BeStar

www.bestargroups.com

BESTAR GROUPS Company Presentation

BESTAR HOLDING CO., LTD

TS16949 | ISO13485 | ISO9001 | ISO14001

17 V 1.1.1

Contents

Company Profile

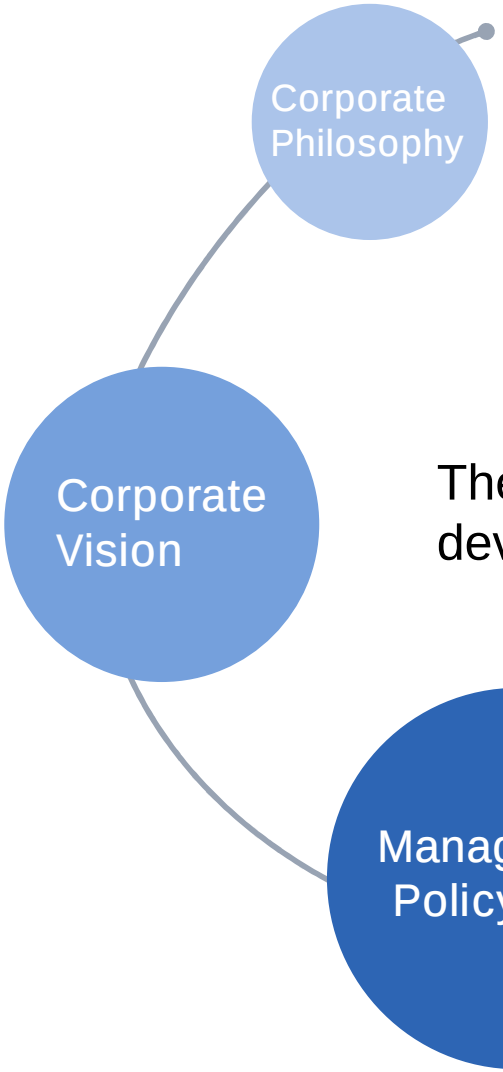
National high-tech enterprise

Company	BeStar Holding Co., Ltd.
Establised Year	2002
Employees	• more than 500 well trained and skilful operators • more than 100 engineers and technicians
Product	Micro Electro Acoustic Receiver、Buzzer、Speaker、Microphone、etc.
Sales of 2016	BeStar ￥177,081,576
Forecast Sales of 2017	BeStar ￥250,000,000
Certification	TS 16949, ISO9001, ISO14001, ISO13485
Headquarters	No.199. Huanghe West Road Changzhou, Jiangsu, China
Web Site	http://www.bestards.com

Brief History

- 2002 Established BeStar Electronics Co., Ltd;
- 2005 The company is listed in the provincial torch plan;
- 2007 Trademark was registered as "BeStar" in American;
- 2008 Founded Grewus in Germany;
- 2008 The company was rated as hightech enterprises in Jiangsu province;
- 2011 Won the provincial innovative company;
- 2013 Founded Jiangsu new-type multifunctional piezoelectric sensor engineering technology research center;
- 2014 Establish korea branch;
- 2014 "Bo shu" brand won the famous trademark in Jiangsu province in December;
- 2015 Awarded management innovation enterprisein Jiangsu province in January;
- 2016 Won the private technology enterprises in jiangsu province;
- 2017 Won the innovation of science and technology.

Corporate Culture

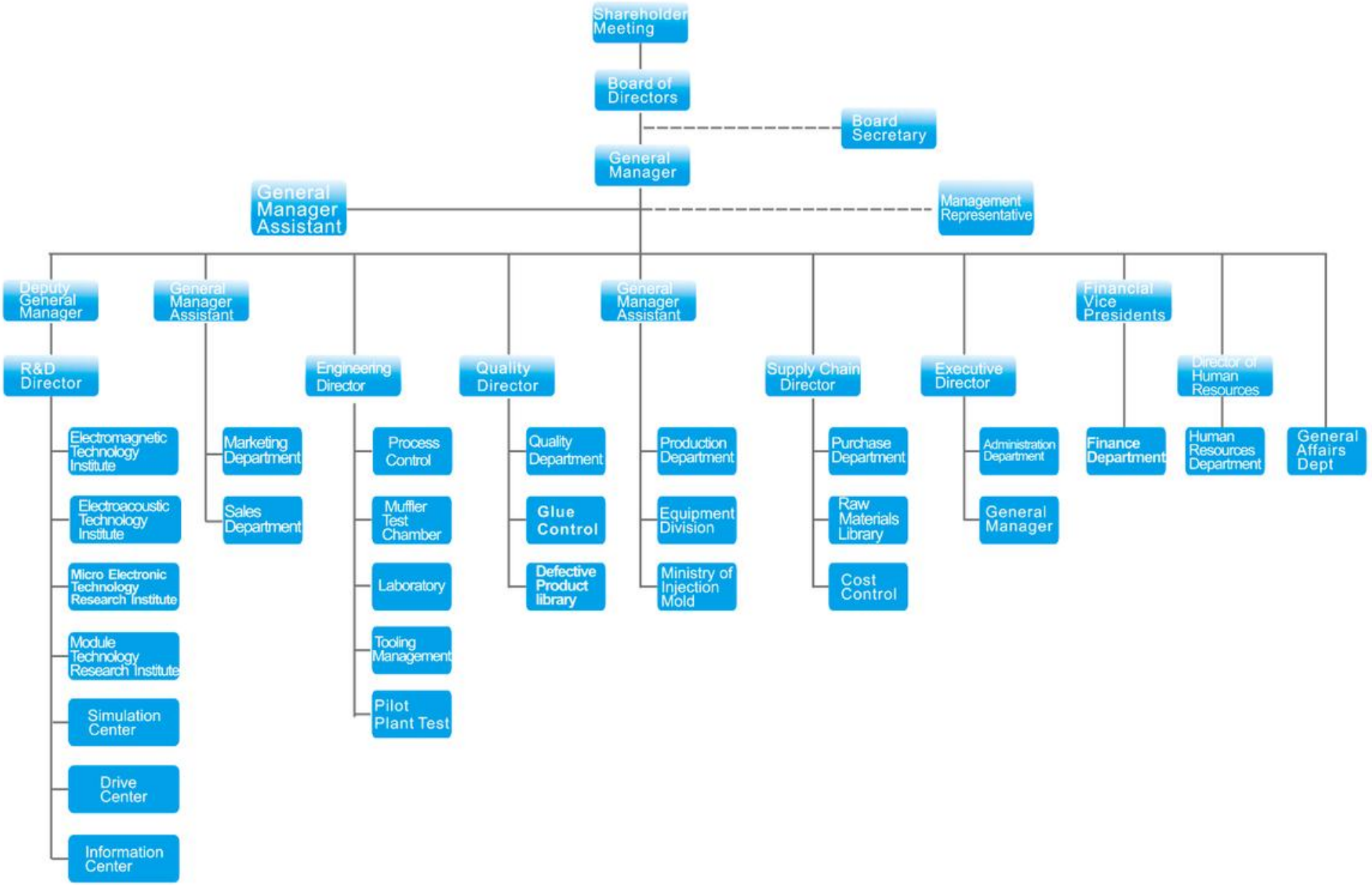


Integrity, Pragmatism, Efficiency and Innovation;

The pursuit of excellence, become Chinese micro electro acoustic devices and sensor industry leader;

