF fields.

This term defines how much a RF signal can transfer **with low loss or frequency distortion**.

Therefore, High Q means **low loss in Radio frequency range**.



High Q MLCCs require some specific materials for their ceramic body & internal electrodes.

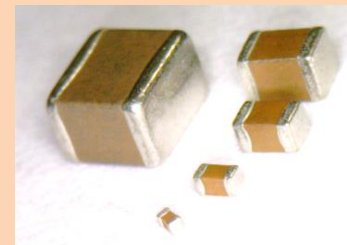
Ceramic body : Class I (e.g. C0G/NP0 with high Q)

Electrodes : Ag(PME) or Cu(BME)

HIGH Q MULTILAYER CERAMIC CAPACITOR

➤ ACQ (High Q) series

- Variable Size
- Low ESR
- High working Voltage
- High self resonance frequencies
- Stable COG dielectric with PME (Precious Metal Electrode)
- RoHS compliant



Part No.	Ordering No.	Size		Rated Voltage	Capacitance
		EIA (inch)	JIS (mm)		
ACQ01X2BN□□□JADG	A60Z□□□T200T	0201	0603	200V	Under development
ACQ02X2BN□□□JADG	A60L□□□T250T	0402	1005	250V	0.1~27pF
ACQ03X2BN□□□JADG	A60S□□□T250T	0603	1608	250V	0.1~100pF
ACQ05X2BN□□□JALG	A60F□□□T250T	0805	2012	250V	10~240pF
ACQ11X5BN□□□JALG	A80B□□□T500T	1111	2828	500V	1.2~100pF

HIGH Q MLCC CROSS REFERENCE

	AMOTECH	MURATA	ATC	KNOWLES(DLI)	TEMEX
1111inch /2828mm	A80B0R1BT500T	GQM22M5C2HR30B B01D	800B0R1BT500T	1111J500P100BQT	501CHB0R1BSE
0805inch /2012mm	A60F0R1BT250T	GQM2195C2ER10BB 12D	600F0R1BT250T	0805J250P100BQT	251SHF0R1BSE
0603inch /1608mm	A60S0R1BT250T	GQM1875C2ER10BB 12D	600S0R1BT250T	0603J250P100BQT	251SHS0R1BSE
0402inch /1005mm	A60L0R1BT200T	GQM1555C2DR10B B01D	600L0R1BT200T	0402J200P100BQT	201SHL0R1BSE
0402inch /1005mm	A60L0R1BT250T	To replace 0603inch/1608mm 250V type			
0201inch /0603mm	A60Z0R1BT200T	To replace 0402inch/1005mm 200V type			

※ BLUE CODE : SIZE CODE

RED CODE : CAPACITANCE & IT'S TOLERANCE

GREEN CODE : VOLTAGE CODE

AMOTECH TECHNOLOGY ADVANCE

CERAMIC

Ceramic formulation

- Low loss, TCC, BDV, Dielectric constant

INTERNAL ELECTRODE

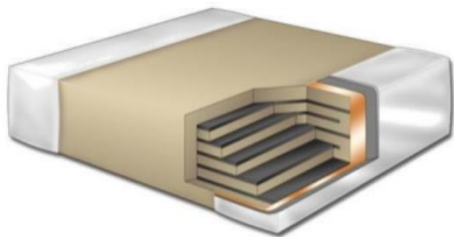
Homogeneous metal

- High conductivity & Reliability
- AgPt : 250V, / AgPd : 500V

EXTERNAL TERMINAL

Hermetic sealing

- Interface strength
- Ag migration prevention (Terminal shape)



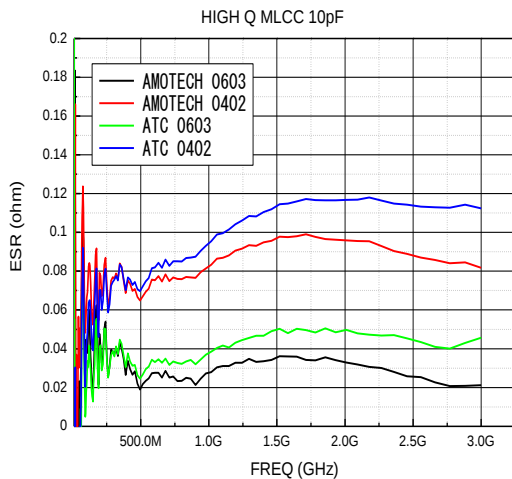
ADVANTAGE OF AMOTECH HIGH Q MLCC

➤ Basis of using AMOTECH high Q MLCC

Higher Q & Higher BDV for PME

* Lower ESR & High Breakdown voltage

	BDV	ESR 3.5GHz
M com (BME)	2.0 kV	100mohm
A com (PME)	2.9 kV	110mohm
Amotech (PME)	2.9 kV	80mohm



