

## Lithium Battery Tab Configuration List

# Lithium

International English

#### **NOTICE TO READERS**

**It is the responsibility of each user to ensure that each battery application system is adequately designed safe and compatible with all conditions encountered during use, and in conformance with existing standards and requirements. Any circuits contained herein are illustrative only and each user must ensure that each circuit is safe and otherwise completely appropriate for the desired application.**

**This literature contains information concerning cells and batteries manufactured by Matsushita Battery Industrial Co., Ltd. This information is generally descriptive only and is not intended to make or imply any representation guarantee or warranty with respect to any cells and batteries. Cell and battery designs are subject to modification without notice. All descriptions and warranties are solely as contained in formal offers to sell or quotations made by Matsushita Battery Industrial Co., Ltd., Panasonic Sales Companies and Panasonic Agencies.**

## 1. Cylindrical Type Lithium Batteries P.3-P.5

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Dimensions

## 2. Coin Type Lithium Batteries P.7-P.21

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Poly-carbonmonofluoride(BR) Series Dimentions

Manganese Dioxide(CR) Series Dimentions

High Operating Temperature Poly-carbonmonofluoride(BR-A) Series  
Dimensions

## 3. Vanadium Lithium Rechargeable Batteries(VL series) P.23-P.27

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Dimensions

## 4. Manganese Lithium Rechargeable Batteries(ML series) P.29-P.33

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Dimensions

### <Notes>

(1) This handbook sets forth the tab configurations of lithium batteries. Details of product prices, delivery lead time and other transaction conditions will be determined through discussions to be held separately.

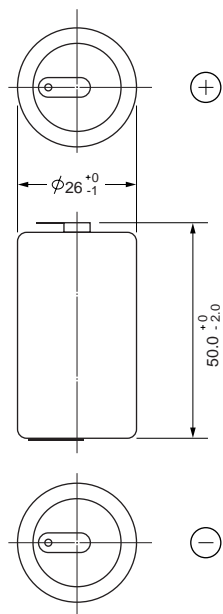
(2) The contents of this handbook are subject to change without notice due to improvements or discontinuation. Before studying the use of the lithium batteries described in this handbook in your products, check with Matsushita Battery Industrial Co., Ltd. Industrial/Systems Sales & Marketing Division for their availabilities ahead of time.

(3) With lithium batteries, different product number suffixes are used for different destinations. Inquire separately for details.

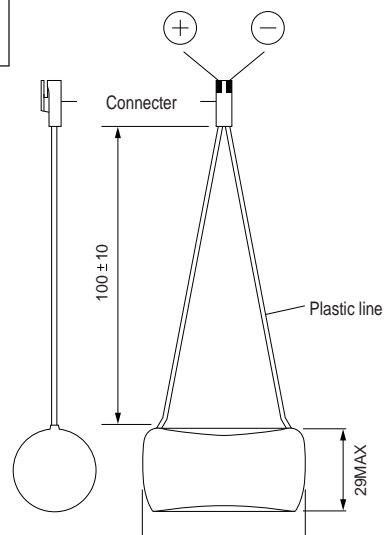
## ■ Cylindrical Type Lithium Batteries

| Bare cell | Model Number | Specifications     |                       | Tab configuration | Page/Fig No. |
|-----------|--------------|--------------------|-----------------------|-------------------|--------------|
|           |              | Nominal Voltage(V) | Nominal Capacity(mAh) |                   |              |
| BR-C      | BR-CT2P      | 3                  | 5,000                 | Tab (12mm)        | 4 /No.1      |
|           | BR-CC7P      | 3                  | 5,000                 | Connector         | 4 /No.2      |
| BR-A      | BR-AT2P      | 3                  | 1,800                 | Tab (12mm)        | 4 /No.3      |
|           | BR-AE2P      | 3                  | 1,800                 | Tab pin           | 4 /No.4      |
| BR-2/3A   | BR-2/3AT2P   | 3                  | 1,200                 | Tab (12mm)        | 5 /No.5      |
|           | BR-2/3AE2P   | 3                  | 1,200                 | Tab pin           | 5 /No.6      |
|           | BR-2/3AC2P   | 3                  | 1,200                 | Connector         | 5 /No.7      |
| BR-2/3A   | BR-E3C3C     | 6                  | 1,200                 | Connector         | 5 /No.8      |
|           | BR-P2P       | 6                  | 1,200                 | —                 | 5 /No.9      |

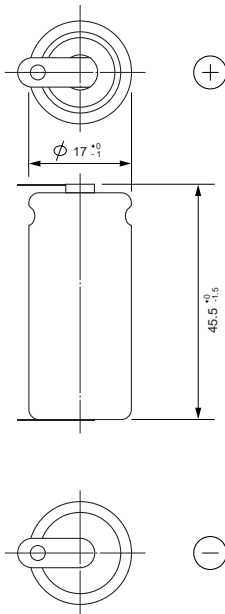
BR-CT2P  
Fig No.1



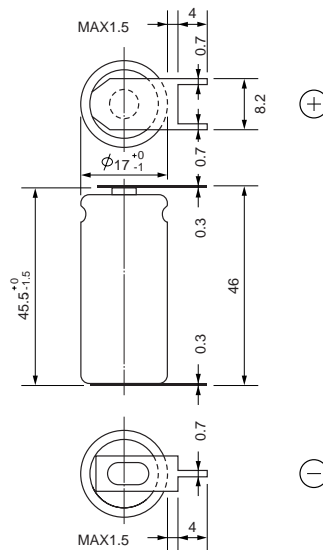
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Fig No.2



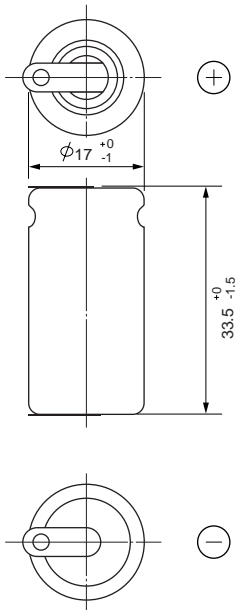
BR-AT2P  
Fig No.3



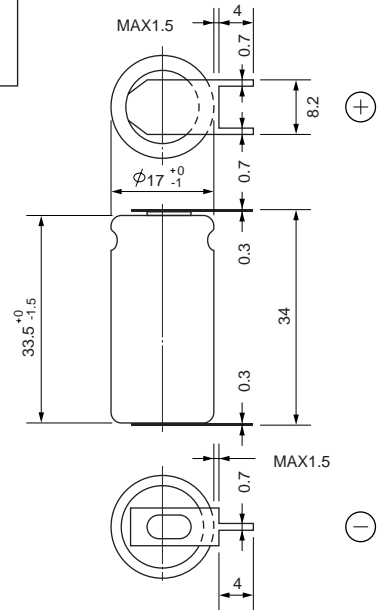
BR-AE2P  
Fig No.4



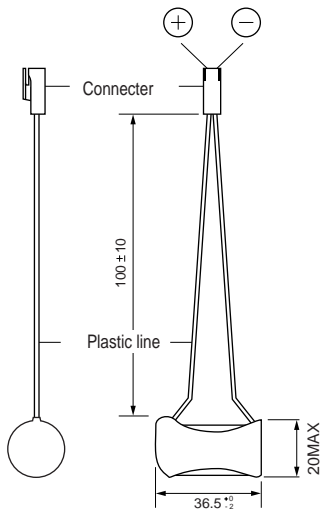
BR-2/3AT2P  
Fig No.5



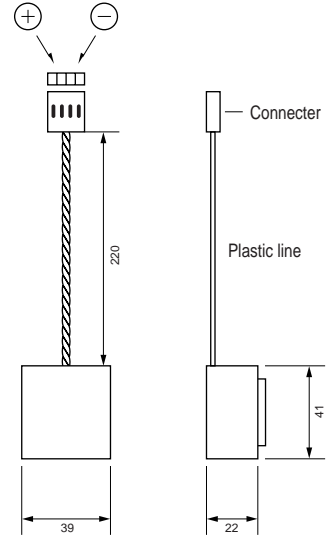
BR-2/3AE2P  
Fig No.6



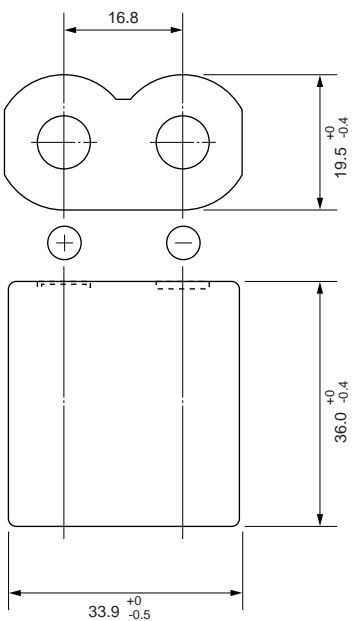
BR-2/3AC2P  
Fig No.7



BR-E3C3C  
Fig No.8



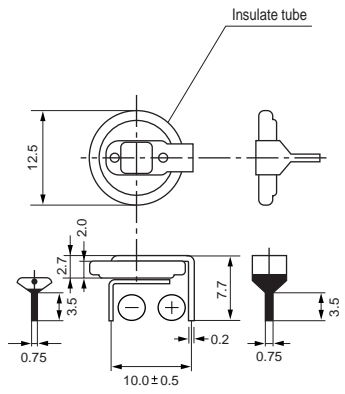
BR-P2P  
Fig No.9



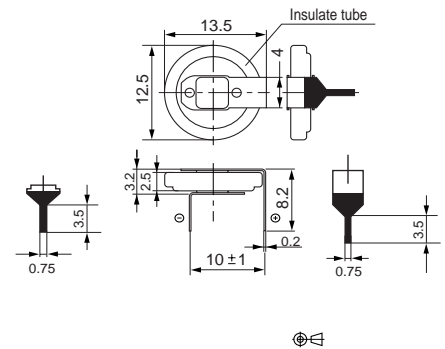
## ■ Coin Type Lithium Batteries (Poly-carbonmonofluoride(BR) series/Manganese Dioxide (CR) series)