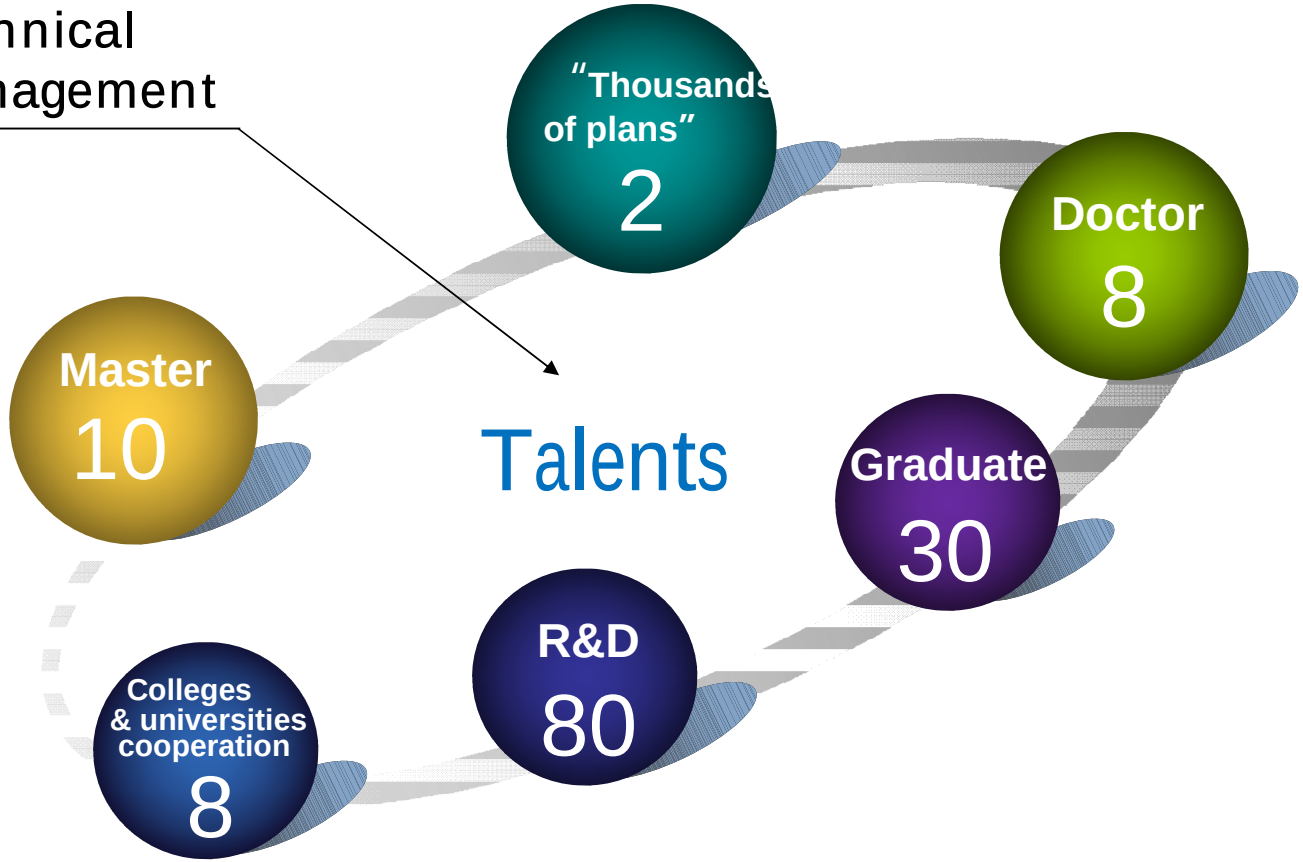
Continuous Improvement, Cost Containment, to meet the Multi-Layered Demand.

Organization Chart



Why BeStar-R&D Team

Technical Management



The company was rated as hightech enterprises in Jiangsu province;

Won the provincial innovative company;

Founded Jiangsu new-type multifunctional piezoelectric sensor engineering technology research center;

BeStar gain success in the new three board listed, marks the company's development to a new height.

R&D Design Center

- Experienced and innovative design and development engineers；
- More than 200 patents approved, included 96 invented patents;
- Using the simulation software Comsol&Ansys for design and analysis ；
- 3D rapid prototyping, shorten the development cycle；
- State of the art acoustic laboratories， laboratory reliability ；
- Professional testing, analysis software Klippel, Soundcheck；
- Focus on application specific designs；
- Center of competence for Nanjing University。

Function of Trial Production Workshop

Output excellent talents

Output process management

Output APQP documents

Output qualified samples

The ultimate goal of BPS is in the whole process from order to delivery on eliminating waste.

Not be used/creative ability

Because of the lack of security and staff underutilized and lost the chance

Defects

Defects of unqualified parts production or rework

Inventory

Excessive inventory of raw materials, work in process or finished goods

Overprod-uction

Overproduction, beyond the demand of next working procedure

Waiting

Due to the non-standard product process and waste of time - raw material shortages, bottlenecks, machine downtime