Enough Power Rate

* 100W test pass
@ 3.5GHz, 10pF

Power	1005mm 0402inch	1608mm 0603inch	Ambient Temp.
50W	Pass	Pass	25°C
80W	Pass	Pass	25°C
100W	Pass	Pass	25°C
100W	Pass	Pass	105°C
100W	Pass	Pass	125°C
100W	Pass	Pass	150°C

ADVANTAGE OF AMOTECH HIGH Q MLCC

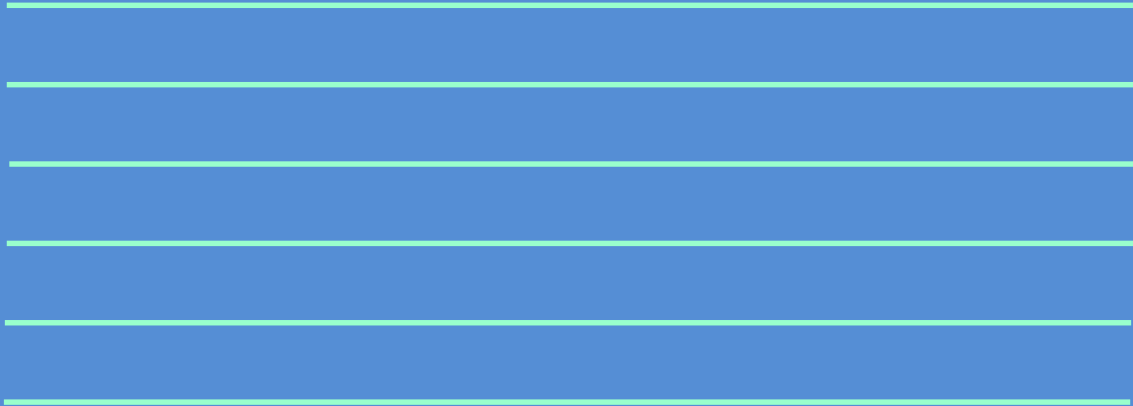
Item	Test Conditions			
	Temperature (°C)	Humidity (%)	Vdc (V)	Time (hr)
High Temperature Bias Test (HTB)	125	-	500 (=Rated volt. X2)	1000
Temperature & Humidity Bias Test (THB)	85	85	250 (=Rated volt.)	1000
High Temperature IR Test (HT IR)	150		500 (=Rated volt. X2)	24

Spec.

IR (Insulation Resistance) : $10^4 \text{M}\Omega$ Min.

Cp (Capacitance) : In each capacitors capacitance tolerances

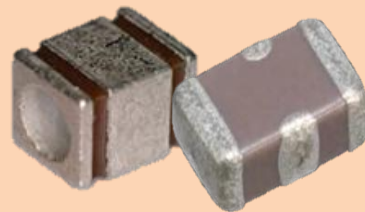
3 Terminal Capacitor



3 TERMINAL CAPACITOR FOR POWER LINE

➤ AFC (Multilayer), AFX (Coaxial) series

- Variable Size
- Large current
- Low ESL
- RoHS compliant



Part No.	Size		Rated Voltage	Rated Current	Capacitance
	EIA (inch)	JIS (mm)			
AFC16S03A □□□ RCD	0603	1608	16V	1A ↓	~ 0.022uF
AFC16S03A □□□ RPD	0603	1608	16V	2A ↑	~ 0.1uF
AFC25S06C □□□ BPL	1806	4516	25V	6A	~ 1.5uF
AFC50S06C □□□ BPL	1806	4516	50V	6A	~ 1.0uF
AFX1BS10F102MPL	1210	3225	100V	20A	0.001uF