| Type   | Model Number |        | Insulate tube<br>With / Without |       | Specifications     |                       | Page/Fig No. |
|--------|--------------|--------|---------------------------------|-------|--------------------|-----------------------|--------------|
|        |              |        |                                 |       | Nominal Voltage(V) | Nominal Capacity(mAh) |              |
| H      | BR1220       | CR1220 | /1HF                            | /1HE  | 3                  | 35                    | 8/No.10      |
|        | BR1225       |        | /H1A                            | /H9A  | 3                  | 48                    | 8/No.11      |
|        | BR1632       | CR1632 | /1HF                            | /1HE  | 3                  | BR 120 CR 125         | 8/No.12      |
|        |              | CR2025 | /1HF                            |       | 3                  | 165                   | 8/No.13      |
|        | BR2032       | CR2032 | /1HF                            | /1HE  | 3                  | BR 190 CR 220         | 8/No.14      |
|        | BR2325       |        | /1HC                            | /1HB  | 3                  | 165                   | 8/No.15      |
|        | BR2330       | CR2330 | /1HF                            | /1HE  | 3                  | BR 255 CR 265         | 9/No.16      |
|        |              | CR2354 | /1HF                            | /1HE  | 3                  | 560                   | 9/No.17      |
|        |              | CR2477 | /1HF                            | /1HE  | 3                  | 1,000                 | 9/No.18      |
| V      | BR1220       | CR1220 | /1VC                            | /1VB  | 3                  | 35                    | 10/No.19     |
|        | BR1225       |        | /1VC                            | /1VB  | 3                  | 48                    | 10/No.20     |
|        | BR1632       | CR1632 | /V1A                            |       | 3                  | BR 120 CR 125         | 10/No.21     |
|        |              | CR2025 | /1VC                            |       | 3                  | 165                   | 10/No.22     |
|        | BR2032       | CR2032 | /1VC                            | /1VB  | 3                  | BR 190 CR 220         | 10/No.23     |
|        | BR2325       |        | /1VC                            | /1VB  | 3                  | 165                   | 10/No.24     |
|        | BR2330       | CR2330 | /1VC                            | /1VB  | 3                  | BR 255 CR 265         | 11/No.25     |
|        |              | CR2354 | /1VC                            | /1VB  | 3                  | 560                   | 11/No.26     |
|        |              | CR2477 | /1VC                            | /1VB  | 3                  | 1,000                 | 11/No.27     |
| F      |              | CR1216 |                                 | /1F5U | 3                  | 25                    | 12/No.28     |
|        |              | CR1220 | /1FC                            |       | 3                  | 35                    | 12/No.29     |
|        | BR1225       |        | /F1A                            |       | 3                  | 48                    | 12/No.30     |
|        |              |        | CR1616                          |       | /1F2               | 3                     | 55           |
|        | BR1632       | CR1632 | /1F2                            |       | 3                  | BR 120 CR 125         | 12/No.32     |
|        | BR2016       | CR2016 | /1F2                            |       | 3                  | BR 75 CR 90           | 12/No.33     |
|        |              | CR2025 | /1F2                            |       | 3                  | 165                   | 13/No.34     |
|        | BR2032       | CR2032 | /1F2                            |       | 3                  | BR 190 CR 220         | 13/No.35     |
|        | BR2330       | CR2330 | /1F3                            |       | 3                  | BR 255 CR 265         | 13/No.36     |
|        |              | CR2354 | /1F2                            |       | 3                  | 560                   | 13/No.37     |
|        |              | CR2477 | /1F2                            |       | 3                  | 1,000                 | 13/No.38     |
|        | BR3032       | CR3032 | /1F2                            |       | 3                  | 500                   | 13/No.39     |
| G      |              | CR2025 | /1GVF                           |       | 3                  | 165                   | 14/No.40     |
|        | BR2032       | CR2032 | /1GVF                           | /1GV  | 3                  | BR 190 CR 220         | 14/No.41     |
|        | BR2032       | CR2032 |                                 | /1GS  | 3                  | BR 190 CR 220         | 14/No.42     |
|        | BR2032       | CR2032 | /1GUF                           | /1GU  | 3                  | BR 190 CR 220         | 14/No.43     |
|        | BR2330       | CR2330 | /1GVF                           | /1GV  | 3                  | BR 255 CR 265         | 14/No.44     |
|        | BR2330       | CR2330 | /1GUF                           | /1GU  | 3                  | BR 255 CR 265         | 14/No.45     |
|        |              | CR2354 | /G1A                            |       | 3                  | 560                   | 15/No.46     |
|        |              | CR2354 | /1GUF                           | /1GU  | 3                  | 560                   | 15/No.47     |
|        |              | CR2477 | /1GVF                           | /1GV  | 3                  | 1,000                 | 15/No.48     |
| BR3032 | CR3032       | /1GUF  |                                 | 3     | 500                | 15/No.49              |              |
| Others | BR2016       | CR2016 | /1T2                            |       | 3                  | BR 75 CR 90           | 16/No.50     |
|        |              | CR2025 | /1T2                            |       | 3                  | 165                   | 16/No.51     |
|        | BR2032       | CR2032 | /1T2                            |       | 3                  | BR 190 CR 220         | 16/No.52     |
|        | BR2330       | CR2330 | /1T3                            |       | 3                  | BR 255 CR 265         | 16/No.53     |

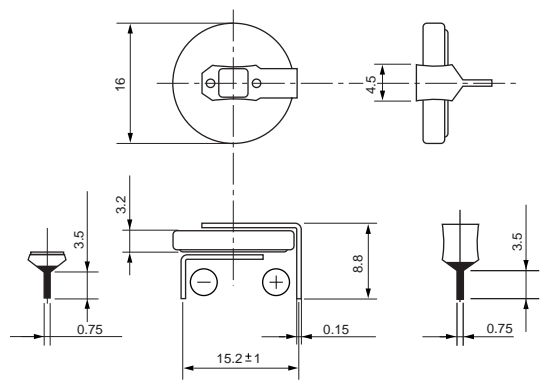
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Fig No.10



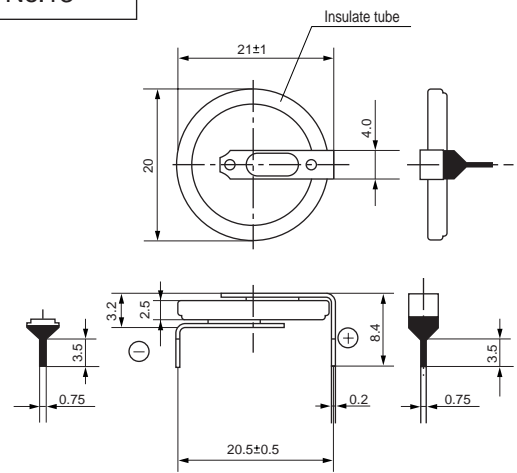
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Fig No.11



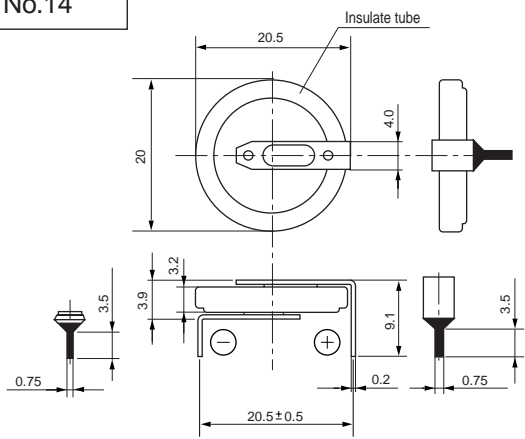
BR,CR1632  
/1HF/1HE  
Fig No.12



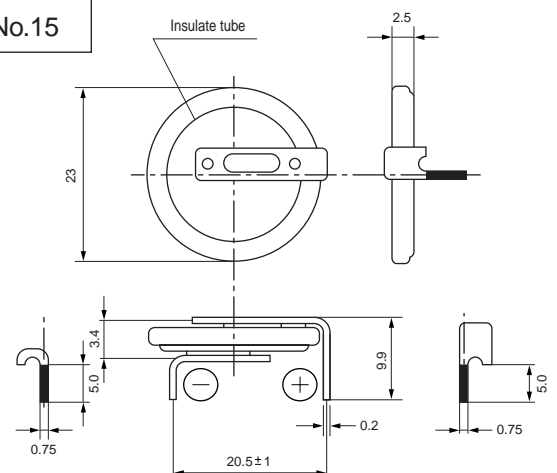
CR2025/1HF  
Fig No.13



BR,CR2032  
/1HF/1HE  
Fig No.14

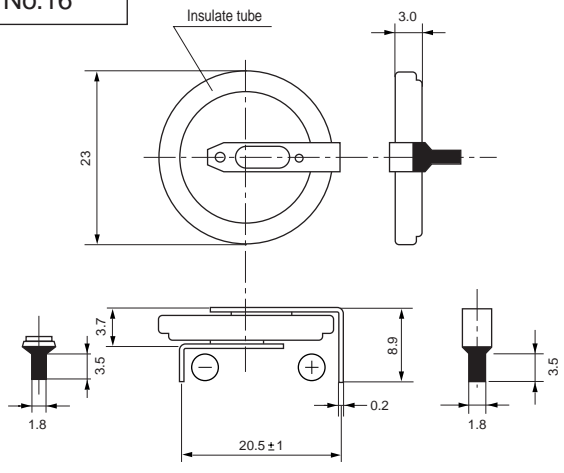


BR2325  
/1HC/1HB  
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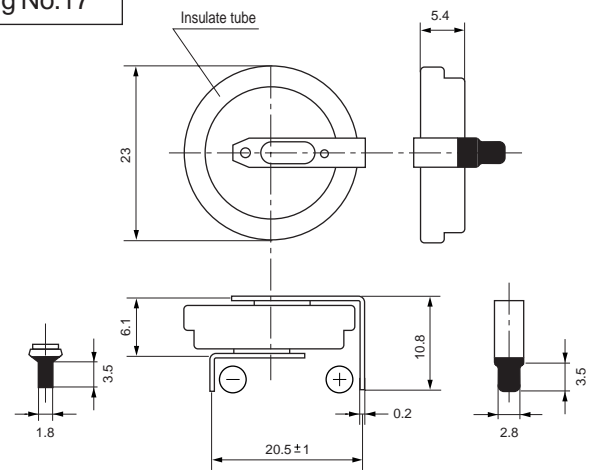




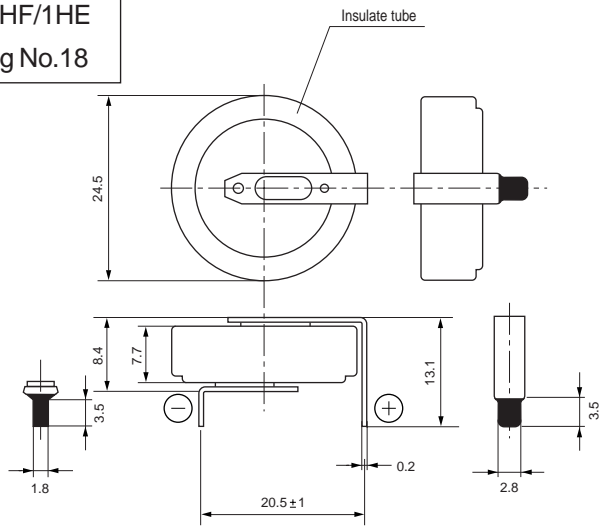
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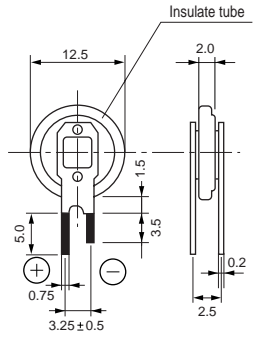
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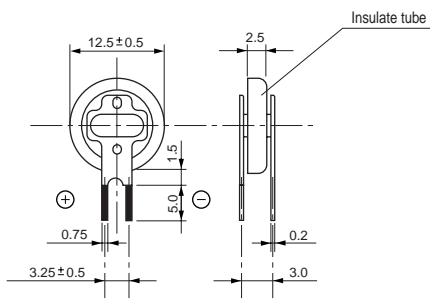
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Fig No.18



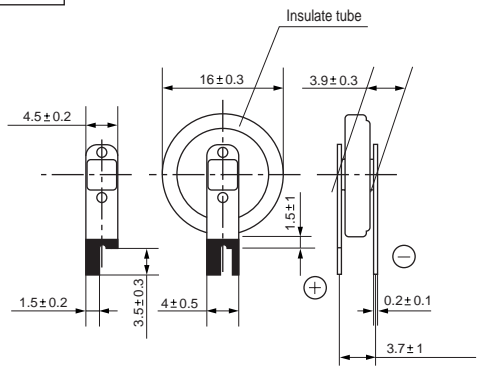
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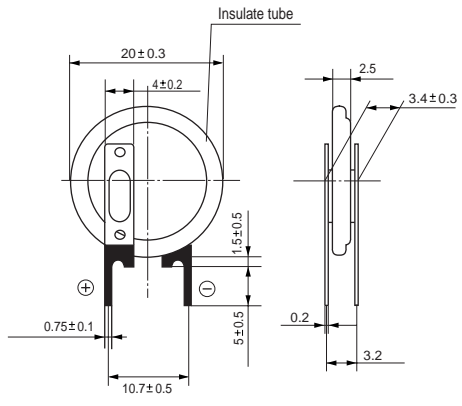
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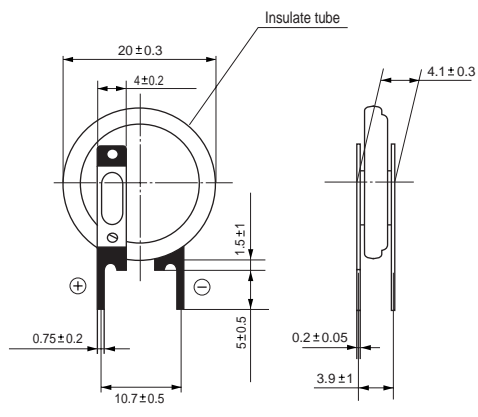
BR,CR1632  
/V1A  
Fig No.21