Excessive Mobile

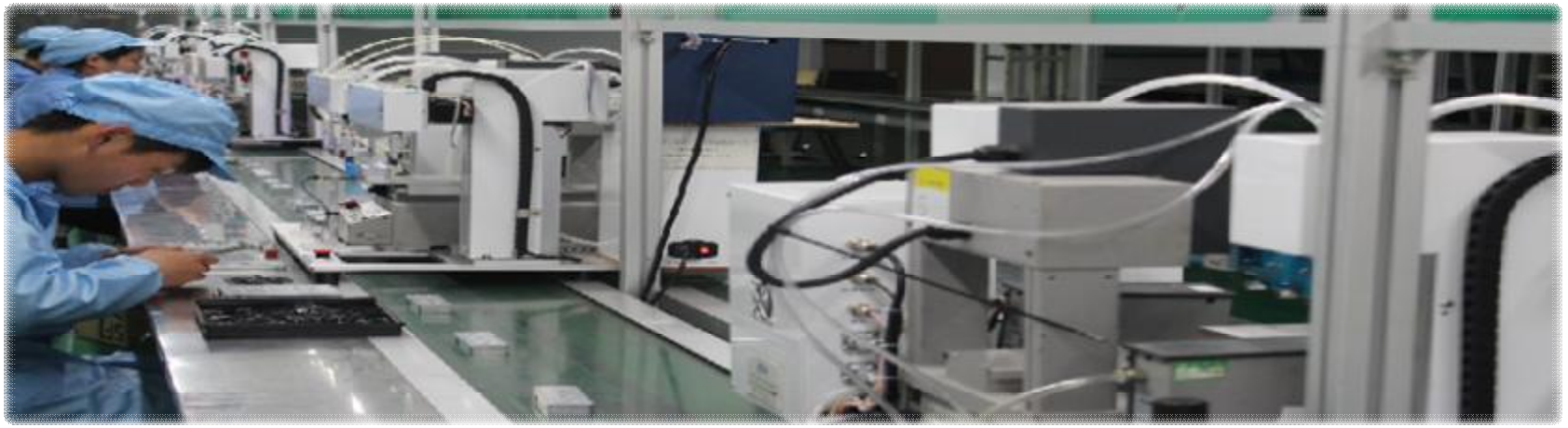
Unnecessary activities at work

Transport

In too many transport products

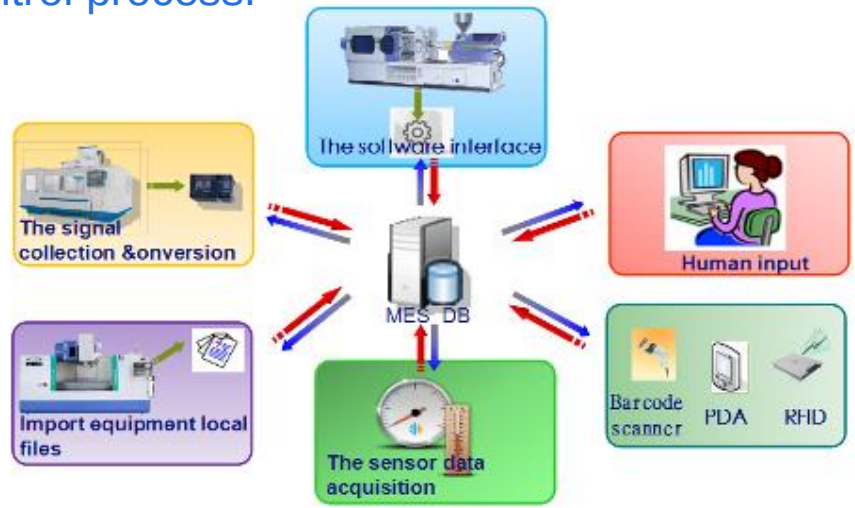
Excessive processing

Not add value to clients or business work



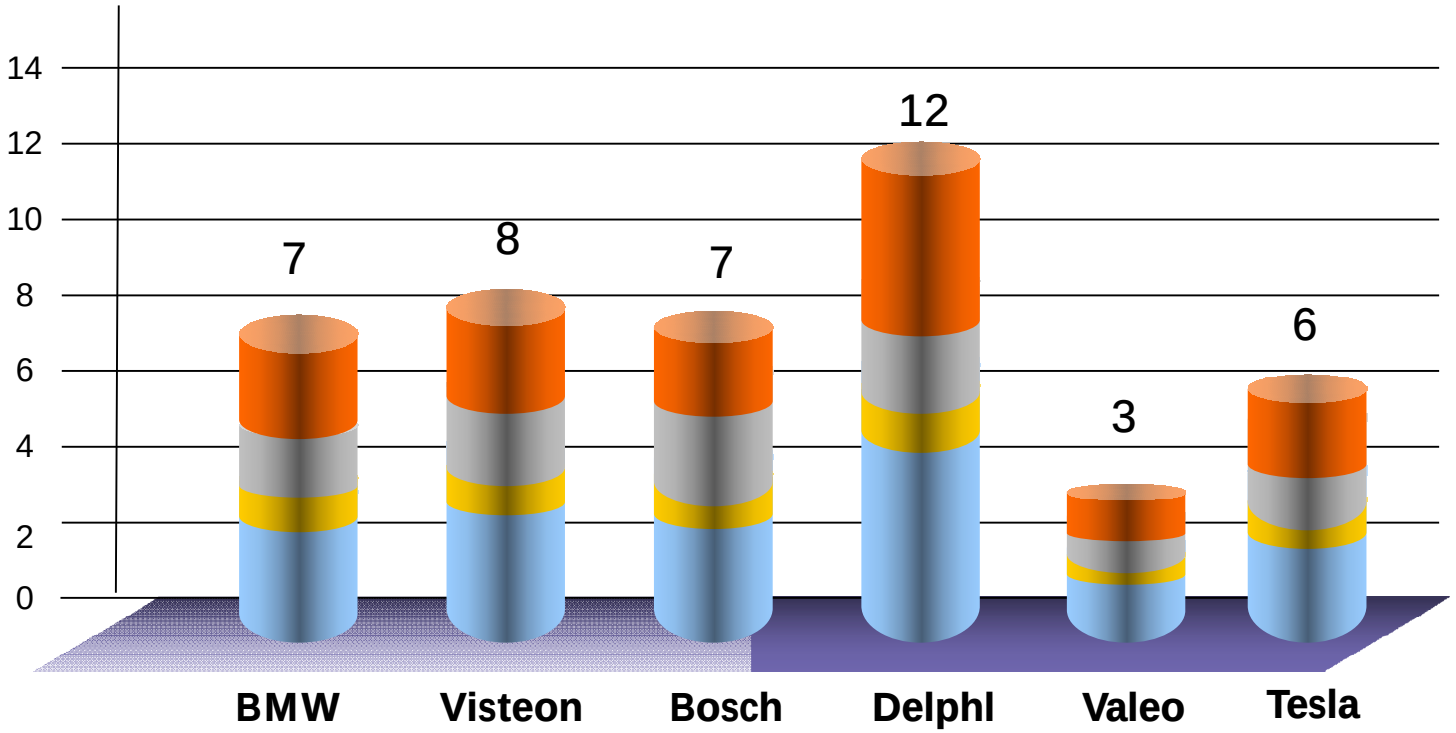
Robots are widely used in personnel more production lines, can be more efficiency, stable quality and reduce the cost of control process.

The micro welding robot with machine vision

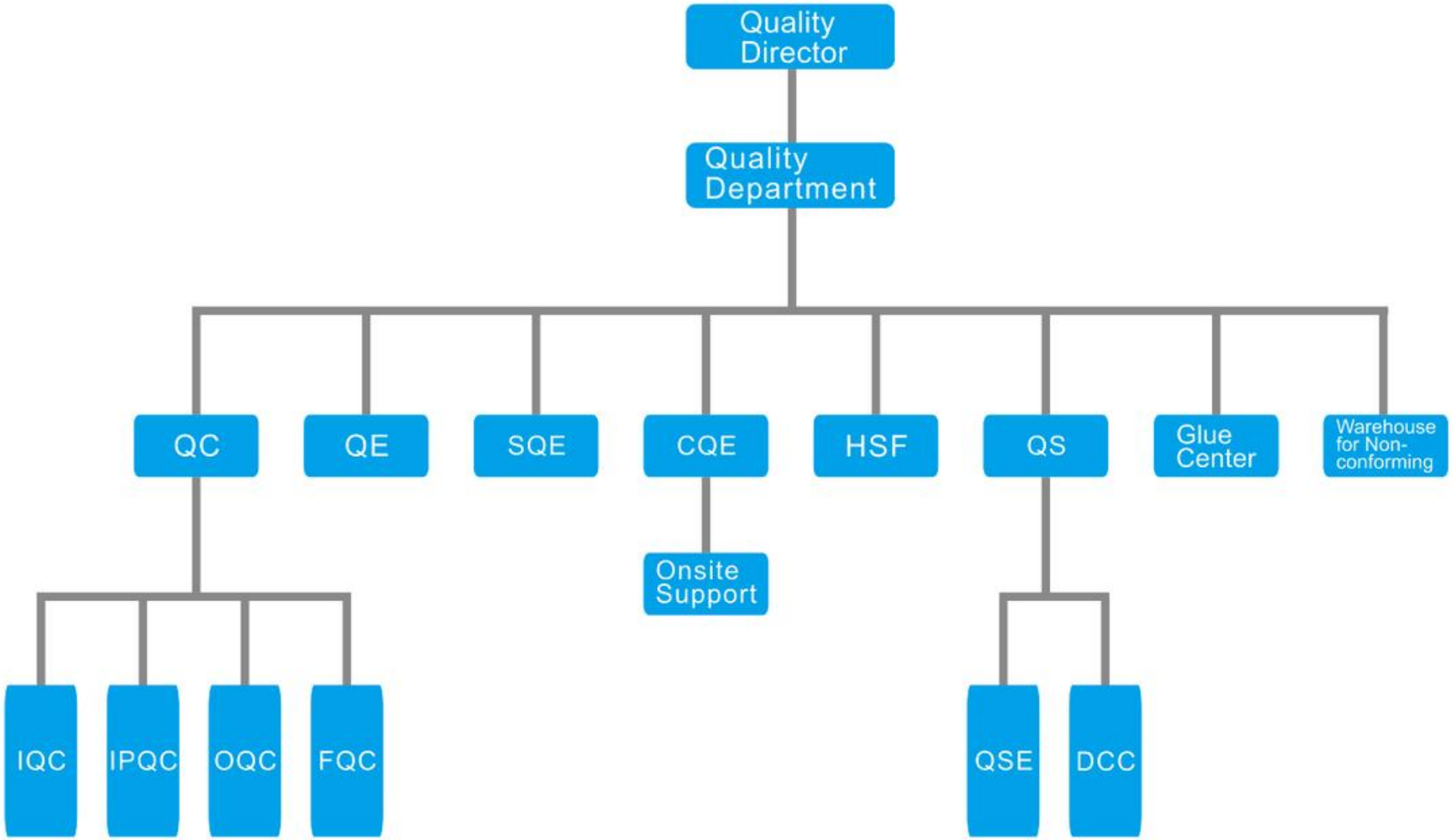


MES installation with bus control system

Automotive electronics important customer PPM average histogram



Quality Dep Organization Chart



Milestones of Quality

Management System in BeStar Manufacturing

General Quality	
ISO9001:1994	Jul,2005
Update	Dec,2008
ISO9001:2008	Dec,2009
Update	Jul, 2012
Update	Aug,2015

Environmental	
ISO14001:2004	Jan,2006
Update	Dec,2008
Updated	Oct,2013

Automotive Specific	
ISO/TS 16949:2002	Jun,2006 TUV
Update	Jun,2009 TUV
ISO/TS 16949:2009	Jul,2010 TUV
Update	Jun,2012 TUV
Update	May ,2015 TUV

