



**THE DATASHEET OF  
BQ25176MDSGR**



## Type BMC Series

### Key Features

Effective EMI protection

Low DC resistance

High soldering heat resistance

Multiple size availability

Other specifications can be made on application



The BMC Series of beads cover a wide range of impedance characteristics. The chip beads have a monolithic inorganic material construction that minimises the effect of electromagnetic interference. This series is offered in 0402, 0603, 0805 1204 and 1210 package sizes

## Characteristics – Electrical

### Applications

Cellular Phones

Computers and Peripheral Equipment

Automation Controls

Sensors

VCRS, Television, Pagers

Circuit Where a Stable Ground is Unavailable

### Electrical Specifications

#### For General Signal Line Use (AN)

#### BMC 0201 AN

Part No.	Impedance ( $\Omega$ )	Tolerance	TestFreq. (MHz)	DCR ( $\Omega$ )max.	Rated Current (mA)max. at 85°C
BMC1HY0010AN	10	±25%	100	0.10	500
BMC1HY0030AN	30	±25%	100	0.30	300
BMC1HY0033AN	33	±25%	100	0.30	300
BMC1HY0040AN	40	±25%	100	0.30	300
BMC1HY0050AN	50	±25%	100	0.30	300
BMC1HY0060AN	60	±25%	100	0.35	300
BMC1HY0070AN	70	±25%	100	0.35	300
BMC1HY0100AN	100	±25%	100	0.40	200
BMC1HY0120AN	120	±25%	100	0.45	200
BMC1HY0150AN	150	±25%	100	0.50	200
BMC1HY0220AN	220	±25%	100	0.75	200
BMC1HY0300AN	300	±25%	100	0.90	150

**BMC 0402 AN**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC1EY0010AN	10	±25%	100	0.05	500
BMC1EY0030AN	30	±25%	100	0.20	300
BMC1EY0040AN	40	±25%	100	0.20	300
BMC1EY0060AN	60	±25%	100	0.40	200
BMC1EY0068AN	68	±25%	100	0.15	500
BMC1EY0070AN	70	±25%	100	0.40	200
BMC1EY0080AN	80	±25%	100	0.40	200
BMC1EY0100AN	100	±25%	100	0.45	200
BMC1EY0120AN	120	±25%	100	0.50	200
BMC1EY0150AN	150	±25%	100	0.60	200
BMC1EY0180AN	180	±25%	100	0.65	100
BMC1EY0220AN	220	±25%	100	0.28	700
BMC1EY0240AN	240	±25%	100	0.30	500
BMC1EY0300AN	300	±25%	100	0.75	100
BMC1EY0330AN	330	±25%	100	0.75	100
BMC1EY0430AN	430	±25%	100	0.50	350
BMC1EY0470AN	470	±25%	100	0.90	100
BMC1EY0500AN	500	±25%	100	1.00	100
BMC1EY0600AN	600	±25%	100	1.10	50
BMC1EY1000AN	1000	±25%	100	1.50	50

**BMC 0603 AN**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC1JY0019AN	19	±25%	100	0.10	400
BMC1JY0031AN	31	±25%	100	0.10	400
BMC1JY0052AN	52	±25%	100	0.15	400
BMC1JY0060AN	60	±25%	100	0.15	400
BMC1JY0075AN	75	±25%	100	0.15	400
BMC1JY0080AN	80	±25%	100	0.15	400
BMC1JY0100AN	100	±25%	100	0.15	400
BMC1JY0120AN	120	±25%	100	0.15	400
BMC1JY0150AN	150	±25%	100	0.15	400
BMC1JY0180AN	180	±25%	100	0.20	400
BMC1JY0200AN	200	±25%	100	0.20	400
BMC1JY0220AN	220	±25%	100	0.20	400
BMC1JY0240AN	240	±25%	100	0.17	500
BMC1JY0300AN	300	±25%	100	0.2	600
BMC1JY0400AN	400	±25%	100	0.30	400
BMC1JY0420AN	420	±25%	100	0.30	400

**BMC 0603 AN (continued)**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC1JY0450AN	450	±25%	100	0.30	400
BMC1JY0600AN	600	±25%	100	0.35	400
BMC1JY0750AN	750	±25%	100	0.35	400
BMC1JY1000AN	1000	±25%	100	0.55	300
BMC1JY1000AN1	1000	±25%	100	0.25	800
BMC1JY1500AN	1500	±25%	100	0.60	200