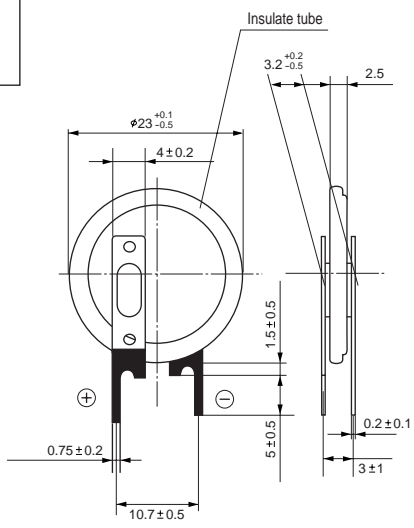
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Fig No.22



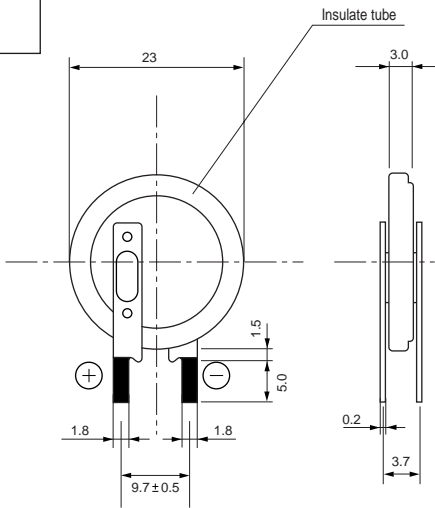
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/1VC/1VB  
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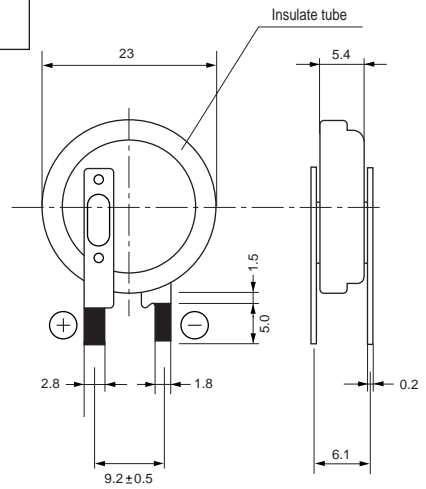
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Fig No.24



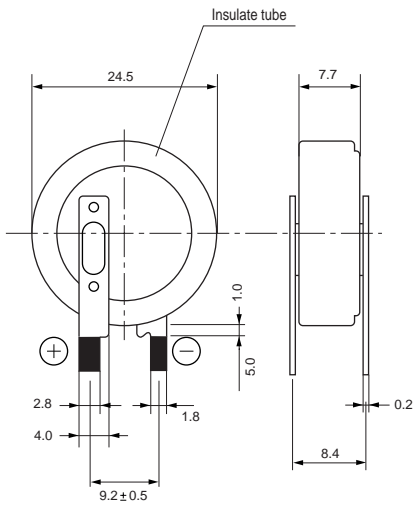
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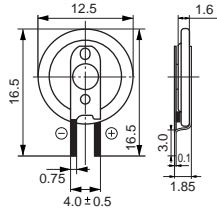
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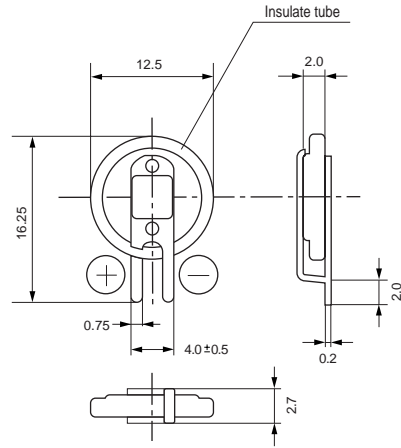
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Fig No.27



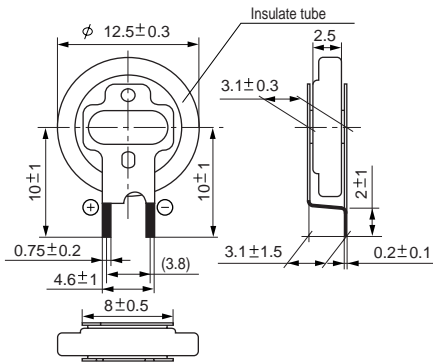
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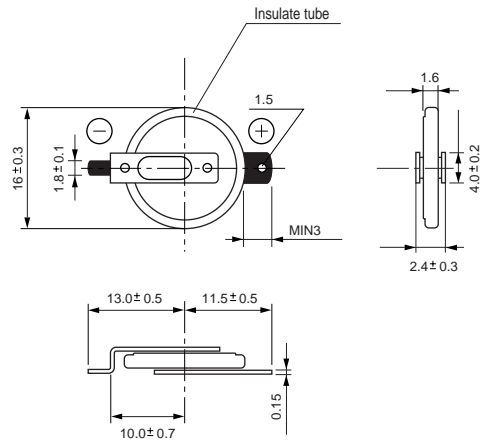
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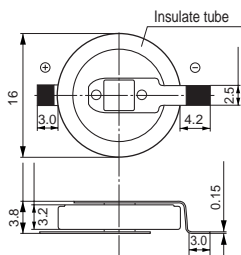
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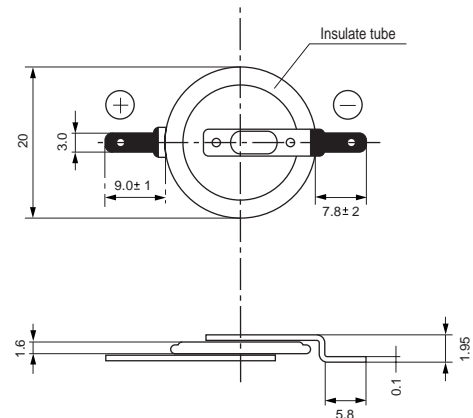
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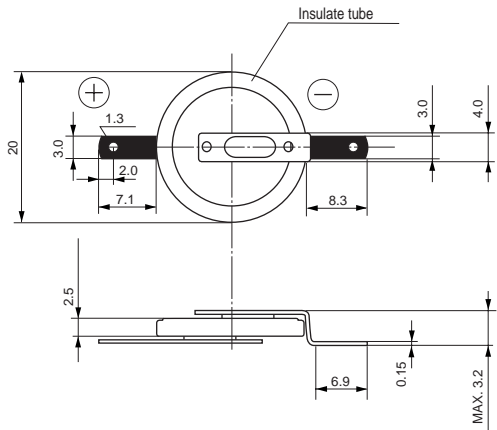
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Fig No.32



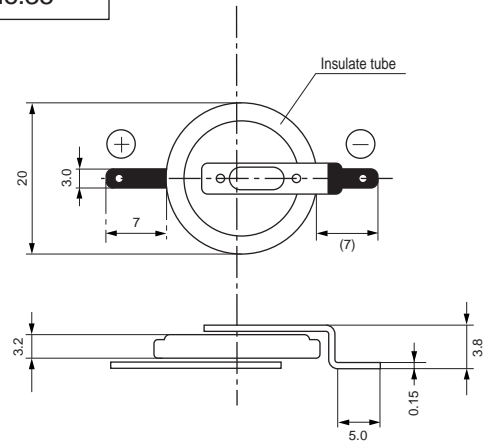
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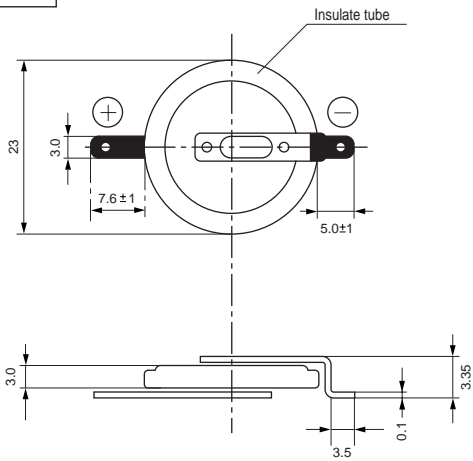
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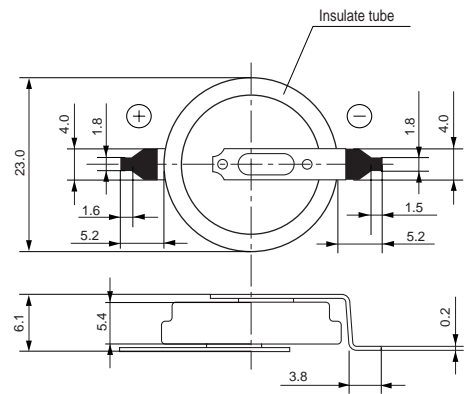
BR,CR2032  
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Fig No.35



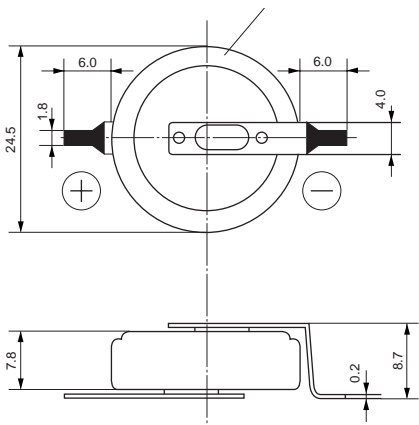
BR,CR2330  
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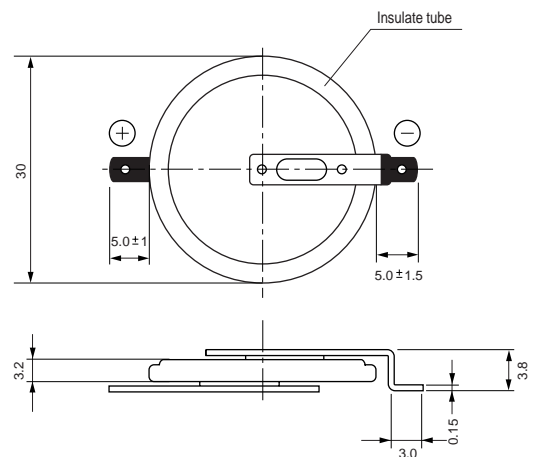
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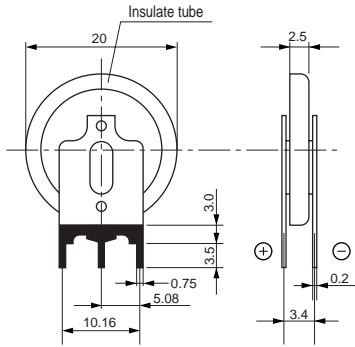
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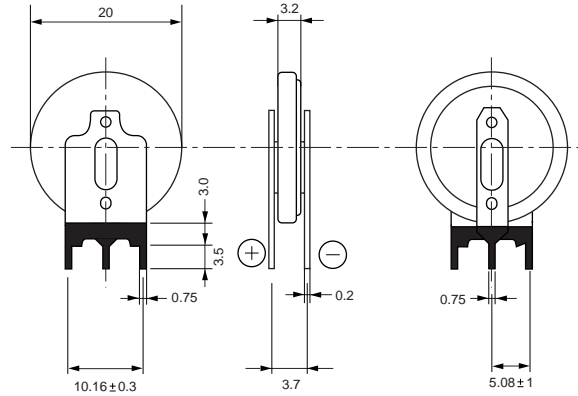
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Fig No.39