Low Current

1608mm 16V 1~2A



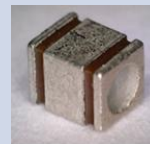
Middle Current

4516mm 25~50V 6A



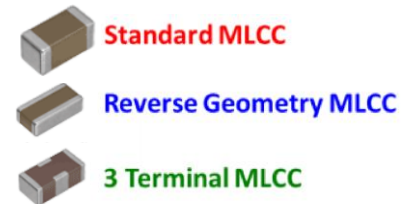
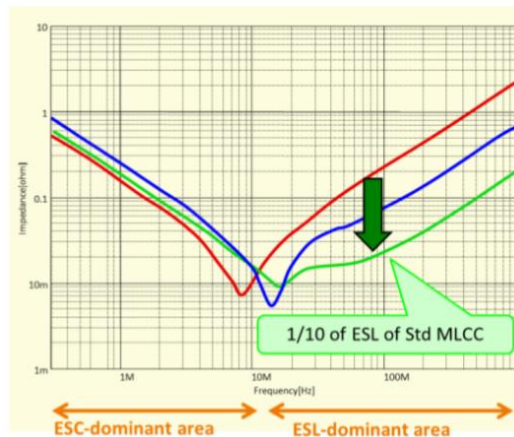
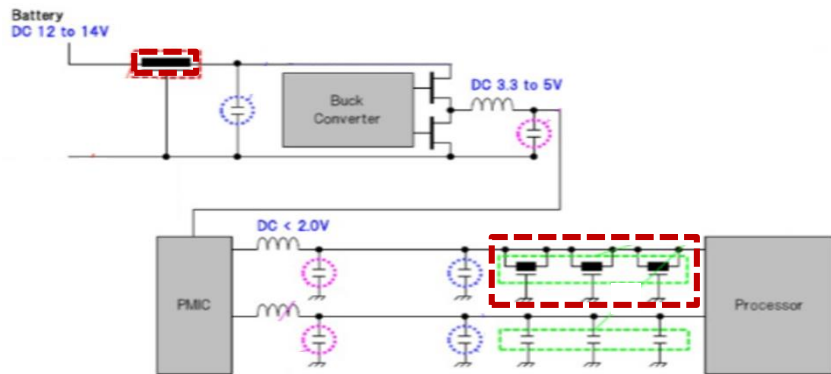
High Current/High Voltage

3225mm 100V 10A ↑



ADVANTAGE OF FEED-THROUGH CAPACITOR

역용 (DC power line ripple 전원 라인 리플 전압 제거)



Capacitance	Inductance (Shunt)	Inductance (Series)	Voltage	Current
High Capacitance	Low parasitic inductance	High Series inductance	Low voltage –mobile, Infotainment High Voltage – Industrial,	Depend on internal design (Open issue)

EMC TEST LAB

Shield Room

IT/Commercial Conducted Emission
Transient (ESD/ Surge)
Near Field Scan

6.0m x 4.0m x 3.0mH(Height)

DC 150V 100A

1Ø 110V 10KVA/ 1Ø 220V 15KVA



3M Chamber

IT/Commercial : Radiated Emission
Automotive : Radiated/ Conducted
Emission

9.0m x 6.0m x 6.0m(Height)

DC 150V 100A

1Ø 110V 10KVA/ 1Ø 220V 15KVA

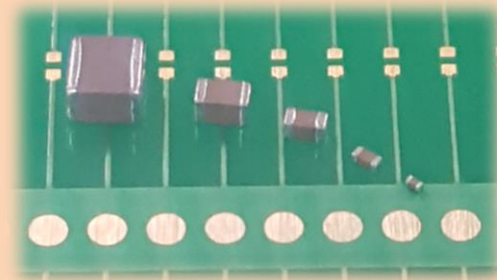


Large Capacitance

LARGE CAPACITANCE FOR GENERAL APPLICATION

➤ ACX (85°C) series

- Customizable wide range size
- Large Cap. with small size
- Stable X5R dielectric
- RoHS compliant