Medical Appliance	
ISO13485:2003	Feb,2011
Update	Sep, 2014

Next step **QC0 80000 & EICC**

Quality Policy

·Innovation of Technologies

·Realization of Best quality

·Scientific Research Management

·Dedicate to Keeping Improvement

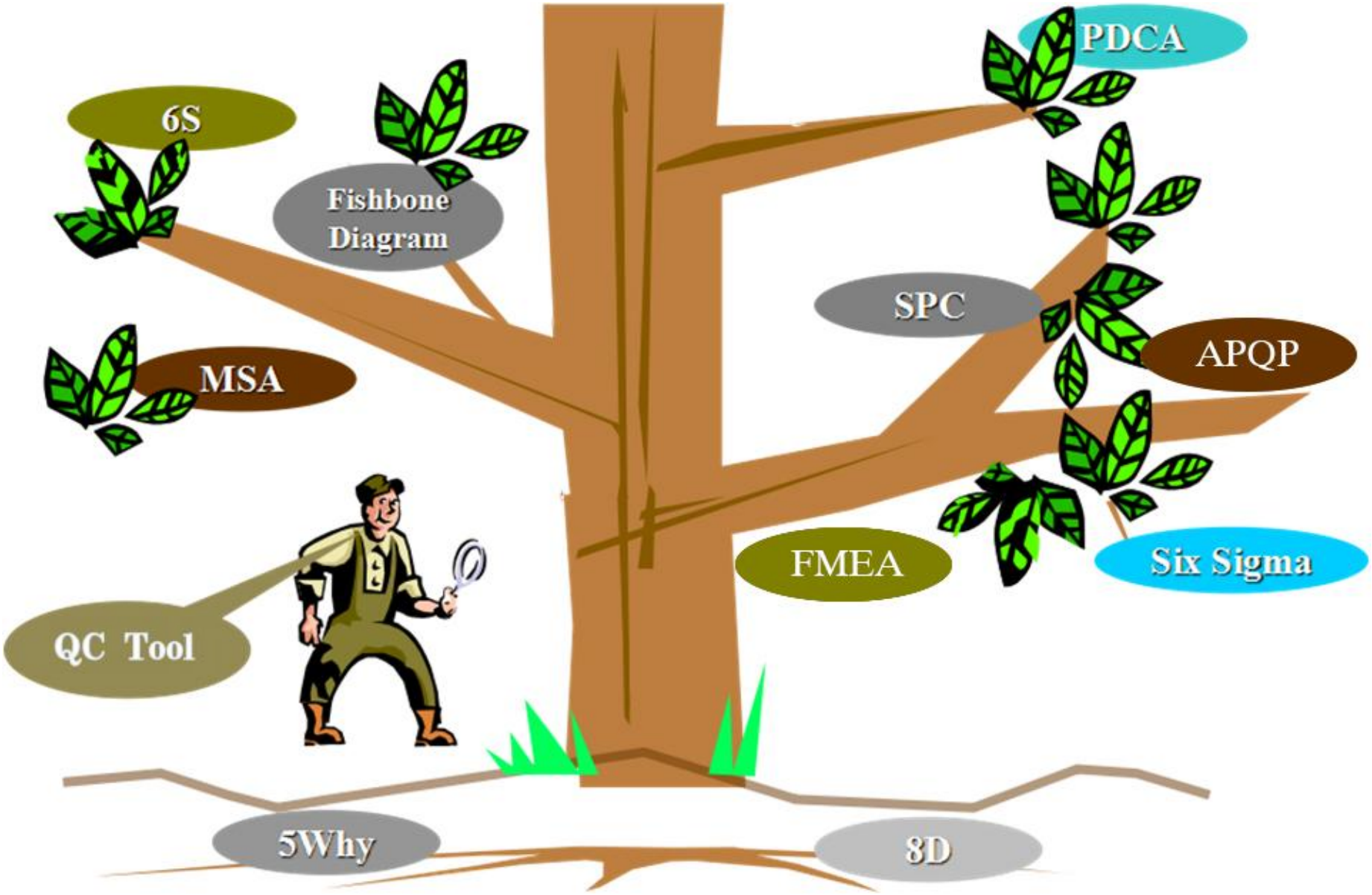
ISO13485 TS16949 ISO9001 ISO14001

Environmental Objectives and Policy

- Power consumption fell 1% than previous year on million quantity
- Solid waste collection and handling 100% classification
- Fire accidents0

- To comply with environmental laws and regulations
- Saving energy and reducing consumption raise the consciousness of environmental protection
- Implement pollution prevention and control

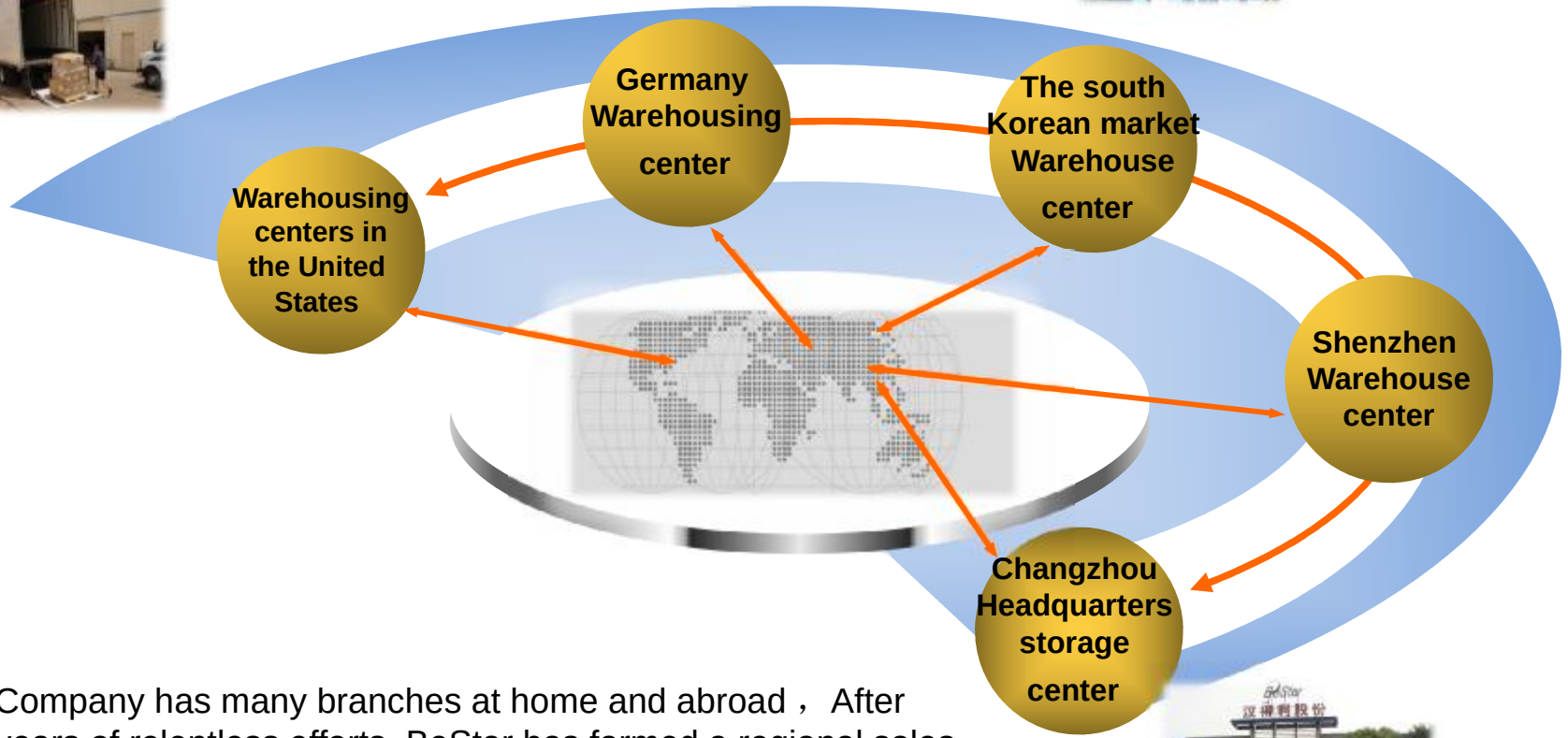
Tools of Quality Control



Rapid Response

24 h——Feedback customer 5 day ——Improvement measures

- D1 Establish a team
- D2 Problem description
- D3 Implement and validate temporary measures
- D4 Root cause analysis
- D5 Take corrective action
- D6 Corrective actions to verify
- D7 Take preventive measures
- D8 Congratulations to the team



Company has many branches at home and abroad， After years of relentless efforts, BeStar has formed a regional sales market centered on the Yangtze River & Pearl River Deltas, radiating to Europe, North America and Southeast Asia.

We with the best quality service, the fastest logistics speed to meet the customers the ultimate goal of zero inventory.

product Application

Automotive Electronics 40%

Consumer Electronics（communication、 Home Appliances）38%

Security Alarm 5%

Health care 15%

Internet of things、smart wear 2%

Please click on the text classification view product roadmap

Reliability and Life Test

Constant temperature & humidity

Reflow Soldering Test

Life Test

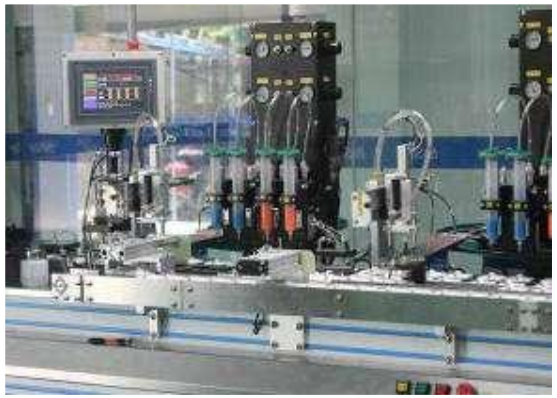
Cold & Hot Shock Test

Alternating Hot and Humid

Drop Test

Progress Technology - 1

Automatic Assembly



Automatic Gluing

Automatic Coil Windingg

Laser Printing

Automatic welding

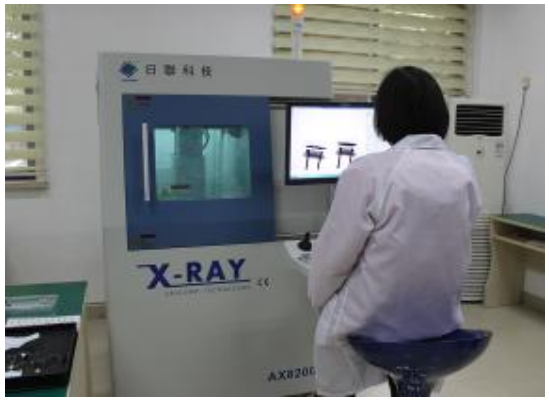
Automatic Coil Winding

Piezoelectric Process

Testing Analysis

XRF

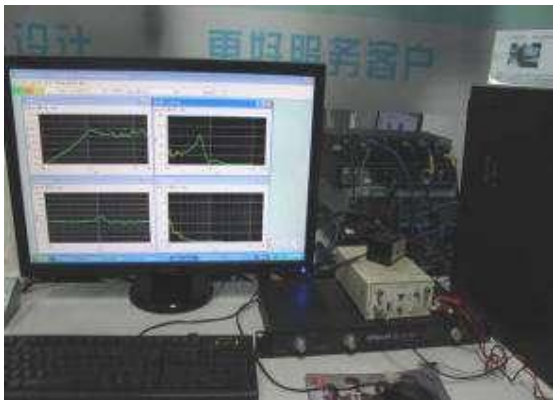
X-Ray Analyzer



Coordinate Measuring Machine

Klippel

Soundcheck



ESD Test Equipment

Attachment:

The Product Roadmap Links

主要客户--汽车电子


BMW
BYD
Haima
海马汽车
NISSAN
Ford
RENAULT
DAIMLER
CAT
XCMG
徐工集团
Linde
林德
CNH
INDUSTRIAL
HELLA
LIEBHERR
BOMAG
ISUZU
PALFINGER
Visteon
Valeo
BOSCH
Continental
YAZAKI
日本精机株式会社
Stoneridge
DELPHI
DeTeWe
TTE
Tianyouwei
WHETRON
Innovation Perfection Reciprocity

主要客户--通讯电子


LG


SAMSUNG
三星电子


SK telecom


Sprocomm


万利达


VESTEL


LAVA


micromax
nothing like anything


DEWAV


miKi


HUIYE


sim
SIM Technology


智慧海派
HIPAD INTELLIGENT

主要客户--消费电子


flex
LIVE SMARTER
JABIL
SANMINA
CELESTICA
BITRON
HVAC systems
IMI
DIEHL
Controls
Lexmark
nventec
BYD
Benchmark
electronics
B/S/H/
Whirlpool
CANDY
Panasonic
Electrolux
RAZER
PHILIPS
HID
hp

Honeywell

霍尼韦尔

NITTAN

主要客户--健康护理

雅培 Roche Johnson & Johnson 强生 PHILIPS

SIEMENS Hill-Rom Medtronic

GE Panasonic ghd good hair day, every day® tria


legrand®


vivint.


NORTEK
GLOBAL HVAC


RISCO
GROUP

Technology Roadmap of Speaker

Used in the automotive instrument panels、reverse prompting devices

2002-2004

BMS36100PCWFR3MG3-HT

φ39.6×42.5mm
Rated Power:0.25w
F0 :450±100Hz
Output SPL (1W/1m/1KHz) :83±3dBA
Operating Temperature: -40...+90° C
Storage Temperature: -40...+90° C
Pin contact

BMS23032PCW-II-01-D

φ30×12.8mm
Rated Power:0.15w
Frequency range:1000-4000Hz
Output SPL: min 90dB at 0.1 m
Operating Temperature: -40...+90° C
Storage Temperature: -40...+90° C
Pin contact

2004-2006

BMS3432-01

φ37×16.5mm
Rated Power:0.3w
F0 :400±15%Hz
Output SPL (0.1W/1m/1KHz) :72±2dBA
Operating Temperature: -40...+90° C
Storage Temperature: -40...+90° C
Pin contact

BMS3650L-LF

φ42×13mm
Rated Power:1w
F0 :560±150Hz
Output SPL :Min 79dBA
Operating Temperature: -40...+85° C
Storage Temperature: -40...+85° C
Pin contact

2006-2010

BMS3432-02P LF

φ37×16.5mm
Rated Power:0.3w
F0 :400±15%Hz
Output SPL (0.1W/1m/1KHz) :72±2dBA
Operating Temperature: -40...+90° C
Storage Temperature: -40...+90° C
Spring contact

BDT3032H12.8-02 LF

φ30×12.8mm
Rated Power:1.3w
Frequency range:1000-4000Hz
Output SPL: min 90dB at 0.1 m
Operating Temperature: -40...+90° C
Storage Temperature: -40...+90° C
Pin contact

2010-2014

BMS34-11-08H4.1RP LF

φ34×14.1mm
Rated Power:0.5w
Output SPL: 72±3dB(0.1W/0.5m/1KHz)
F0:400Hz±20%
Operating Temperature: -40...+90° C
Storage Temperature: -40...+90° C
Spring contact

BDT3032H14.7W65J LF

φ30×14.7mm
Rated Power:1.3w
Frequency range:1000-4000Hz
F0: 500±100Hz
Operating Temperature: -40...+90° C
Storage Temperature: -40...+90° C
Terminal contact

2015 -

BLS50-12-08H
21.5W080 LF

φ60×21.5mm
Rated Power:2w
Frequency range:200-10KHz
F0: 350±15%Hz
Operating Temperature: -40...+85° C
Storage Temperature: -40...+85° C
Terminal contact

Technology Roadmap of Micro Speaker

Used in the cell phones、tablets、such as communication electronic products

2008-2009	2010-2012	2013-2014	2014-2015
BMS2030-11C-08H 4.8RW LF	BMS2014P-11C-08H03 LF	BBS4020-08H4.5 LF	BMS1511F-11C-08H03P LF
20×30x4.5 mm (Driver) Rated Power：0.8W Max Power：1W SPL：91±3dB at 0.1m/0.1W	20×14×3.0mm Rated Power：0.8W Max Power：1W	15×11×3.0mm Rated Power：0.5W Max Power：1W SPL：89±3dB at 0.1m/0.5W at 2KHz	15 x11 x 3.0mm Rated Power：0.7W Max Power：1W SPL：89±3dB/0.1m/0.7W at 2KHz THD :≤1% (at 1.0~10KHz/0.7W)
			
BMS2014P-11C-08H 3.3RP LF	BMS1813F-11C-08H4.5 LF	BMS1511F-11C-08H3.5P LF	BMS1511F-11C-08H03-D LF
20x14 x3.3(mm) Rated Power：0.7W Max Power：1W SPL：90±3dB at 0.1m/0.1W at 0.8k,1.0kl,1.2k,1.5k average	18 x13 x 4.5(mm) Rated Power：0.5W Max Power：0.7W SPL：92±3dB at 0.1m/0.5W at 2KHz	15 x11 x 3.5mm Rated Power：0.7W Max Power：1W SPL：89±3dB/0.1m/0.7W at 2KHz THD:≤1% (at 1.0~10KHz/0.7W)	15×11×3.0mm Rated Power：0.7W Max Power：1W SPL：92±3dB at 0.1m/0.7W at 2KHz F0:850±20%Hz（in 1.0cc box） 500±20%Hz（in free air）
			

Technology Roadmap of Micro Speaker

Used in the cell phones、tablets、such as communication electronic products

2014-2015

2016-

BMS1609F-11C-08H03-D

16*10*3.0mm
Rated Power：0.7W
Max Power：1W(in 1.0cc box)
SPL：89±3dB at 2KHz 0.1 m/0.7W/
(in 1.0cc box)
FO：850Hz ± 20%(in 1.0cc box)

BMS1813F-11C-08H2.5-D LF

18*13*2.5mm
Rated Power：0.7W(in 1.5cc box)
Max Power：1W(in 1.5cc box)
SPL：92±3dB at 2KHz 0.1 m/0.7W/(in 1.5cc box)
FO：800Hz ± 20%(in 1.5cc box)

BBS129-04H8.7-L

50.22*23*8.7(mm)
Rated Power：1.4W
Max Power：2.0W
SPL：98±3dB/0.1 m/1.4W at 2KHz
FO：750Hz ± 20%

BBS129-04H8.7-R

50.22*23*8.7(mm)
Rated Power：1.4W
Max Power：2.0W
SPL：98±3dB/0.1 m/1.4W at 2KHz
FO：750Hz ± 20%

BMS1609F-11C-08H2.5-F

16*9*2.5mm
Rated Power：0.9W(in 1.0cc box)
Max Power：1.3W(in 1.0cc box)
SPL：91±3dB at 2KHz 0.1 m/0.9W/(in 1.0cc box)
FO：750Hz ± 20%(in 1.0cc box)

BBS103-04H4.3LF

69.7*27.6*4.5(mm)
Rated Power：2W
Max Power：2.5W
SPL：98±3dB/0.1 m/2W at 2KHz
FO：800Hz ± 20%

BMS2010F-11C-06H2.6

20*10*2.6mm
Rated Power：0.7W(in 1.0cc box)
Max Power：1W(in 1.0cc box)
SPL：90±3dB at 2KHz 0.1 m/0.7W/(in 1.0cc box)
FO：700Hz ± 20%(in 1.0cc box)