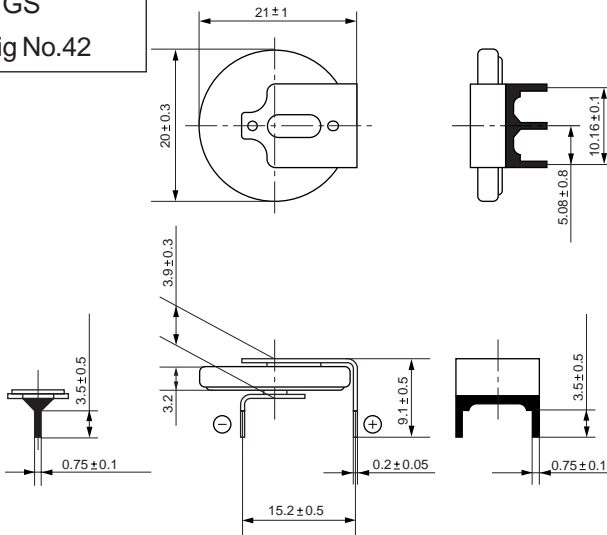
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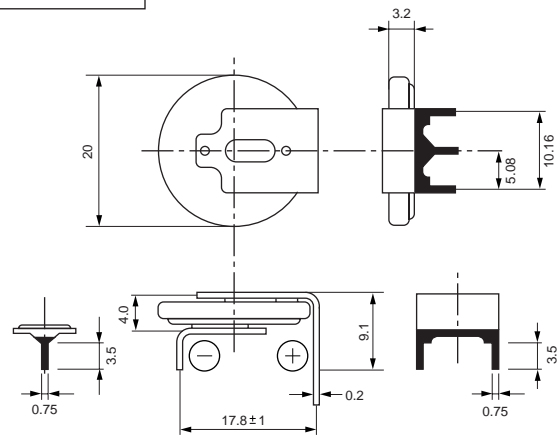
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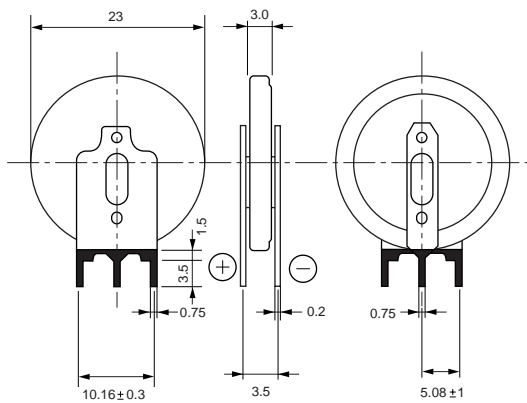
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/1GS  
Fig No.42



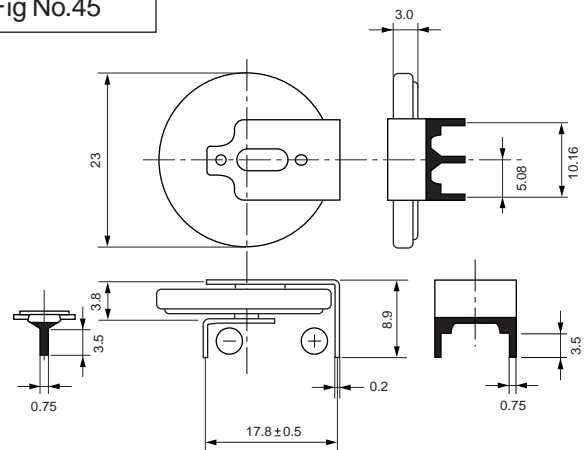
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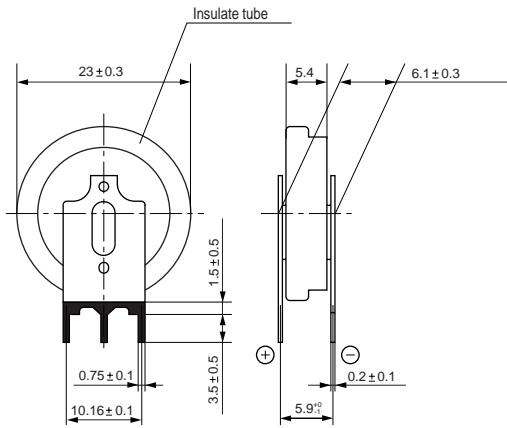
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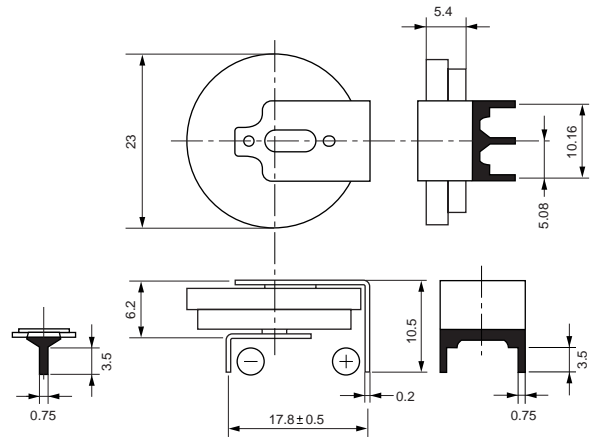
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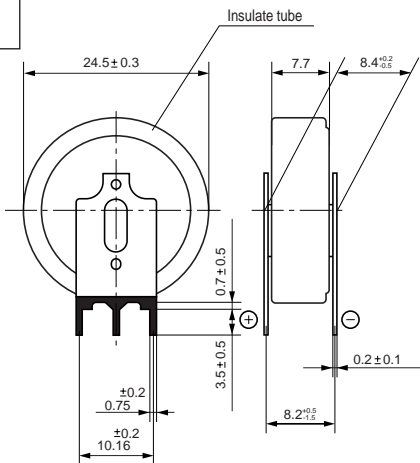
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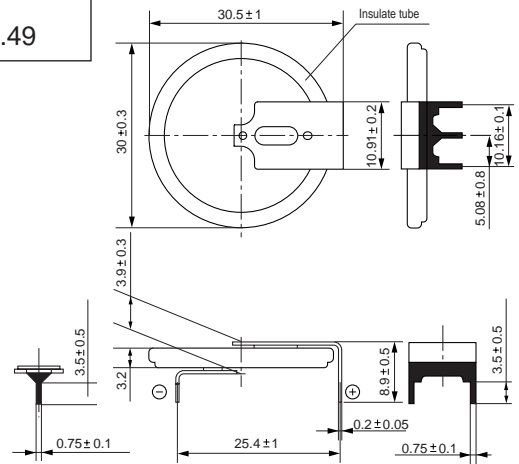
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Fig No.47



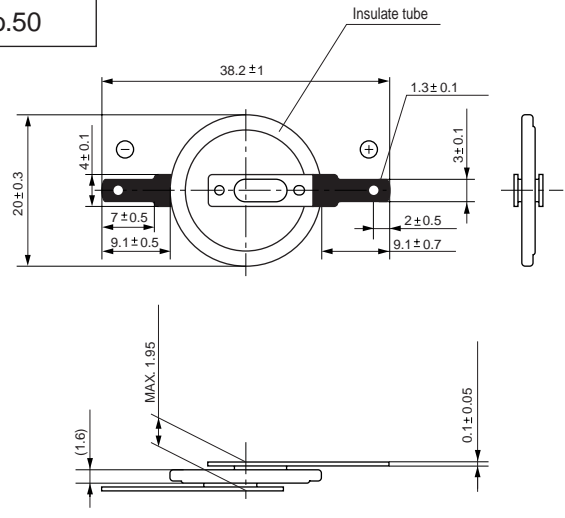
CR2477  
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Fig No.48



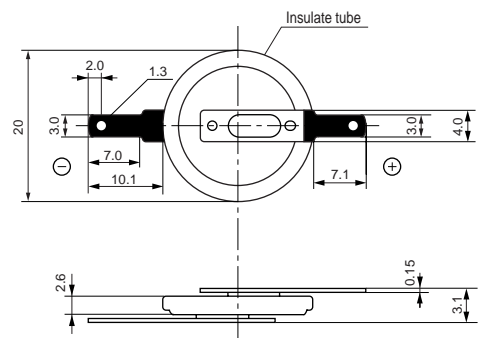
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Fig No.49



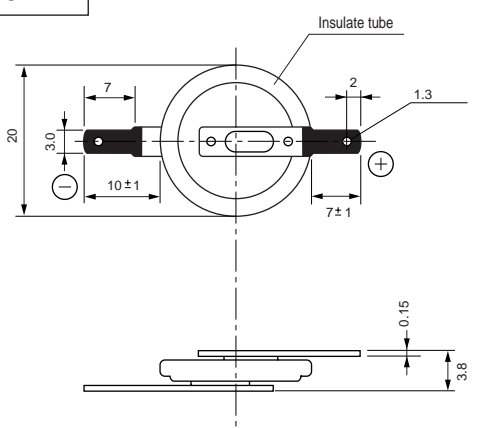
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Fig No.50



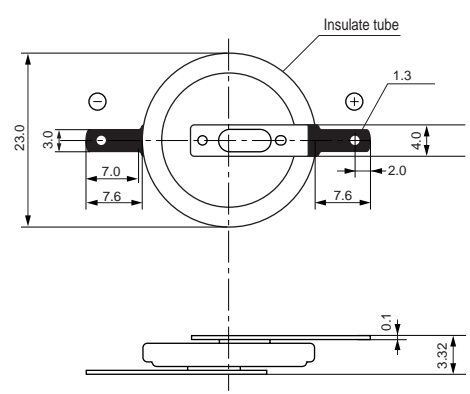
CR2025/1T2  
Fig No.51



BR,CR2032  
/1T2  
Fig No.52



BR,CR2330  
/1T3  
Fig No.53

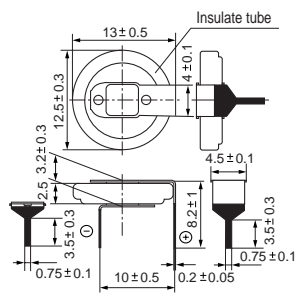




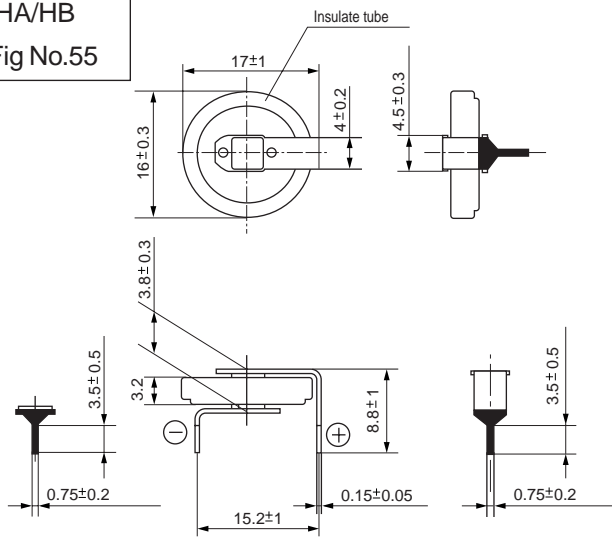
## ■ Coin Type Lithium Batteries (High Operating Temperature Poly-carbonmonofluoride(BR-A) series)

| Type | Model Number | Insulate tube |         | Specifications     |                       | Page/Fig No. |
|------|--------------|---------------|---------|--------------------|-----------------------|--------------|
|      |              | With          | Without | Nominal Voltage(V) | Nominal Capacity(mAh) |              |
| H    | BR1225A      | /HB           | /HA     | 3                  | 48                    | 18/No.54     |
|      | BR1632A      | /HA           | /HB     | 3                  | 120                   | 18/No.55     |
|      | BR2330A      | /HA           | /HB     | 3                  | 255                   | 18/No.56     |
|      | BR2477A      | /HB           | /HC     | 3                  | 1,000                 | 18/No.57     |
| V    | BR1632A      | /VA           |         | 3                  | 120                   | 19/No.58     |
|      | BR2330A      | /VA           |         | 3                  | 255                   | 19/No.59     |
|      | BR2477A      | /VA           |         | 3                  | 1,000                 | 19/No.60     |
| F    | BR1225A      | /FA           |         | 3                  | 48                    | 20/No.61     |
|      | BR1632A      | /FA           |         | 3                  | 120                   | 20/No.62     |
|      | BR2330A      | /FA           |         | 3                  | 255                   | 20/No.63     |
|      | BR2477A      | /FB           |         | 3                  | 1,000                 | 20/No.64     |
| G    | BR1632A      |               | /GA     | 3                  | 120                   | 21/No.65     |
|      | BR2330A      | /GC           | /GA     | 3                  | 255                   | 21/No.66     |
|      | BR2330A      | /GD           |         | 3                  | 255                   | 21/No.67     |
|      | BR2477A      | /GB           |         | 3                  | 1,000                 | 21/No.68     |