**BMC 0805 AN**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC2AY0017AN	17	±25%	100	0.10	300
BMC2AY0026AN	26	±25%	100	0.10	300
BMC2AY0030AN	30	±25%	100	0.10	300
BMC2AY0031AN	31	±25%	100	0.10	300
BMC2AY0052AN	52	±25%	100	0.15	300
BMC2AY0060AN	60	±25%	100	0.15	300
BMC2AY0080AN	80	±25%	100	0.15	300
BMC2AY0100AN	100	±25%	100	0.20	300
BMC2AY0120AN	120	±25%	100	0.20	300
BMC2AY0150AN	150	±25%	100	0.20	300
BMC2AY0220AN	220	±25%	100	0.25	300
BMC2AY0300AN	300	±25%	100	0.25	300
BMC2AY0400AN	400	±25%	100	0.30	300
BMC2AY0470AN	470	±25%	100	0.18	700
BMC2AY0530AN	530	±25%	100	0.35	300
BMC2AY0600AN	600	±25%	100	0.35	300
BMC2AY1000AN	1000	±25%	100	0.45	300
BMC2AY1500AN	1500	±25%	100	0.70	300

**BMC 1204 AN**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC2CY0019AN	19	±25%	100	0.10	800
BMC2CY0026AN	26	±25%	100	0.10	800
BMC2CY0031AN	31	±25%	100	0.10	800
BMC2CY0052AN	52	±25%	100	0.15	800

**BMC 1204 AN (continued)**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC2CY0060AN	60	±25%	100	0.15	500
BMC2CY0070AN	70	±25%	100	0.15	500
BMC2CY0100AN	100	±25%	100	0.20	450
BMC2CY0120AN	120	±25%	100	0.20	450
BMC2CY0150AN	150	±25%	100	0.20	450
BMC2CY0220AN	220	±25%	100	0.20	350
BMC2CY0300AN	300	±25%	100	0.20	350
BMC2CY0400AN	400	±25%	100	0.25	350
BMC2CY0600AN	600	±25%	100	0.25	350
BMC2CY0750AN	750	±25%	100	0.30	350
BMC2CY0800AN	800	±25%	100	0.30	350
BMC2CY1000AN	1000	±25%	100	0.35	350
BMC2CY1200AN	1200	±25%	100	0.35	350

**BMC 1210 AN**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC2EY0031AN	31	±25%	100	0.10	500
BMC2EY0052AN	52	±25%	100	0.30	400
BMC2EY0060AN	60	±25%	100	0.30	400

**Electrical Specifications****For General Signal Line, Frequency Higher Than A Use (KN)****BMC 0402 KN**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC1EY0220KN	220	±25%	100	0.80	100
BMC1EY0300KN	300	±25%	100	0.85	100

**BMC 0603 KN**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC1JY1000KN	1000	±25%	100	0.85	100
BMC1JY1200KN	1200	±25%	100	0.85	100
BMC1JY1500KN	1500	±25%	100	0.90	100
BMC1JY1800KN	1800	±25%	100	1.00	100
BMC1JY2000KN	2000	±25%	100	1.00	100
BMC1JY2500KN	2500	±25%	100	1.00	50

**BMC 0805 KN**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC2AY0080KN	80	±25%	100	0.30	300
BMC2AY0600KN	600	±25%	100	0.35	200
BMC2AY1000KN	1000	±25%	100	0.40	200
BMC2AY1200KN	1200	±25%	100	0.40	200
BMC2AY1500KN	1500	±25%	100	0.45	200
BMC2AY2000KN	2000	±25%	100	0.60	200
BMC2AY2200KN	2200	±25%	100	0.60	200
BMC2AY2500KN	2500	±25%	100	0.70	200
BMC2AY2700KN	2700	±25%	100	0.70	200

**Electrical Specifications****For Medium Current Line Use (AG)****BMC 0402 AG**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC1EY0010AG	10	±25%	100	0.03	2000
BMC1EY0030AG	30	±25%	100	0.03	3000
BMC1EY0060AG	60	±25%	100	0.075	1500
BMC1EY0070AG	70	±25%	100	0.09	1200
BMC1EY0100AG	100	±25%	100	0.09	1200
BMC1EY0120AG	120	±25%	100	0.075	1500
BMC1EY0220AG	220	±25%	100	0.20	1000