S1508F-11C-06H2.5P

15*08*2.5mm
Rated Power：0.5W(in 0.8cc box)
Max Power：0.8W(in 0.8cc box)
SPL：89.5±3dB at 2KHz 0.1 m/0.5W/(in 0.8cc box)
FO：830Hz ± 20%(in 0.8cc box)

Technology Roadmap of Micro Speaker

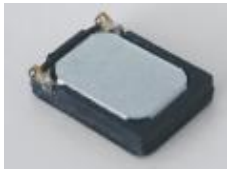
Used in the **mobile phones, tablets, smart wear, etc**

2012 → 2016 → 2017

2012

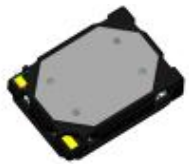
BMS1511F-11C-08H03P-D LF

15x11x3.0mm
Maximum Input Power:1.0W(in 1cc box)
Resonance Frequency : 500Hz ±20%(in free air i)
SPL at 2KHz,10cm:Min3dB
Operating Temp: -20~+ 70° C



BMS1511F- 11C- 08H2. 5W LF

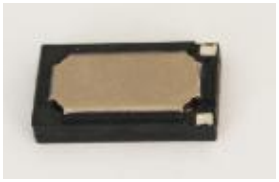
15x11x2. 5 mm
Maximum Input Power: 1. 0W(2. 83 Vr ms/ i n 1cc box)
Resonance Fr equency:550Hz±20%(i n f r ee ai r)
Fr equency Response:F0~20KHz
SPL:94±3dB/ 0. 1m/ 0. 5W at 0. 8~1. 5KHz aver age i n 1.0cc box



2016

BMS1609F-11C-08H03-D

16x9x3.0mm
Frequency Response :Fo~20KHz
Resonance Frequency :850Hz ± 20%(in 1.0cc box)
SPL :90.5±3dB at 2KHz 0.1m/0.7W/(in 1.0cc box)
Operating Temp: -20~+ 70° C



BMS1508F-11C-08H2.5P

15x8x3.0mm
Rated power:0.5W（2V）
Maximum power:0.8（2.53V）
SPL:89.5±3dB at2V (0.5W0.1m)in 0.8cc box
Fo: 830±15%

2017

BMS1511F-11C-08H2.5W LF

15x11x2.5mm
Frequency Response :Fo~20KHz
Resonance Frequency :850Hz±20%(in 1.0cc box)
SPL :94±3dB/0.1m/0.5W at 0.8~1.5KHz (in1.0cc box)

BMS1511F-11C-08H2.5P-F

15 x11 x 2.5mm
Rated power:0.7W(2.37V)
Maximum power:1.0W（2.83V）
SPL:89±3dB/0.1m/0.7W at 2KHz
Operating Temp : -20~+ 70° C

Technology Roadmap of Magnet Buzzer

Used in the trunk prompt device、backup alarm and all safety systems in the automotive industry

2002-2004	2004-2005	2005-2008	2009-2012	2013-2014	2014-2016
BMT1201 BMT0905	BMT1612	BMT2512	BMT3212H 13 LF	BMT3212XH 17 LF	BMT3212H 17 LF
Φ12×8.5 1.5Vo-p,2048Hz SPL(0.1m):85dB Φ9*5.5 5Vo-p,2731Hz SPL(0.1m): 82dB	Ø16*14 12Vo-p, 2048Hz SPL(0.1m): 85dB	Ø25*12 12Vo-p,800Hz SPL(0.1m): 93dB	Ø32*13 12Vo-p,740Hz SPL(0.1m): 87dB	Ø32*17 12V,(770-850)±5%Hz SPL(0.1m):89 ±3dBA	Ø32*17 12Vo-p，800Hz SPL(0.1m):85dBA
	SMT8585 SMT7575	SMT1212 SMT1010		SMT5050 SMT5555	SMT1715
	8.5*8.5*3.6 3V,2730Hz SPL(0.1m): 85dB 7.5*7.5*2.5 3.6V, 2700Hz SPL(0.1m): 85dB	12.8*12.8*7.0 5V,2400Hz SPL(0.1m):85dB 10*10*3.2 3.6V,2830Hz SPL(0.1m):93dB		5.0*5.0*2.0 3V,4000Hz SPL(0.1m): 75dB 5.5*5.5*2.5 3V,3100Hz SPL(0.05m): 87dB	17*15*12 12Vo-p, 2000Hz SPL(0.1m):90dB

Technology Roadmap of Electromagnetic patch type

Used in the Glucose meter, analysis of various medical instrumentation such as device

2002-2003 → 2005-2006 → 2007-2008

2002-2003	2005-2006	2007-2008
SMT8585-03H03	SMT5050-03H03-02	SMT1212-05H6.5F-03
Φ8.5*8.5*3.0 3V,2731Hz SPL(0.1m): 85dBA	Φ5.0*5.0*3.0 3V,4000Hz SPL(0.1m): 78dBA	Φ12.8*12.8**7.0 5V,2400Hz SPL(0.1m): 85dBA
		
SMT0903H4.4	SMT8585-3.6H04	SMT5050-03H02
Ø9.0*4.4 3V,2730Hz SPL(0.1m): 85dBA	Φ8.5*8.5*4.0 3.6V,2730Hz SPL(0.1m): 87dBA	Φ5.0*5.0*2.0 3V,4000Hz SPL(0.1m): 75dBA
		

SMT5555-03H2.5

Φ5.5*5.5*2.5
3V,3100Hz
SPL(0.1m): 80dBA

SMT1411-05H03

Φ14.0*11.0*3.0
5V,2730Hz
SPL(0.1m): 85dBA

2011 -2015

SMT0903H3.2-02

Ø9.0*3.2
3.6V,2731Hz
SPL(0.1m): 87dBA

Technology Roadmap of Piezoelectric Buzzer

Used in the home appliances、 portable devices、industrial controls and many other products

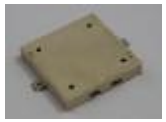
2002-2004

BPT2909H7.5 LF

ф 29.6×7.5mm
Rated Voltage:9Vp-p
Capacitance at 120Hz:20000 30% pF
SPL at 2500KHz,10cm:Min85dB
Operating Temp.: -40-+85° C
Storage Temp.: -40-+85° C

BSP1616-03H2.5B LF

ф16×16mm
Rated Voltage: 3Vp-p
Capacitance at 120Hz:14±30%nF
SPL at 4KHz,10cm:Min70dB
Operating Temp.: -40-+120° C
Storage Temp.: -40-+120° C



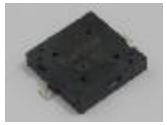
2004-2006

BPT4512H18.4

Φ44.5×18.4mm
Rated Voltage:12Vp-p
Capacitance at 120Hz:150±30%nF
SPLat 4KHz,10cm:Min102dB
Operating Temp.: -30-+70° C
Storage Temp.: -30-+80° C

BSP1313-05H2.5 LF

ф13×13mm
Rated Voltage: 5Vp-p
Capacitance at 120Hz:16±30%nF
SPL at 4.1KHz,10cm:Min75dB
Operating Temp.: -40-+105° C
Storage Temp.: -40-+105° C



2007-2008

BPT4518H15.2 LF

ф45×15.2mm
Rated Voltage: 18Vp-p
Capacitance at 120Hz:180±30%nF
SPLat 4KHz,10cm:Min108dB
Operating Temp.: -30-+90° C
Storage Temp.: -30-+100° C

BSP1109-05H1.7 LF

ф11×9mm
Rated Voltage: 5Vp-p
Capacitance at 120Hz:10±30%nF
SPL at 4.1KHz,10cm:Min75dB
Operating Temp.: -40-+105° C
Storage Temp.: -40-+105° C

2008-2010

S-63

ф68.2×68.2mm with 28AWG
STRANDED PER UL1081
DC:12VDC+Customer`s PCB
Capacitance at 120Hz:150±30%nF
SPL at 2m:Min105dB
Operating Temp.: -20-+70° C
Storage Temp.: -30-+80° C

2011-2013

BSP1212-03H03-06 LF

ф12×12mm
Rated Voltage: 3Vp-p
Capacitance at 120Hz:16±30%nF
SPL at 4KHz,10cm:Min75dB
Operating Temp.: -40-+85° C
Storage Temp.: -40-+85° C

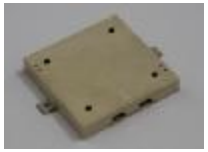
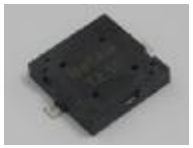
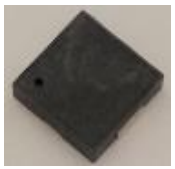
2015 -

BPS2030H1.3-01

ф20×30×1.6mm
Rated Power:7Vrms
Resonance frequency:800±150Hz
Output SPL at 5Vrms 5cm:98.5±3dB
Operating Temp.: -20-+70° C
Storage Temp.: -30-+85° C