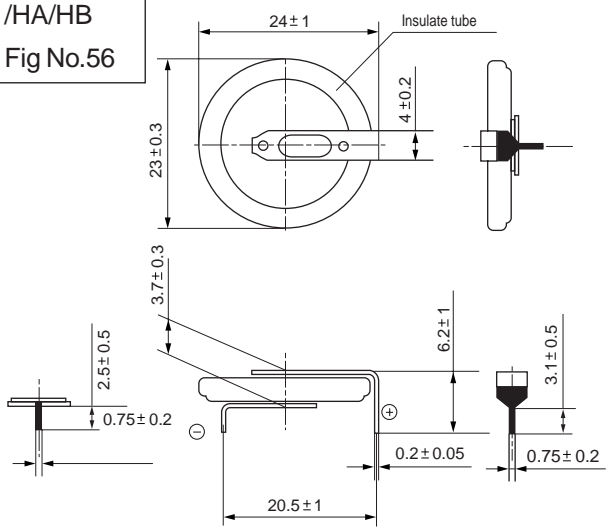
BR1225A  
/HB/HA  
Fig No.54



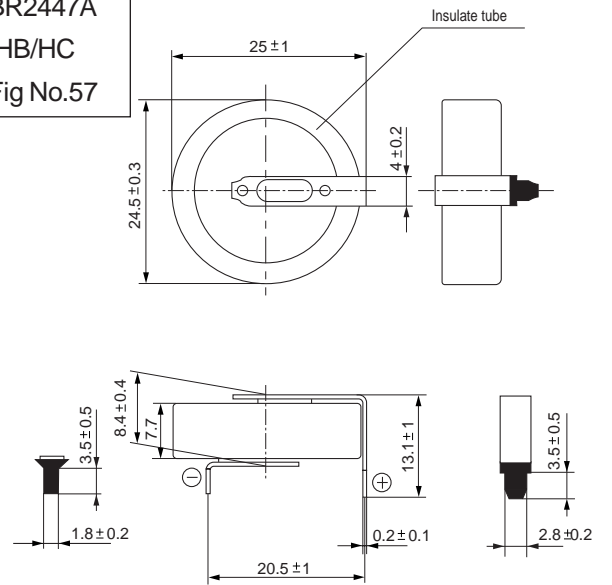
BR1632A  
/HA/HB  
Fig No.55



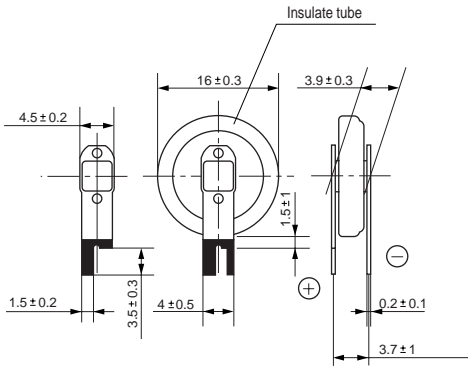
BR2330A  
/HA/HB  
Fig No.56



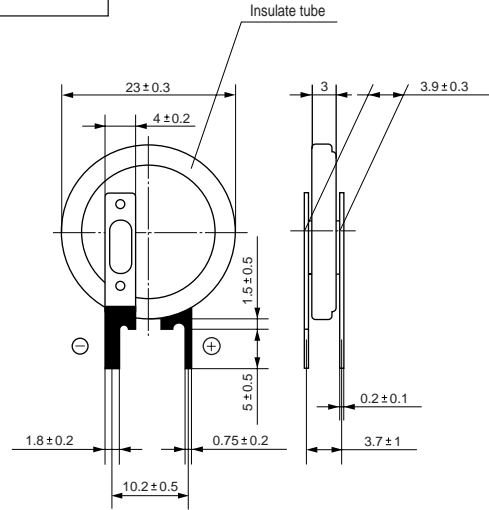
BR2447A  
/HB/HC  
Fig No.57



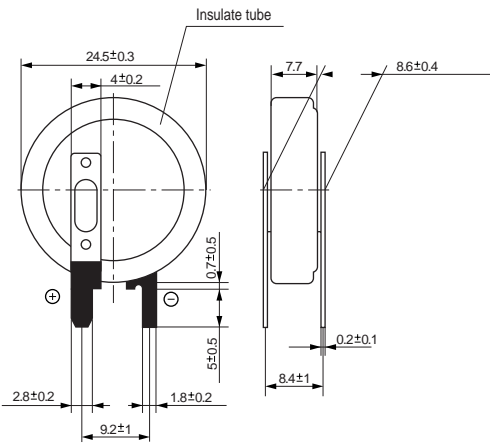
BR1632A/VA  
Fig No.58



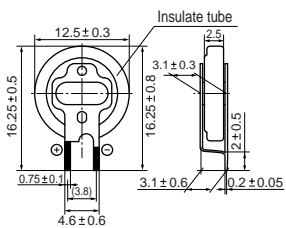
BR2330A/VA  
Fig No.59



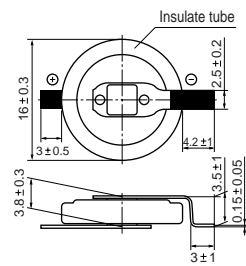
BR2477A/VA  
Fig No.60



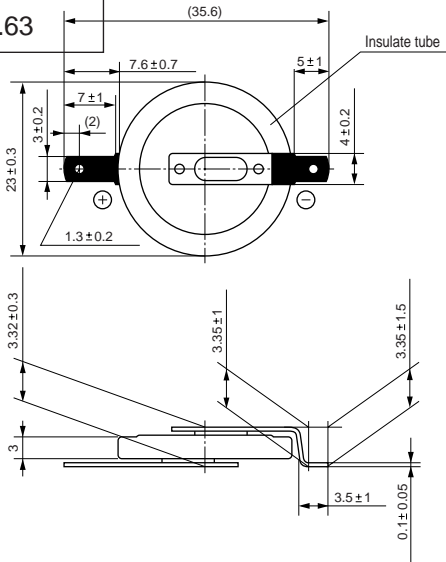
BR1225A/FA  
Fig No.61



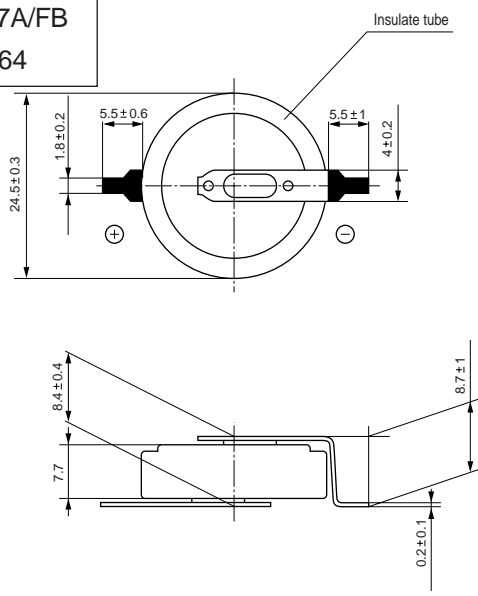
BR1632A/FA  
Fig No.62

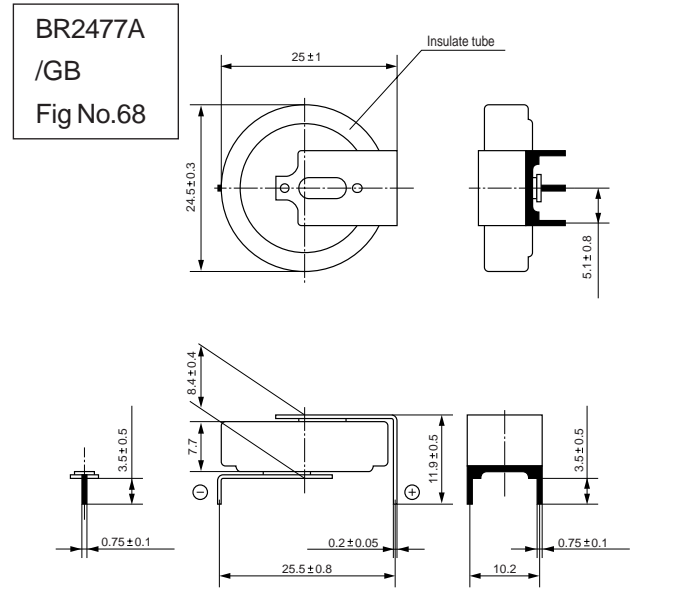
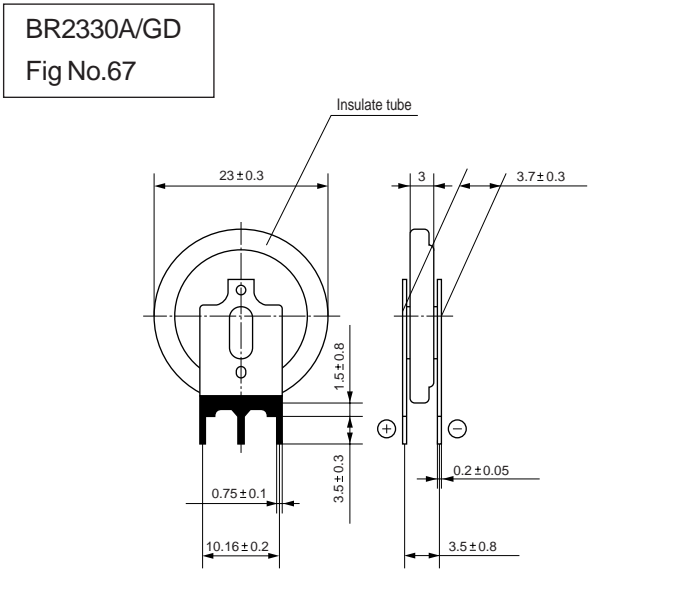
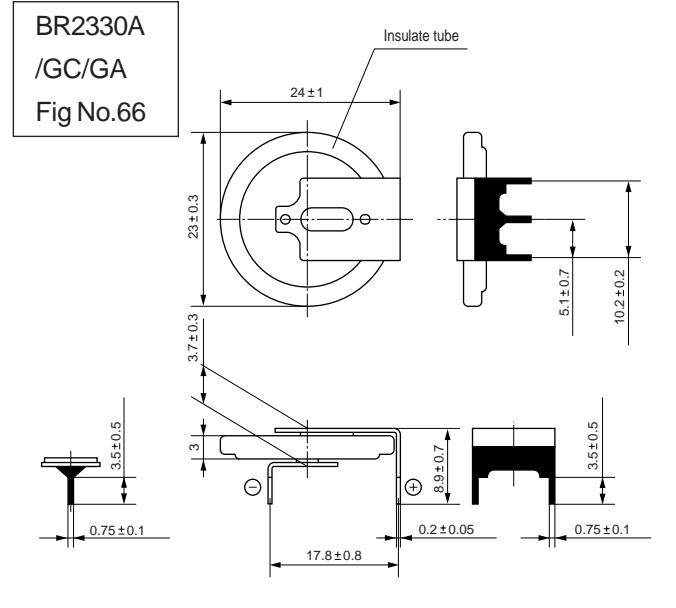
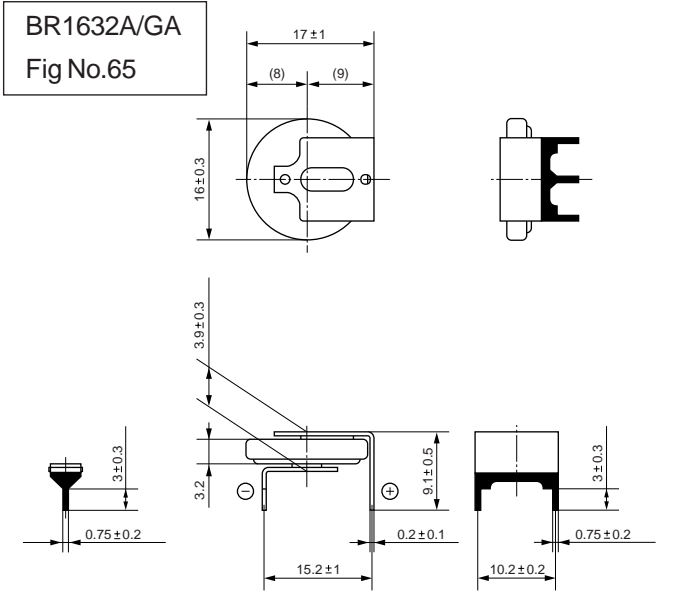