**BMC 0603 AG**

Part No.	Impedance ( $\Omega$ )	Tolerance	TestFreq. (MHz)	DCR ( $\Omega$ )max.	Rated Current (mA)max. at 85°C
BMC1JY0022AG	22	±25%	100	0.04	3000
BMC1JY0030AG	30	±25%	100	0.04	3000
BMC1JY0033AG	33	±25%	100	0.025	3000
BMC1JY0047AG	47	±25%	100	0.04	3000
BMC1JY0060AG	60	±25%	100	0.04	3000
BMC1JY0062AG	62	±25%	100	0.04	3000
BMC1JY0100AG	100	±25%	100	0.05	3000
BMC1JY0120AG	120	±25%	100	0.05	2000
BMC1JY0180AG	180	±25%	100	0.08	2000
BMC1JY0220AG	220	±25%	100	0.08	2000
BMC1JY0300AG	300	±25%	100	0.15	2000
BMC1JY0470AG	470	±25%	100	0.15	1500
BMC1JY0600AG	600	±25%	100	0.30	1000
BMC1JY0750AG	750	±25%	100	0.30	1000
BMC1JY1000AG	1000	±25%	100	0.25	1000

**BMC 0805 AG**

Part No.	Impedance ( $\Omega$ )	Tolerance	TestFreq. (MHz)	DCR ( $\Omega$ )max.	Rated Current (mA)max. at 85°C
BMC2AY0011AG	11	±25%	100	0.03	3000
BMC2AY0017AG	17	±25%	100	0.03	3000
BMC2AY0030AG	30	±25%	100	0.05	3000
BMC2AY0031AG	31	±25%	100	0.03	3000
BMC2AY0039AG	39	±25%	100	0.03	3000
BMC2AY0040AG	40	±25%	100	0.03	3000
BMC2AY0047AG	47	±25%	100	0.03	3000
BMC2AY0050AG	50	±25%	100	0.03	3000
BMC2AY0052AG	52	±25%	100	0.03	3000
BMC2AY0060AG	60	±25%	100	0.04	3000
BMC2AY0080AG	80	±25%	100	0.04	3000
BMC2AY0100AG	100	±25%	100	0.04	3000
BMC2AY0120AG	120	±25%	100	0.05	3000
BMC2AY0180AG	180	±25%	100	0.05	3000
BMC2AY0220AG	220	±25%	100	0.05	3000
BMC2AY0300AG	300	±25%	100	0.05	3000
BMC2AY0330AG	330	±25%	100	0.05	3000
BMC2AY0470AG	470	±25%	100	0.10	2000
BMC2AY0600AG	600	±25%	100	0.10	2000
BMC2AY1000AG	1000	±25%	100	0.30	1000
BMC2AY1500AG	1500	±25%	100	0.30	1000

## Standard Electrical Specifications

### For High Speed Signal Line Use (BN)

#### BMC 0402 BN

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC1EY0470BN	470	±25%	100	1.00	100
BMC1EY0600BN	600	±25%	100	1.50	50

Other impedance values on application

#### BMC 0603 BN

On Application only

#### BMC 0805 BN

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC2AY1500BN	1500	±25%	100	0.35	200
BMC2AY1800BN	1800	±25%	100	0.40	200
BMC2AY2000BN	2000	±25%	100	0.40	200
BMC2AY2200BN	2200	±25%	100	0.50	200
BMC2AY2500BN	2500	±25%	100	0.60	200
BMC2AY2700BN	2700	±25%	100	0.60	200

Other impedance values on application

#### BMC 1204 BN

On Application only

## Standard Electrical Specifications

### For Ultra High Speed Signal Line Use (HN)

#### BMC 0402 HN

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC1EY0022HN	22	±25%	100	0.20	300
BMC1EY0030HN	30	±25%	100	0.20	300
BMC1EY0033HN	33	±25%	100	0.40	300
BMC1EY0047HN	47	±25%	100	0.35	300

**BMC 0402 HN (continued)**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC1EY0047HN1	47	±25%	100	0.33	350
BMC1EY0060HN	60	±25%	100	0.40	300
BMC1EY0075HN	75	±25%	100	0.40	300
BMC1EY0100HN	100	±25%	100	0.55	300
BMC1EY0120HN	120	±25%	100	0.55	300
BMC1EY0220HN	220	±25%	100	0.80	200
BMC1EY0300HN	300	±25%	100	1.00	100

Other impedance values on application

**BMC 0603 HN**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC1JY0010HN	10	±25%	100	0.10	900
BMC1JY0020HN	20	±25%	100	0.20	600
BMC1JY0047HN	47	±25%	100	0.30	500
BMC1JY0047HN1	47	±25%	100	0.15	600
BMC1JY0120HN	120	±25%	100	0.30	300
BMC1JY0300HN	300	±25%	100	0.35	300
BMC1JY0600HN	600	±25%	100	0.65	300
BMC1JY1000HN	1000	±25%	100	1.10	50