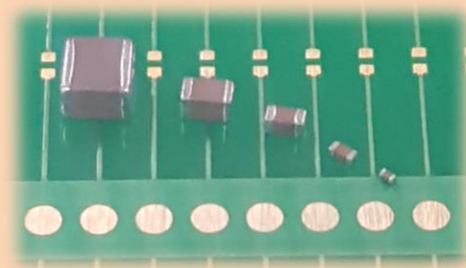


Part No.	Size		Rated Voltage	Dielectric Material	Capacitance
	EIA (inch)	JIS (mm)			
ACX0XX06N□□□MNDG	01005	0402	6.3V	X5R	~0.1uF
ACX01X10N□□□MNDG	0201	0603	10V	X5R	~1uF
ACX01X06N□□□MNDG	0201	0603	6.3V	X5R	~ 0.1uF
ACX01X04N□□□MNDG	0201	0603	4V	X5R	~2.2uF
ACX02X16N□□□KNDG	0402	1005	16V	X5R	~1uF
ACX02X06N□□□MNDG	0402	1005	6.3V	X5R	~4.7uF
ACX03X25N□□□KNDG	0603	1608	25V	X5R	~1uF
ACX03X10N□□□KNDG	0603	1608	10V	X5R	~10uF
ACX05X25N□□□KNDG	0805	2012	25V	X5R	~10uF
ACX05X06N□□□MNDG	0805	2012	6.3V	X5R	~22uF

LARGE CAPACITANCE FOR GENERAL APPLICATION

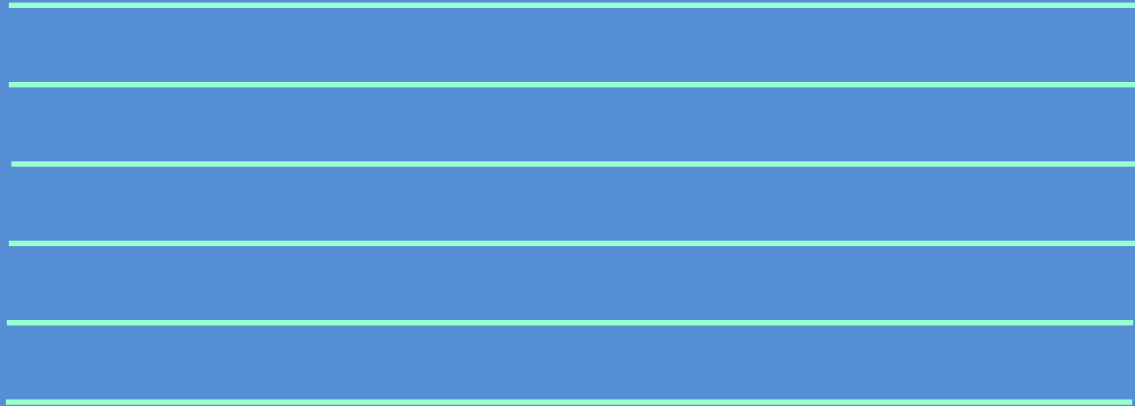
➤ ACS (125°C) series

- Customizable wide range size
- Large Cap. with small size
- Stable X7R/X7S dielectric
- RoHS compliant



Part No.	Size		Rated Voltage	Dielectric Material	Capacitance
	EIA (inch)	JIS (mm)			
ACS02X50N□□□KNDG	0402	1005	50V	X7R	~ 0.1uF
ACS02X06N□□□MNDG	0402	1005	6.3V	X7R(S)	~ 1uF
ACS03X50N□□□KNDG	0603	1608	50V	X7R	~ 0.1uF
ACS03X25N□□□KNDG	0603	1608	25V	X7R	~ 1uF
ACS03X10N□□□KNDG	0603	1608	10V	X7R	~ 2.2uF
AC205X1BN□□□KNLG	0805	2012	100V	X7S	~ 1uF
ACS05X50N□□□KNLG	0805	2012	50V	X7R	~ 0.1uF
ACS05X16N□□□KNLG	0805	2012	16V	X7R	~ 10uF
AC206X1BN□□□KNLG	1206	3216	100V	X7R(S)	~ 4.7uF
AC206X50N□□□KNLG	1206	3216	50V	X7R(S)	~ 10uF
AC210K1BL□□□KNLG	1210	3225	100V	X7R(S)	~ 4.7uF
ACS10X50N□□□KNLG	1210	3225	50V	X7R	~ 10uF
ACS10X25N□□□KNLG	1210	3225	25V	X7R	~ 22uF
ACS10X10N□□□KNLG	1210	3225	10V	X7R	~ 47uF