BR2330A/FA  
Fig No.63



BR2477A/FB  
Fig No.64

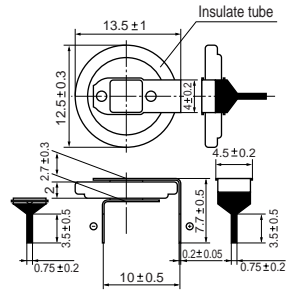




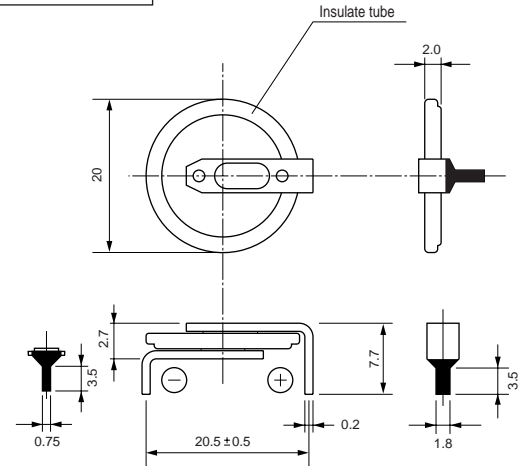
## ■ Vanadium Lithium (VL series) Rechargeable Batteries

| Type      | Model Number | Insulate tube |         | Specifications     |                       | Page/Fig No. |
|-----------|--------------|---------------|---------|--------------------|-----------------------|--------------|
|           |              | With          | Without | Nominal Voltage(V) | Nominal Capacity(mAh) |              |
| H         | VL1220       | /1HF          | /1HE    | 3                  | 7                     | 24/No.69     |
|           | VL2020       | /1HF          |         | 3                  | 20                    | 24/No.70     |
|           | VL2320       | /1HF          |         | 3                  | 30                    | 24/No.71     |
|           | VL2330       | /1HF          |         | 3                  | 50                    | 24/No.72     |
|           | VL3032       | /1HF5         |         | 3                  | 100                   | 24/No.73     |
| V         | VL1220       | /1VC          | /1VB    | 3                  | 7                     | 25/No.74     |
|           | VL2020       | /1VC          |         | 3                  | 20                    | 25/No.75     |
|           | VL2320       | /1VC          |         | 3                  | 30                    | 25/No.76     |
|           | VL2330       | /1VC          |         | 3                  | 50                    | 25/No.77     |
|           | F            | VL621         |         | /F9D               | 3                     | 1.5          |
| VL1216    |              |               | /F5U    | 3                  | 5.0                   | 26/No.79     |
| VL1220    |              | /1FC          |         | 3                  | 7.0                   | 26/No.80     |
| VL2020    |              | /1F2          |         | 3                  | 20                    | 26/No.81     |
| VL2320    |              | /1F2          |         | 3                  | 30                    | 26/No.82     |
| VL2330    |              | /1F3          |         | 3                  | 50                    | 26/No.83     |
| VL3032    |              | /1F2          |         | 3                  | 100                   | 27/No.84     |
| G         |              | VL2020        | /1GU7   |                    | 3                     | 20           |
|           | VL3032       | /1GUF         |         | 3                  | 100                   | 27/No.86     |
| Connecter | VL2330       | /1S22         |         | 3                  | 50                    | 27/No.87     |
|           | VL2330       | /2S22         |         | 6                  | 50                    | 27/No.88     |