Technology Roadmap of Pressure DianTie chip

Used in the portable medical equipment, wearable devices

2002-2004	2004-2006	2012-2015
BSP1616-03H2.5	BSP1109-05H1.7 LF	BPS2030H1.3-01
16×16mm Rated Voltage: 3Vp-p Capacitance at 120Hz:16±30%nF SPL at 4KHz,10cm:Min75dB Operating Temp: -40-+120° C Storage Temp: -40-+120° C	11×9mm Rated Voltage: 5Vp-p Capacitance at 120Hz:10±30%nF SPL at 4.1KHz,10cm:Min70dB Operating Temp:-40-+105° C Storage Temp:-40-+105° C	20×30×1.6mm Rated Power:7Vrms Resonance frequency:800±150Hz Output SPL at 5Vrms 5cm:96.5±3dB Operating Temp: -20-+70° C Storage Temp: -30-+85° C
		
BSP1313-05H2.5-05 LF	BSP1212-03H03-08 LF	BSP0909-05H1.9 LF
13×13mm,Water proof Rated Voltage: 5Vp-p Capacitance at 120Hz:16±30%nF SPL at 4.1KHz,10cm:Min75dB Operating Temp:-40-+105° C Storage Temp: -40-+105° C	12×12mm Rated Voltage: 3Vp-p Capacitance at 120Hz:16±30%nF SPL at 4KHz,10cm:Min75dB Operating Temp: -40-+85° C Storage Temp:-40-+85° C	9×9mm Rated Voltage: 5Vp-p Capacitance at 120Hz:10±30%nF SPL at 4.1KHz,10cm:Min68dB Operating Temp: -20-+70° C Storage Temp: -30-+80° C
		

Technology Roadmap of Back-up Alarm

Used in the forklift 、road roller、excavator

2003-2006

F/HU100P12VIP67B

Rated Voltage (DC):12V
Current: <300mA
SPL(1m):100±3dB(A)
Tone: pulse tone
Frequency: 3000±200Hz
Waterproof: IP67

2006-2008

F/HU90P10-100VIP67B

Rated Voltage (DC):10/100V
Current: <300mA
SPL(1m):>90dB(A)
Tone: pulse tone
ON/OFF: 80±10C/M
Frequency: 2800±200Hz
Waterproof: IP67

2008-2010

F/HU110P12VIP67B

Rated Voltage (DC):12V
Current: <200mA
SPL(1m):>=110dB(A)
Tone: pulse tone
ON/OFF: 80±10C/M
Frequency: 3000±200Hz
Waterproof: IP67

2010-2011

BNS92IP67B10-28VNA-01

Rated Voltage (DC):12V/24V
Current: <300mA
SPL(1m):>=92dB(A)
Tone: pulse tone
ON/OFF: 80±10C/M
Frequency: white noise
Waterproof: IP67

2011-2012

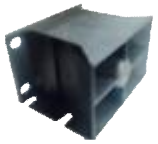
BUS82-102PW

Rated Voltage (DC):12V/24 V
Current: <600mA
SPL1(1.2m):>=78dB(A)
SPL2(1.2m):>=100dB(A)
Tone: pulse tone
ON/OFF: 80±10C/M
Frequency: 1500±200Hz
Waterproof: IP67

2012-2013

BUS112PW

Rated Voltage (DC):12V/24V
Current: <800mA
SPL(1.2m):112±4dB(A)
Tone: pulse tone
ON/OFF: 80±10C/M
Frequency: 1400±200Hz
Waterproof: IP67



2013-2014

BUS107pw-03

Rated Voltage (DC):24V
Current: <=0.65A at 24VDC
SPL(1.2m):107±4dB(A)
Tone: pulse tone
ON/OFF:80±10C/M
Frequency: 1200±200Hz
Waterproof: IP65

2014-2015

E-Sound-A

Rated Voltage (DC):9-16V
Current: <=100A
SPL(1.2m):60-80dB(A)
Tone: slowly change tone
Waterproof: IP67

Technology Roadmap of Industrial Alarm

Used in the industrial equipment、 liquefied gas station、oil depot etc

2003-2004

BPT-380XAP24VDC

Rated Voltage (DC):24V
Current: ≤20mA
SPL(30cm):≥95dB(A)
Tone:Fast pulse
Frequency: 2900±500Hz

2004-2006

BPT4334C12VDCB

Rated Voltage (DC):12V
Current: ≤20mA
SPL(1m):85±3dB(A)
Tone: constant
Frequency: 2900±500Hz
Conect mode: pin

2006-2007

BPT4334P12VDACB

Rated Voltage :12VDC/AC
Current: ≤20mA
SPL(1m):85±3dB(A)
Tone:pulse
ON/OFF Cycle:120C/M±20
Frequency: 2900±500Hz
Waterproof: IP67

2007-2010

BPT4334CP12VDCB

Rated Voltage (DC):12V
Current: ≤20mA
SPL(1m):85±3dB(A)
Tone: constant /pulse tone
Frequency: 2900±500Hz
Conect mode: pin
Waterproof: IP65

2010-2012

BPT4334CP24VDAC

Rated Voltage (DC/AC):24V
Current: ≤20mA
SPL(1m):85±3dB(A)
Tone: constant /pulse
On/Off Cycle: 120C/M±20
Frequency: 3000±500Hz
Conect mode: terminal

2012-2013

BPT2612-80BW LF

Rated Voltage (DC):12V
Operating Voltage (DC):5—15V
Current:≤10mA at 5V
≤10mA at 15V
SPL(60m):92±5dB(A) at 5V
103±5dB(A) at 15V
Tone: constant
Frequency: 2900±250Hz

2013-2014

BPT3226C28VDCBW

Rated Voltage (DC):28V
Current: ≤50mA
SPL(1m):90±5dB(A)
Tone: constant
Frequency: 2800±500Hz
Waterproof: IP67

2014-2015

BPT4024XH31W-V

Rated Voltage (DC):24V
Current: ≤50mA
SPL(1m):73±5dB(A)
Tone: pulse
Frequency: 3200±500Hz

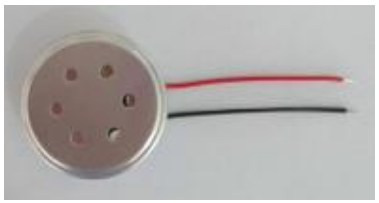
Technology Roadmap of Security Alarm Unit

Used in the intelligent security alarm system

2013-2014 → 2015-

CMT39B-22R-Y50 LF

ф 39×15.3mm
The SPL at 24V 1m: 106±3dB
DC Resistance： 22Ω±10%
AC Impedance at 1K Hz: 75Ω±25%
Frequency Range: 300~3400Hz



CMT47B-300RM

ф 46.5×17mm
Sensitivity at 1K Hz: -52±3dB
AC Impedance at 1K Hz: 300Ω±25%
Distortion:≤2% at 94 dB SPL
Frequency Range: 300~3400Hz

CMT39B-22R LF

ф 39×15.3mm
Sensiticity at 1KHz 1V:min.dB 110dB
DC Resistance： 22Ω±10%
AC Impedance at 1K Hz: 75Ω±25%
Frequency Range: 300~3400Hz

CMT47A-18R LF

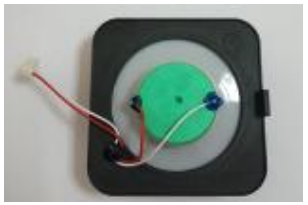
ф 46.5×15.6mm
Min. SPL at 2K Hz 24 Vp-p: 100dB
Coil Resistance： 18±2Ω
Operating Volatage range:1~30 Vp-p
Operating Frequency (Fo): 2000±500Hz

S57

ф 58*8.5mm
Resonant Frequency :3.2±0.3K Hz
Resonant Impedance :≤300Ω
Capacitance at 120H z :150±30%nF

S63

ф 68.2*68.2*18.5mm
Rated Voltage :DC 12V
(Average SPL) : 105~118dB at 2m
Capacitance at 120Hz : 150±30%m
Operating Voltage :3…65P-P
Waterproof:IPxqk



CMT47A Ni-300

ф 46.5×19.6mm
Average Sensiticity at 1V:min.dB 113dB
DC Resistance： 22Ω±10%
AC Impedance at 1K Hz: 300Ω±20%
THD(at 1K Hz,600mV):＜ 5%

CMT47B Al-300

ф 46.2×19.2mm
Average Sensiticity 600mV: min.dB 112dB
at 150~4K Hz
AC Impedance at 1K Hz: 300Ω±20%
AC Impedance at 2.6K Hz: 600Ω±20%
THD(at 1K Hz,2V):＜ 5%