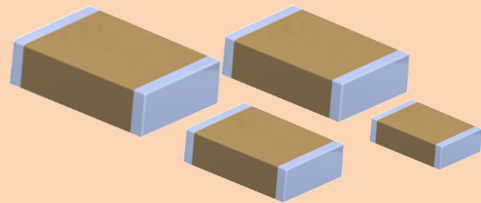
High Power MLCC



Power MLCC FOR GENERAL APPLICATION

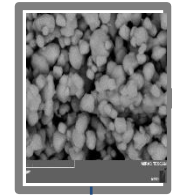
➤ ACC (125°C) series

- Ni-COG Base material
- High temperature & DC Bias stability
- No piezoelectric noise
- RoHS compliant



Part No.	Size		Rated Voltage	Dielectric Material	Capacitance
	EIA (inch)	JIS (mm)			
ACC0XX50N□□□JNDG	01005	0402	50V	C0G	~ 68pF
ACC0XX25N□□□JNDG	01005	0402	25V	C0G	~ 110pF
ACC02X50N□□□JNDG	0402	1005	50V	C0G	~ 100pF
ACC06X2CN□□□KNLG	1206	3216	2kV	C0G	~ 390pF
ACC10J2BN□□□JNLG	1210	3225	200V	C0G	~ 47nF
ACC20H1CN□□□JFBG	2220	5750	1kV	C0G	~ 6nF
ACC20L6BN□□□JNBG	2220	5750	630V	C0G	~ 47nF
ACC40L5BN□□□KFBG	3640	90100	500V	C0G	~ 220nF

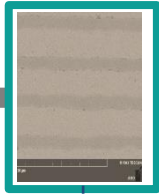
PROCESS TECHNOLOGY



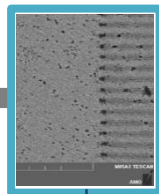
Dielectric Powder



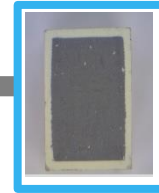
Sheet



Internal electrode



Stacking



Compression

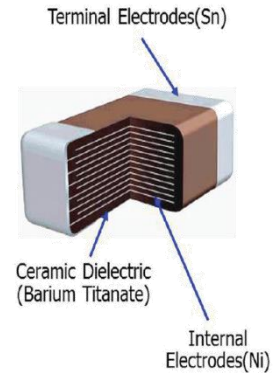


Binder Burnout



Sintering

KEY PROCESS	KPI - MLCC
Dielectric Powder	50nm
Dielectric Thickness	1um
Internal electrode	Ni, Cu – 0.5um
Stacking	600 layers
Compression	2000 atm
Binder Burnout	Carbon 1 ppm ↓
Sintering	300°C/min, Precise deoxidation atmosphere



AMOTECH TECHNICAL ADVANTAGE

➤ Technical advantage

Material

In house material formulation for Large Capacitance
- Glass, Paste, High K material; X5R, X7R, Y5V

Technology

Sophisticated production facilities & Secured large capacitance tech.
- Slurry milling M/C, Fast Firing M/C,
- Residual carbon control, Nano powder dispersion, Hermetic sealing

Process

Batch scale process
- *Quality oriented optimum process* by product available.

Production

X7R base production in progress
- *Capa : 2,000Mpcs/M*

AMOTECH MLCC ROADMAP. (1005 ~ 2012mm)

2020년 X7R, X7S, X8L

2021년 X7R 100V

생산 가능 제품 군⁽¹⁾

Capacitance	Cap Code	1005(0402)					1608(0603)						2012(0805)					
		6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V
10000pF	103																	
15000pF	153																	
22000pF	223																	
47000pF	473																	
68000pF	683																	
0.1μF	104																	
0.22μF	224																	
0.47μF	474																	
1μF	105																	
2.2μF	225																	
4.7μF	475																	
10μF	106																	
22μF	226																	
47μF	476																	

(1) 현재 고객 요청이 없어서 제작하지 않고 있으나, 향후 고객과 협의에 따라 대응 가능한 모델 군

AMOTECH MLCC ROADMAP. (3216 ~ 3225mm)

2020년 X7R, X7S, X8L

생산 가능 제품 군 ⁽¹⁾

2021년 X7R 630V, 2kV

2021년 X7T 250V 630V

2022년 U2J 630 -1000V

Capacitance	Cap Code	3216(1206)										3225(1210)													
		6.3V	16V	25V	50V	100V	250V	630V	630V	1000V	2000V	6.3V	10V	16V	25V	50V	100V	250V	630V	630V	1000V	2000V			
10000pF	103							X7T/X7R			222														
15000pF	153																								
22000pF	223																								
47000pF	473																	X7T/X7R							
68000pF	683																								
0.1μF	104																								
0.22μF	224																								
0.47μF	474																								
1μF	105				X8L																				
2.2μF	225														X8L										
4.7μF	475																								
10μF	106															X7S									
22μF	226														X7S										
47μF	476																								