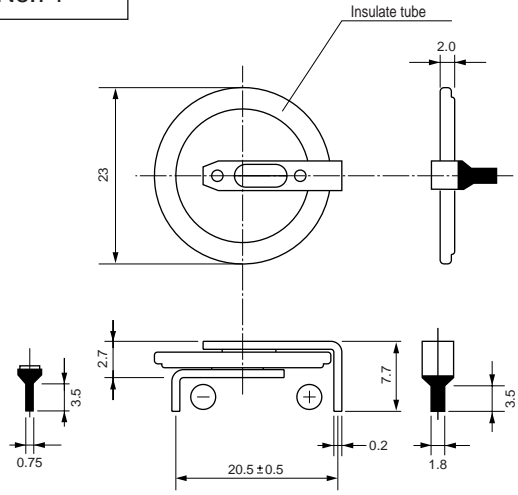
VL1220  
/1HF/1HE  
Fig No.69



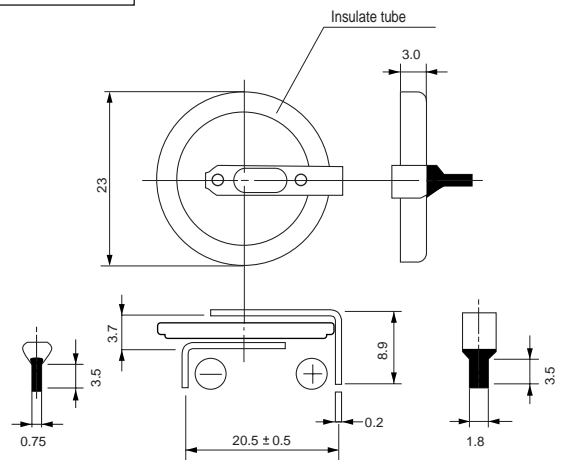
VL2020/1HF  
Fig No.70



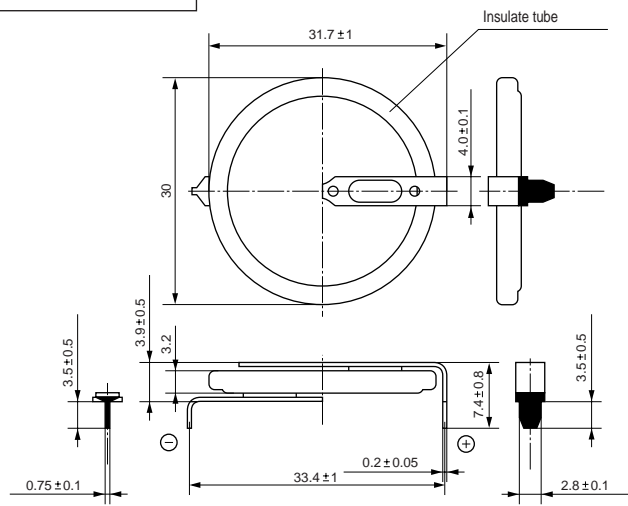
VL2320/1HF  
Fig No.71



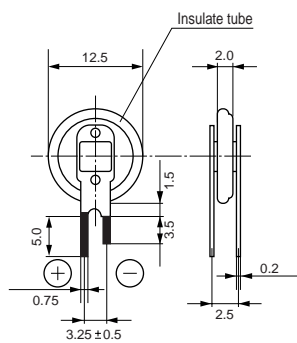
VL2330/1HF  
Fig No.72



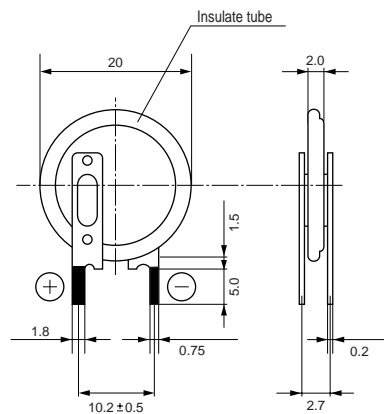
VL3032/1HF5  
Fig No.73



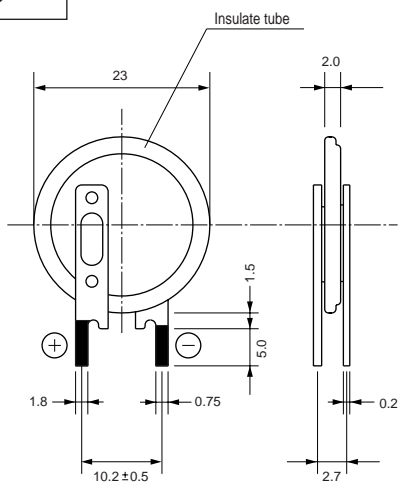
VL1220  
/1VC/1VB  
Fig No.74



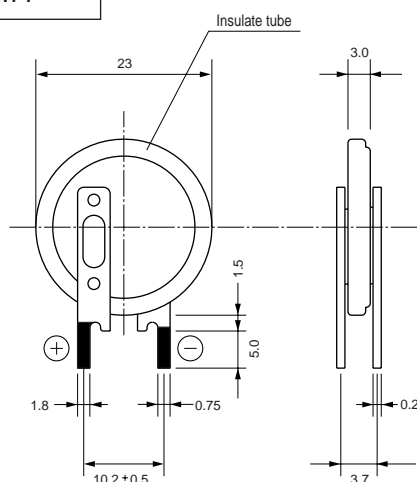
VL2020/1VC  
Fig No.75



VL2320/1VC  
Fig No.76

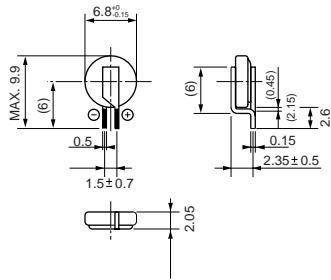


VL2330/1VC  
Fig No.77

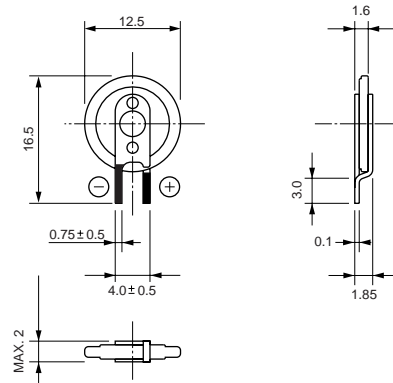




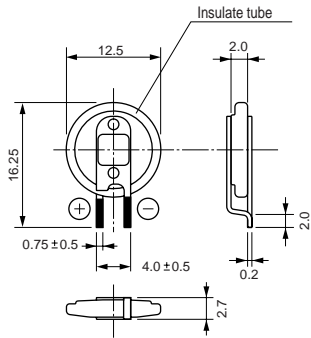
VL621/F9D  
Fig No.78



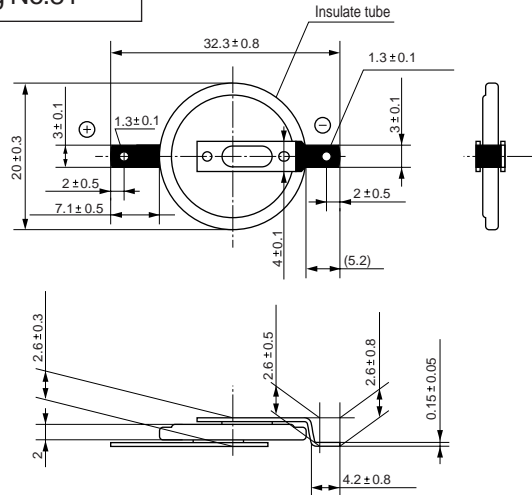
VL1216/1F5U  
Fig No.79



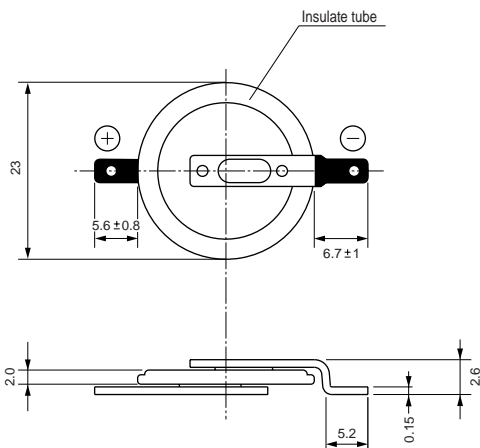
VL1220/1FC  
Fig No.80



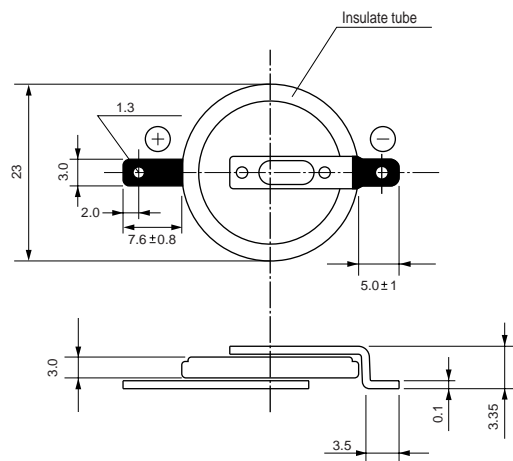
VL2020/1F2  
Fig No.81



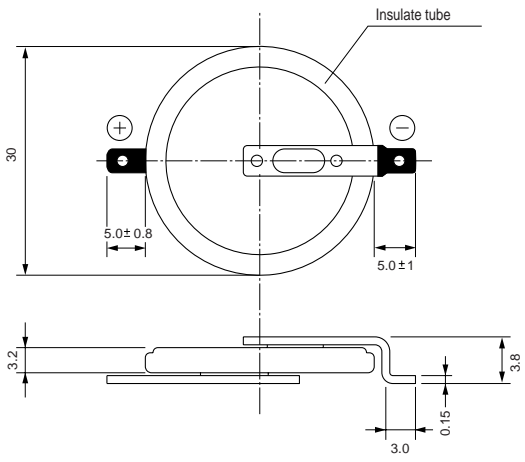
VL2320/1F2  
Fig No.82



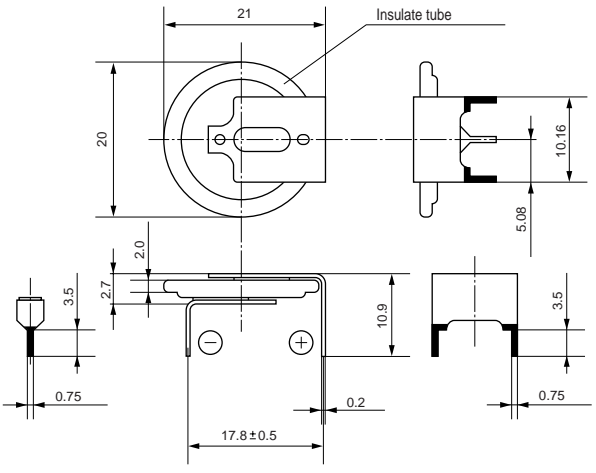
VL2330/1F3  
Fig No.83



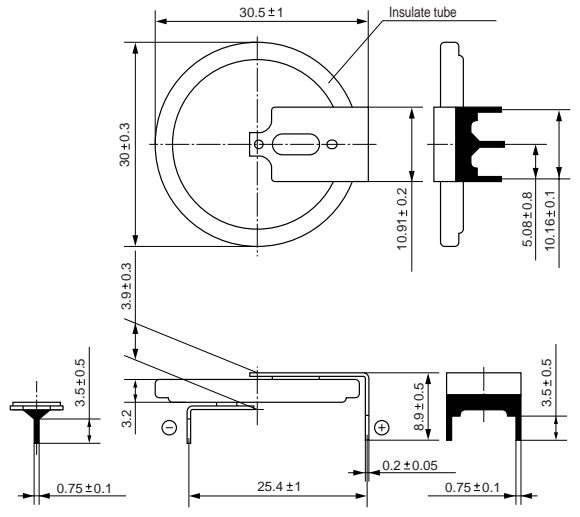
VL3032/1F2 **F** Type  
Fig No.84



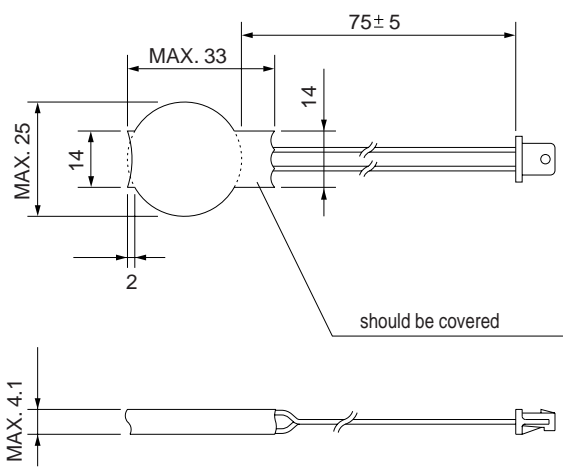
VL2020/1GU7 **G** Type  
Fig No.85



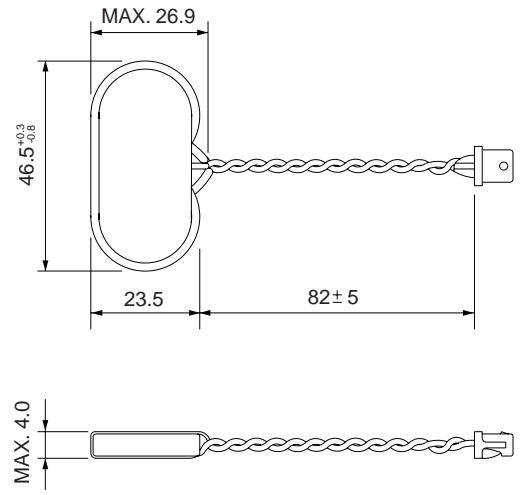
VL3032/1GUF **G** Type  
Fig No.86



VL2330/1S22 **Connector**  
Fig No.87

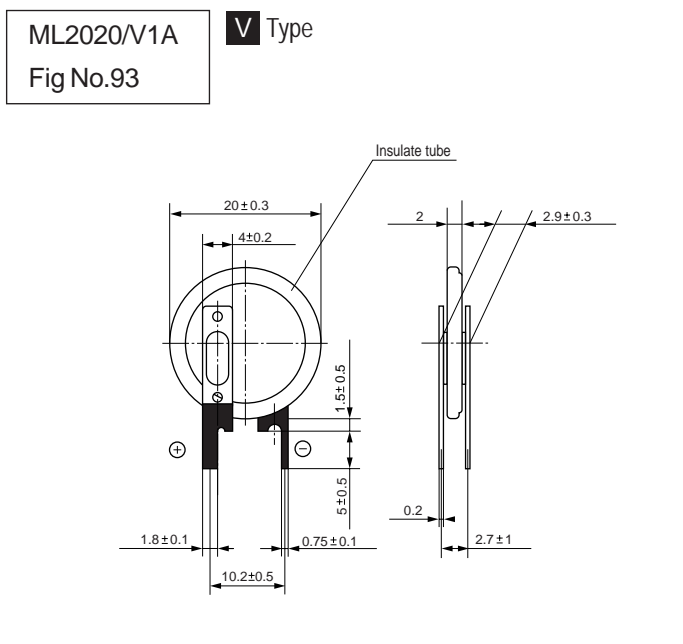
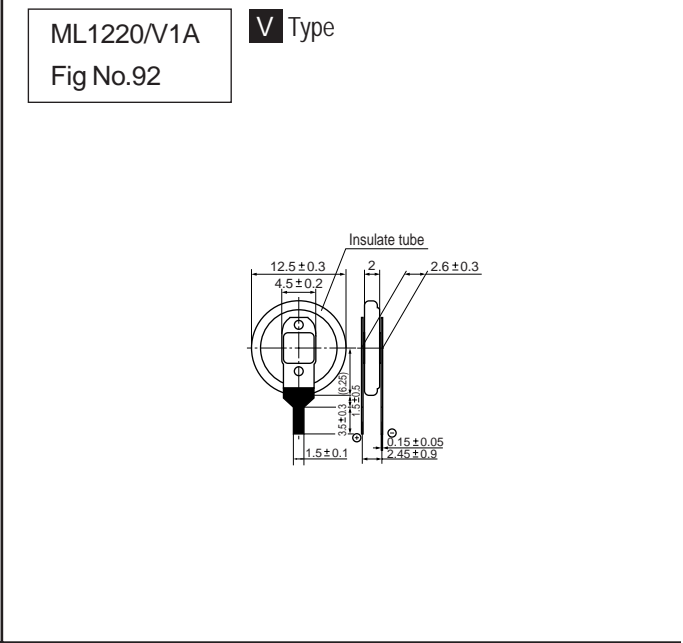
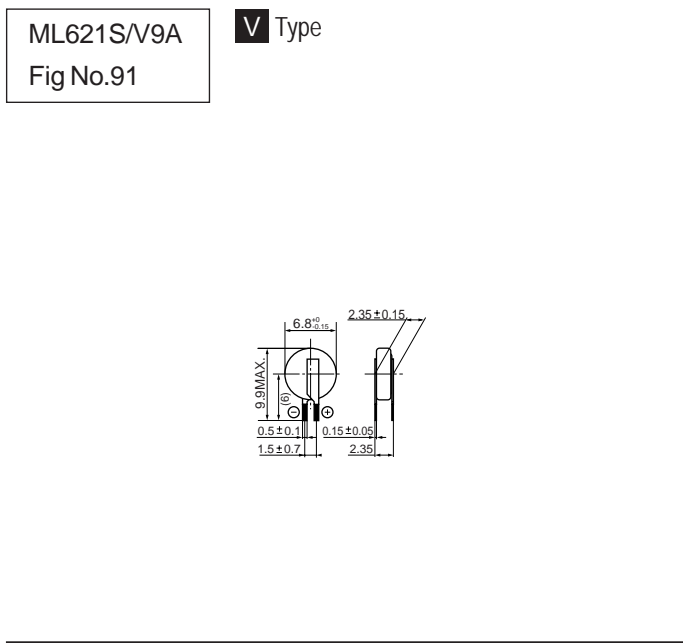
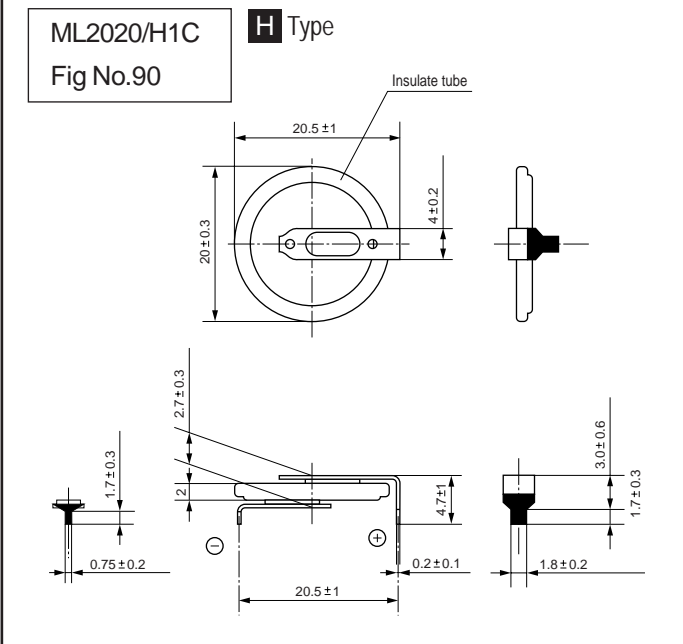
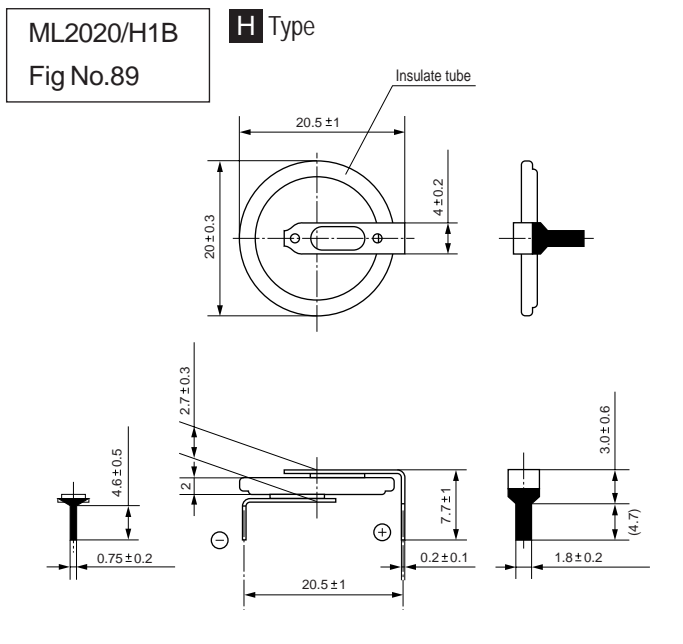