Other impedance values on application

**BMC 0805 HN**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC2AY0600HN	600	±25%	100	0.65	200

Other impedance values on application

**Standard Electrical Specifications For High Current Line Use (AH)****BMC 0805 AH**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC2AY0017AH	17	±25%	100	0.008	6000

**BMC 0805 AH (continued)**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC2AY0022AH	22	±25%	100	0.008	6000
BMC2AY0030AH	30	±25%	100	0.008	6000
BMC2AY0030AH1	30	±25%	100	0.015	4000
BMC2AY0033AH	33	±25%	100	0.008	6000
BMC2AY0039AH	39	±25%	100	0.008	6000
BMC2AY0050AH	50	±25%	100	0.010	6000
BMC2AY0060AH	60	±25%	100	0.020	6000
BMC2AY0080AH	80	±25%	100	0.020	6000
BMC2AY0080AH2	80	±25%	100	0.010	5000
BMC2AY0100AH	100	±25%	100	0.020	5000
BMC2AY0100AH1	100	±25%	100	0.020	4000
BMC2AY0120AH	120	±25%	100	0.020	4000
BMC2AY0120AH1	120	±25%	100	0.015	5000

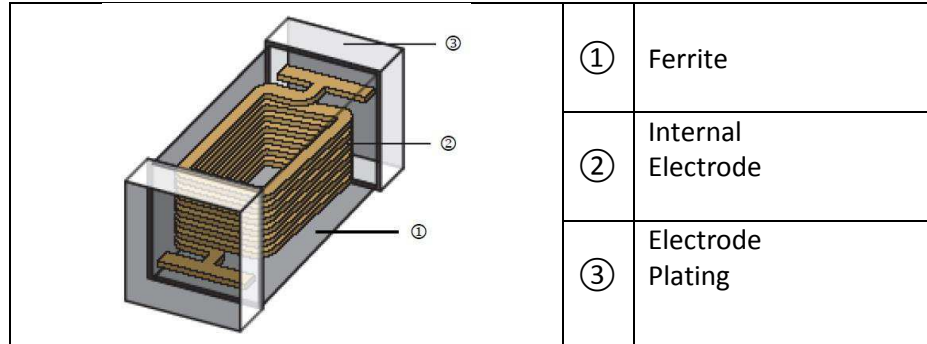
**BMC 1204 AH**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC2CY0026AH	26	±25%	100	0.006	6000
BMC2CY0031AH	31	±25%	100	0.006	6000
BMC2CY0033AH	33	±25%	100	0.006	6000
BMC2CY0048AH	48	±25%	100	0.008	6000
BMC2CY0050AH	50	±25%	100	0.008	6000
BMC2CY0052AH	52	±25%	100	0.008	6000
BMC2CY0060AH	60	±25%	100	0.020	4000
BMC2CY0080AH	80	±25%	100	0.020	4000
BMC2CY0120AH	120	±25%	100	0.020	4000
BMC2CY0120AH1	120	±25%	100	0.012	6000

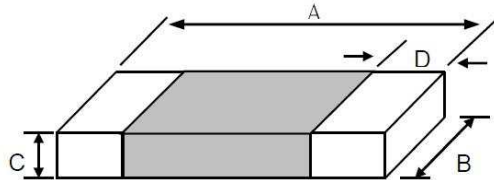
**BMC 1210 AH**

Part No.	Impedance (Ω)	Tolerance	TestFreq. (MHz)	DCR (Ω)max.	Rated Current (mA)max. at 85°C
BMC2EY0052AH	52	±25%	100	0.008	6000
BMC2EY0060AH	60	±25%	100	0.008	6000