(1) 현재 고객 요청이 없어서 제작하지 않고 있으나, 향후 고객과 협의에 따라 대응 가능한 모델 군

AMOTECH MLCC ROADMAP. (4532 ~ 5750mm)



2021년 X7T 250V 630V



2022년 U2J 630 -1000V



2021년 X7R 630V, 2kV



2022년 PLZT 500-900V

Capacitance	Cap Code	4532(1812)					5750(2220)							
		250V	630V	630V	1000V	2000V	250V	630V	630V	1000V	2000V	500V	700V	900
10000pF	103													
15000pF	153													
22000pF	223													
47000pF	473													
68000pF	683													
0.1μF	104													
0.22μF	224													
0.47μF	474													
1μF	105													
2.2μF	225													
4.7μF	475													
10μF	106													
22μF	226													
47μF	476													

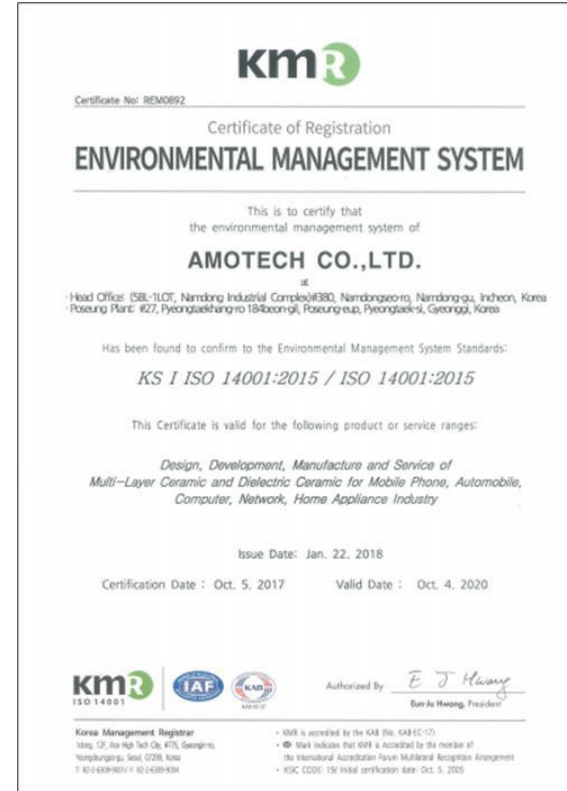
Amotech Quality System

Quality Management System

Quality : IATF 16949:2016



Environment : ISO 14001:2015



Mass production line

Target : Ensure product reliability

Qualified AEC-Q200

In advance detect and excavate the client's VOC trigger factors through In-site test and analysis.

IQC

- ▶ Powder Analysis
 - Particle size, Composition, Dielectric constant
- ▶ Paste
 - Solid contents, Viscosity, Thixotropic index

Raw material
Analysis

Quality control of Raw material

PQC

- ▶ X's Factor management (measurement)
 - Slurry viscosity, Casting "T", Printing "T", Firing profile, Plating thickness, ...
- ▶ Pre-Inspection(Half-finished good)
 - Cp/Df, IR, Section Analysis, Appearance, Dimension
- ▶ Time · Space deviation Management

Statistical analysis of indicator trends(Data
Monitoring)

Preemptive quality accident
prevention activities

OQC

- ▶ Final inspection
 - Cp/Df, IR, Solderability, Reliability(High temp. Operation Life test)
- ▶ VOC → VOP is linked to utilize it as an opportunity for improvement
- ▶ Continuous review and operation of measures to identify defects in a short period of time → Zero Defect

Customer-oriented thinking
(Prevent defect recurrence)

Feedback continuously occurred
Problem and anti-missive
activities

Reliability test equipment



Low/High Temp. Chamber



Temp Cycle Chamber



Temp & Humidity Chamber



* Ion Migration Evaluation System



ESD Tester



Vibrator



Mechanical Shocker

Q & A