VL2330/2S22 **Connector**  
Fig No.88

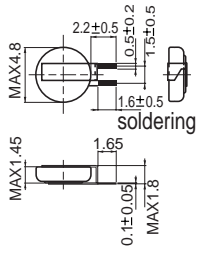


## ■Manganese Lithium (ML series) Rechargeable Batteries

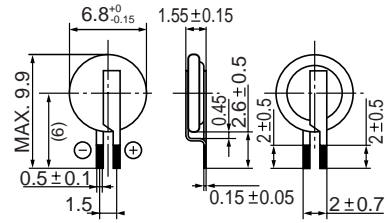
| Type | Model Number | Insulate tube<br>With / Without | Specifications     |                       | Page/Fig No. |           |
|------|--------------|---------------------------------|--------------------|-----------------------|--------------|-----------|
|      |              |                                 | Nominal Voltage(V) | Nominal Capacity(mAh) |              |           |
| H    | ML2020       | /H1B                            | 3                  | 45                    | 30/No.89     |           |
|      | ML2020       | /H1C                            | 3                  | 45                    | 30/No.90     |           |
| V    | ML621S       | /V9A                            | 3                  | 5                     | 30/No.91     |           |
|      | ML1220       | /V1A                            | 3                  | 17                    | 30/No.92     |           |
|      | ML2020       | /V1A                            | 3                  | 45                    | 30/No.93     |           |
| F    | ML414S       | /F9D (Under development)        | 3                  | 1.3                   | 31/No.94     |           |
|      | ML612S       | /F9D                            | 3                  | 2.6                   | 31/No.95     |           |
|      | ML612S       | /FDD                            | 3                  | 2.6                   | 31/No.96     |           |
|      | ML614S       | /F9F                            | 3                  | 3.4                   | 31/No.97     |           |
|      | ML614S       | /F9D                            | 3                  | 3.4                   | 31/No.98     |           |
|      | ML616S       | /F9D                            | 3                  | 2.9                   | 31/No.99     |           |
|      | ML616S       | /FDD                            | 3                  | 2.9                   | 32/No.100    |           |
|      | ML621S       | /F9D                            | 3                  | 5                     | 32/No.101    |           |
|      | ML621S       | /FDD                            | 3                  | 5                     | 32/No.102    |           |
|      | ML920S       | /F9D                            | 3                  | 11                    | 32/No.103    |           |
|      | ML920S       | /F9F                            | 3                  | 11                    | 32/No.104    |           |
|      | ML1220       | /F1A                            | 3                  | 17                    | 32/No.105    |           |
|      | ML1220       | /F1B                            | 3                  | 17                    | 33/No.106    |           |
|      | G            | ML2020                          | /G1A               | 3                     | 45           | 33/No.107 |



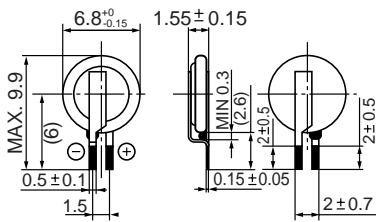
ML414S/F9D  
Fig No.94



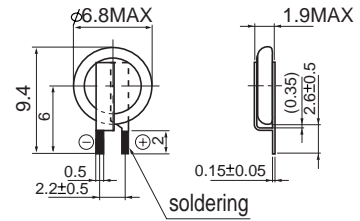
ML612S/F9D  
Fig No.95



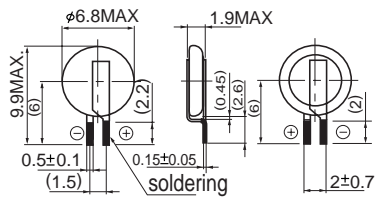
ML612S/FDD  
Fig No.96



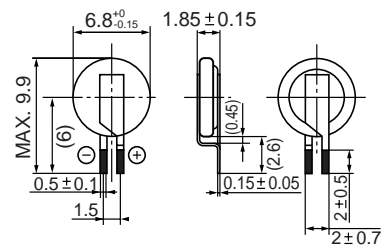
ML614S/F9F  
Fig No.97



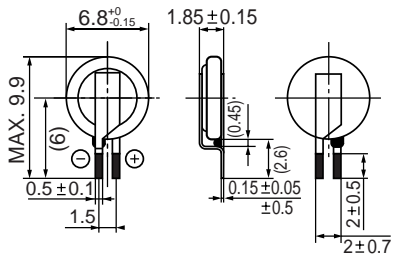
ML614S/F9D  
Fig No.98



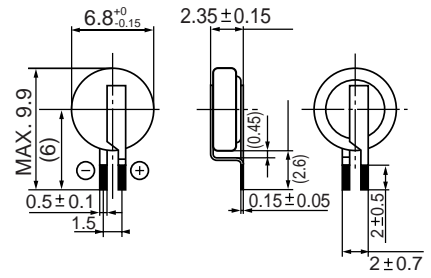
ML616S/F9D  
Fig No.99



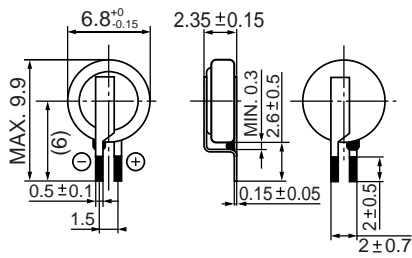
ML616S/FDD  
Fig No.100



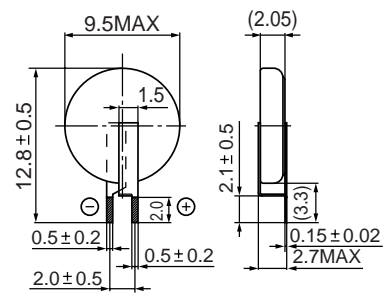
ML621S/F9D  
Fig No.101



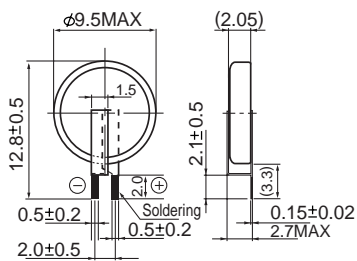
ML621S/FDD  
Fig No.102



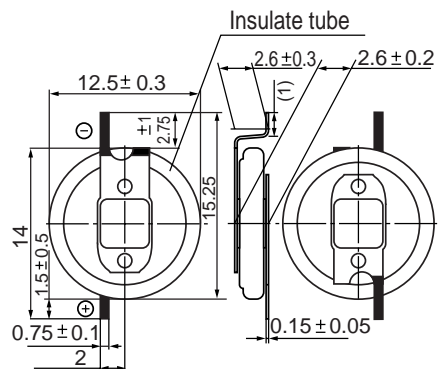
ML920S/F9D  
Fig No.103



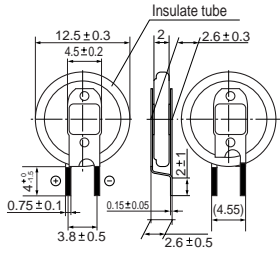
ML920S/F9F  
Fig No.104



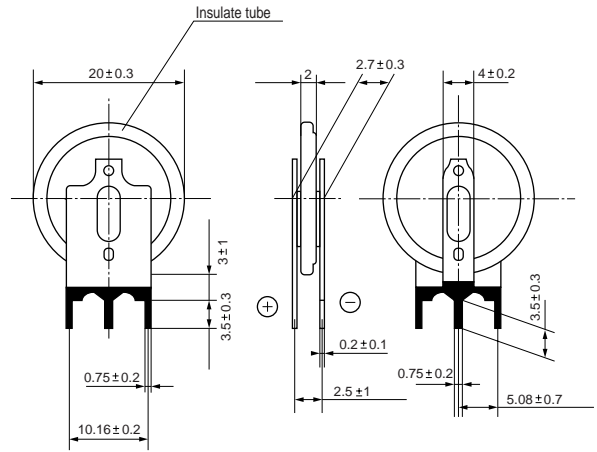
ML1220/F1A  
Fig No.105



ML1220/F1B **F** Type  
Fig No.106



ML2020/G1A **G** Type  
Fig No.107



For more details, please contact :

**Matsushita Battery Industrial Co., Ltd.**  
**OEM Sales Division**

11-66 Honsyuku-cho, Chigasaki,  
Kanagawa, Japan  
Postal code: 253-8567  
Fax: +81-467-53-4210  
<http://www.mbi.panasonic.co.jp/oembatteries/>

Specifications are subject to change without  
notice for further improvement.  
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