### Construction

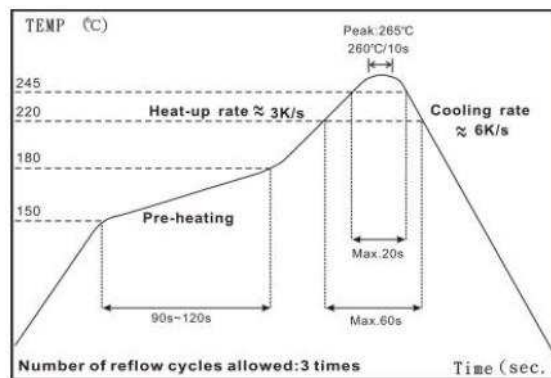


### Dimensions



Type	Size (Inch)	A (mm)	B (mm)	C (mm)	D (mm)	Weight (g) (1000pcs)
BMC1H	0201	0.6±0.03	0.30±0.03	0.30±0.03	0.1~0.2	1.1
BMC1E	0402	1.0±0.10	0.50±0.10	0.5±0.10	0.1~0.35	2.6
BMC1J	0603	1.6±0.20	0.80±0.15	0.8±0.15	0.1~0.6	6.2
BMC2A	0805	2.0±0.20	1.25±0.20	0.9±0.20	0.2~0.8	10
BMC2C	1204	3.2±0.20	1.60±0.20	1.1±0.20	0.2~1.0	30
BMC2E	1210	3.2±0.20	2.50±0.20	1.3±0.20	0.2~1.0	54

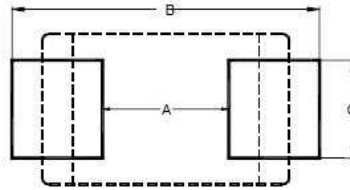
### Soldering Condition



Time of IR reflow soldering at maximum temperature point 260°C : 10s

Time of soldering iron at maximum temperature point 280°C : 3s

## Recommended PCB layout plan



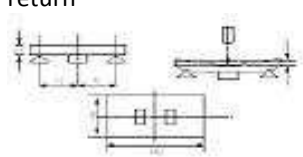
Type	Size (Inch)	A (mm)	B (mm)	C (mm)
BMC1H	0201	0.25	0.69	0.32
BMC1E	0402	0.50	2.10	0.55
BMC1J	0603	0.60	2.60	0.80
BMC2A	0805	0.66	3.23	1.47
BMC2C	1204	2.20	4.40	2.06
BMC2E	1210	2.13	4.06	2.74

## Environmental Characteristics

### Electrical Performance Test

Item	Specification	Test Methods
Impedance	As per Electrical spec.	HP4286A
DCR		HP 4338 digital mili-ohm meter

### Mechanical Performance Test

Item	Specification	Test Methods
Substrate Bending Test	Without deformation cases Impedance: within $\pm 30\%$ of initial value DC Resistance shall be satisfied	Test device shall be soldered on the substrate Substrate Dimension: 100x40x0.8mm Deflection: 3.0mm Keeping Time: 10 seconds then return 
Vibration	Appearance: No damage Impedance: within $\pm 30\%$ of initial value DC Resistance shall be satisfied	Test device shall be soldered on the substrate Oscillation Frequency : 10 to 55 to 10Hz for 1min Amplitude : 1.5mm(peak-peak) Time : 2hrs for each axis (X,Y&Z), total 6hrs

### Mechanical Performance Test (continued)

Item	Specification	Test Methods
Resistance to Soldering Heat	No visible damage Electrical characteristics and mechanical characteristics shall be satisfied	Solder temp: 265±5°C Immersion time: 6±1sec Preheating: 100°C to 150°C, 1 minute Measured after exposure in the room condition for 24hrs Solder: Sn-3Ag-0.5Cu
Solderability	95% min. coverage of all metallized area	Solder Temperature: 240±5°C Immersion Time: 3±1sec Solder: Sn-3Ag-0.5Cu
Terminal Strength	Without deformation cases Impedance: within±30% of initial value DC Resistance shall be satisfied	Solder chip on PCB and applied 10N (1.02Kgf) for 10 sec
Temperature Cycle	Appearance: No damage. Impedance: within±30% of initial value DC Resistance shall be satisfied	One cycle: <b>step1:</b> -55±3°C for 30±3min <b>step2:</b> standard atmospheric conditions 5s or less <b>step3:</b> 125±2°C for 30±3min <b>step4:</b> standard atmospheric conditions 5s or less Total: 100cycles Measured after exposure in the room condition for 24hrs
Humidity Resistance		Temperature: 60±2°C Relative Humidity: 90 ~ 95% Applied Current: Rated Current (maximum value) Time: 1008±12hrs Measured after exposure in the room condition for 24hrs
High Temperature Resistance		Temperature: 125±2°C Applied Current: Rated Current (maximum value) Time: 1008±12hrs Measured after exposure in the room condition for 24hrs
Low Temperature Storage Life Test		Temperature: -55±2°C Time: 1008±12hrs Measured after exposure in the room condition for 24hrs
Thermal Shock		-55°C~125°C kept stabilized for 30 minutes each for 100 cycles Measured after exposure in the room condition for 24hrs

Operating Temperature: -55°C ~ 125°C

Storage Temperature: <40°C ; Humidity 30~70%RH



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-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management