Technology Roadmap of Enclosed the Sensor

Used in the automotive assisting driving

2010-2012	2013-2014	2015-
BPU1440IFAH09 ϕ 14×9mm Maximum Input Voltage:160Vp-p Capacitance at 1KHz:2100±25%PF SPL at 40KHz,10cm:Min90dB Directivity:110×50deg Detectable Range:0.3...2m 	BPU1840IFAH12 ϕ 18×12mm Maximum Input Voltage:160Vp-p Capacitance at 1KHz:2100±25%PF SPL at 40KHz,10cm:Min90dB Directivity:80deg Detectable Range:0.3...2m 	BPU1458IFAH09-03 ϕ 14×9mm Maximum Input Voltage:160Vp-p Capacitance at 1KHz:1900±10%PF SPL at 58KHz,10cm:Min80dB Directivity:110×50deg Detectable Range:0.3...3m 	BPU1458IFAH12 ϕ 14×9mm Maximum Input Voltage:160Vp-p Capacitance at 1KHz:1900±10%PF SPL at 58KHz,10cm:Min80dB Directivity:110×50deg Detectable Range:0.3...3m 
BPU1440IFAH09-01 ϕ 14×9mm Maximum Input Voltage: 160Vp-p Capacitance at 1KHz:2100±25%PF SPL at 40KHz,10cm:Min90dB Directivity:110X50deg Detectable Range:0.3...2m 	BPU1448IFAH09 ϕ 14×9mm Maximum Input Voltage:160Vp-p Capacitance at 1KHz:2100±25%PF SPL at 48KHz,10cm:Min85dB Directivity:110×50deg Detectable Range:0.3...2m 	BPU1458IFAH09-05 ϕ 14×9mm Maximum Input Voltage: 160Vp-p Capacitance at 1KHz:1800±25%PF SPL at 58KHz,10cm:Min80dB Directivity:80X35deg Detectable Range:0.3... 3.5m 	BPU1558IFAH09 ϕ 15.5×9mm Maximum Input Voltage:160Vp-p Capacitance at 1KHz:2100±25%PF SPL at58KHz,10cm:Min90dB Directivity:120×60deg Detectable Range:0.3...3m 

Technology Roadmap of Open Structure Sensor

Used in induction switch、 Internet、industrial automation etc

2004-2006	2007-2009	2010-2013	2014-2016
BPU1640T/ROAH12 ϕ 16×12mm Maximum Input Voltage: 60Vp-p Capacitance at 1KHz:2500±25%PF SPL at 40KHz,10cm:Min110dB Directivity:50deg Detectable Range:0.7...18m 	**BPU1640T/ROPBH12** ϕ 16×12mm Maximum Input Voltage: 60Vp-p Capacitance at 1KHz:2500±25%PF SPL at 40KHz,10cm:Min110dB Directivity:50deg Detectable Range:0.7...18m 	**BPU1240T/ROPBH9.2** ϕ 12×9.2mm Maximum Input Voltage: 60Vp-p Capacitance at 1KHz:2200±25%PF SPL at 40KHz,10cm:Min112dB Directivity:80deg Detectable Range:0.7...18m 	**BPU0840T/ROPBH06** ϕ 8×6mm Maximum Input Voltage: 60Vp-p Capacitance at 1KHz:2500±25%PF SPL at 40KHz,10cm:Min115dB Directivity:80deg Detectable Range:0.7...6m 
BPU1640IOAH12 ϕ 16×12mm Maximum Input Voltage: 60Vp-p Capacitance at 1KHz:2500±25%PF SPL at 40KHz,10cm:Min110dB Directivity:50deg Detectable Range:0.7...18m 	**BPU1640IOPBH12** ϕ 16×12mm Maximum Input Voltage: 60Vp-p Capacitance at 1KHz:2500±25%PF SPL at 40KHz,10cm:Min110dB Directivity:50deg Detectable Range:0.7...18m 	**BPU1040T/ROPBH07** ϕ 10×7mm Maximum Input Voltage: 60Vp-p Capacitance at 1KHz:2500±25%PF SPL at 40KHz,10cm:Min115dB Directivity:50deg Detectable Range:0.7...6m 	**BPU1625T/ROPBH12** ϕ 16×12mm Maximum Input Voltage: 60Vp-p Capacitance at 1KHz:2400±20%PF SPL at 25KHz,10cm:Min112dB Directivity:85deg Detectable Range:0.7...18m 

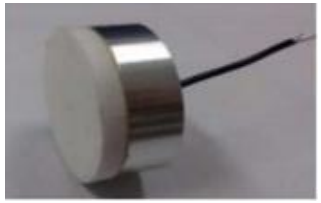
Technology Roadmap of High Frequency Sensors

Used in industrial automation detection and automatic control system

2010-2012

BPU40100IFAH17

ϕ 40×17mm
Maximum Input Voltage: 600Vp-p
Capacitance at 1KHz:900±25%PF
Directivity:9±2deg
Detectable Range:0.2...3m



BPU19175IFPH11

ϕ 19×11mm
Maximum Input Voltage: 500Vp-p
Capacitance at 1KHz:900±25%PF
Directivity:7±2deg
Detectable Range:0.1...2m

2013-2014

BPU19200IFAH11

ϕ 19×11mm
Maximum Input Voltage:500Vp-p
Capacitance at 1KHz:900±25%PF
Directivity:7±2deg
Detectable Range:0.1...2m

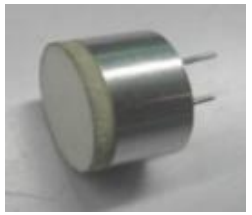
BPU25200IFPH11

ϕ 25×11mm
Maximum Input Voltage: 500Vp-p
Capacitance at 1KHz:900±25%PF
Directivity:≤14deg
Detectable Range:0.1...2m

2015-

BPU13300IFAH09

ϕ 13×9mm
Maximum Input Voltage:400Vp-p
Capacitance at 1KHz:300±25%PF
Directivity:10±2deg
Detectable Range:0.04...1m



BPU11400IFPH11

ϕ 11×11mm
Maximum Input Voltage: 300Vp-p
Capacitance at 1KHz:550±25%PF
Directivity:7±2deg
Detectable Range:0.05... 0.3m

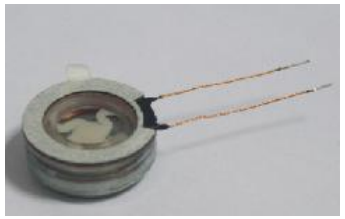
Technology Roadmap of Vibration Motor

Used in the bluetooth headset, touch screen, intelligent wear, etc

2010 → 2016

BHS16-11P-08H5.8W30 LF

Φ16X5.8mm
Resonance Frequency : 500Hz±20%
Frequency Response :F0~15KHz
S.P.L (1w/0.1m) ： 78±3dB at 1KHz
Operating Temp: -20~+55℃



BHS10-H4.3-MI

Φ10x4.3mm
Resonance Frequency: 800Hz ± 20%at 1V
Frequency Response:100~7KHz
SPL :120±3dB at 1KHz IEC318 by cellular board
Operating Temp:-20~+ 70° C

BPA3504H03 LF

Φ35×3.8mm
Voltage: 42Vrms(120Vpp)Vrms AC
Frequency :230Hz
Noise:≤50@30cm 120Vpp dBA
Acceleration:-≥0.4Grms @ 150g Jig Grms

BMV0619H3.2

Φ 6×19mm
Rated Voltage: 2.35Vrms
Frequency:190Hz±10Hz
Internal Resistance:18±2Ω
Operating Temp: -20...+70° C(0%~95%RH)

Technology Roadmap of Microphone

Used in the mobile phone, headset, vehicle-mounted devices, etc

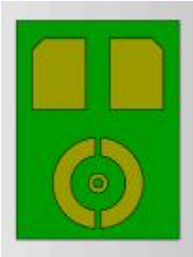
2013 → 2015

BCM4013OSBC-42 LF

Φ4.0X1.3mm
Test Condition : Vs=2V RL=2.2K Ω
Sensitivity：- 42 ±3dB (0dB=1V/Pa,1kHz)
Frequency Response：50-12kHz
Current Consumption ： 0.5mA Max.
Directivity：Omnidirectional
S/N Ratio ： More than 58dB
Connection method:SMT

BCMMEMS33525-38 LF

Φ3.35X2.5mm
Test Condition :Vs=2V RL=2.2K Ω
Sensitivity: 38±3dBFS (0dB=1V/Pa,1kHz)
Frequency Response:100Hz ~ 7KHz
Current Consumption:0.2mA Max.
Directivity:Omnidirectional
S/N Ratio:More than 58dB
Operating Voltage Range :1.5V to 3.6V
Connection method:SMT



Thank you!

BeStar Holding Co ., Ltd.
No.199.Huanghe West Road New District of Changzhou Jiangsu Province P.R.Of China
Post: 213022 Tel：0519-67896200 Fax: 0519-67896220 E-mail: wu@be-star.com http://www.bestargroups.com