



## Battery Handling and Precautions

### Soldering

- Do not solder directly onto batteries. Always solder onto solder tag for connection.
- GP NiMH rechargeable button cells with tags can be flow-soldered in a charged state within 10 seconds.

### Charging and Discharging

- Always charge batteries before first time application even though some of our batteries are delivered in a charged state.
- Parallel charging or connection is not recommended. Parallel charging will produce irregular charging currents. Please consult GP Batteries for more details.
- Never short-circuit or reverse polarity in application.
- Do not use different types of batteries in the same battery assembly.
- If the battery has been deep-discharged, a prolonged charging time is required to bring the battery back to full capacity.

### Storage

- Always store batteries in a cool, dry place.
- After long storage, e.g. over a year, it is desirable to cycle (charge/discharge) the battery 3 times to restore full capacity.
- Do not mix batteries with metal objects during storage or transportation to avoid accidental short-circuit.
- Do not store large quantities of batteries in a densely packed condition when they are in a charged or partially charged state.

### Battery Handling

- Do not incinerate or dismantle batteries. Cell components are corrosive and may be harmful to skin and eyes.
- Do not pull on battery lead wires or connector. Excessive force on the leads or connectors can damage the welding joints or other connections.

### Easy Battery Removal

- Some countries have legislation requiring easy removal of batteries from the devices. When designing a product, consideration should be given to the use of a socket connector and an easy-to-open battery compartment.

Distributed by:

# GP Batteries

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# GP Batteries

## NiMH Rechargeable Button Cells





# NiMH Rechargeable Button Cells

## Specifications

| Model No.                   | Nominal Capacity at 5-hr rate (mAh) | Nominal Dimension (mm) |        | Weight (g) | Standard Charge |             |                              | Nominal Voltage (V) | End Voltage (V) |
|-----------------------------|-------------------------------------|------------------------|--------|------------|-----------------|-------------|------------------------------|---------------------|-----------------|
|                             |                                     | Diameter               | Height |            | Current (mA)    | Time (hour) | Maximum Charging Voltage (V) |                     |                 |
| <b>High Capacity Series</b> |                                     |                        |        |            |                 |             |                              |                     |                 |
| GP15BNH <sup>2**</sup>      | 15                                  | 9.5                    | 2.6    | 0.7        | 1.5             | 16          | 1.5                          | 1.2                 | 1               |
| GP20BNH <sup>2**</sup>      | 20                                  | 11.5                   | 2.25   | 1.0        | 2               | 16          | 1.5                          | 1.2                 | 1               |
| GP25BNH <sup>2</sup>        | 25                                  | 11.6                   | 3.5    | 1.4        | 2.5             | 16          | 1.5                          | 1.2                 | 1               |
| GP40BVH <sup>2**</sup>      | 40                                  | 11.6                   | 5.5    | 1.9        | 4               | 16          | 1.5                          | 1.2                 | 1               |
| GP80BVH <sup>1**</sup>      | 80                                  | 15.5                   | 6.3    | 3.7        | 8               | 16          | 1.5                          | 1.2                 | 1               |
| GP150BVH <sup>1</sup>       | 120                                 | 15.5                   | 7.8    | 4.8        | 12              | 16          | 1.5                          | 1.2                 | 1               |
| GP250BVH <sup>2</sup>       | 250                                 | 25                     | 6.4    | 10.9       | 25              | 16          | 1.5                          | 1.2                 | 1               |
| GP320BVH <sup>1</sup>       | 320                                 | 25                     | 8.7    | 14.1       | 32              | 16          | 1.5                          | 1.2                 | 1               |

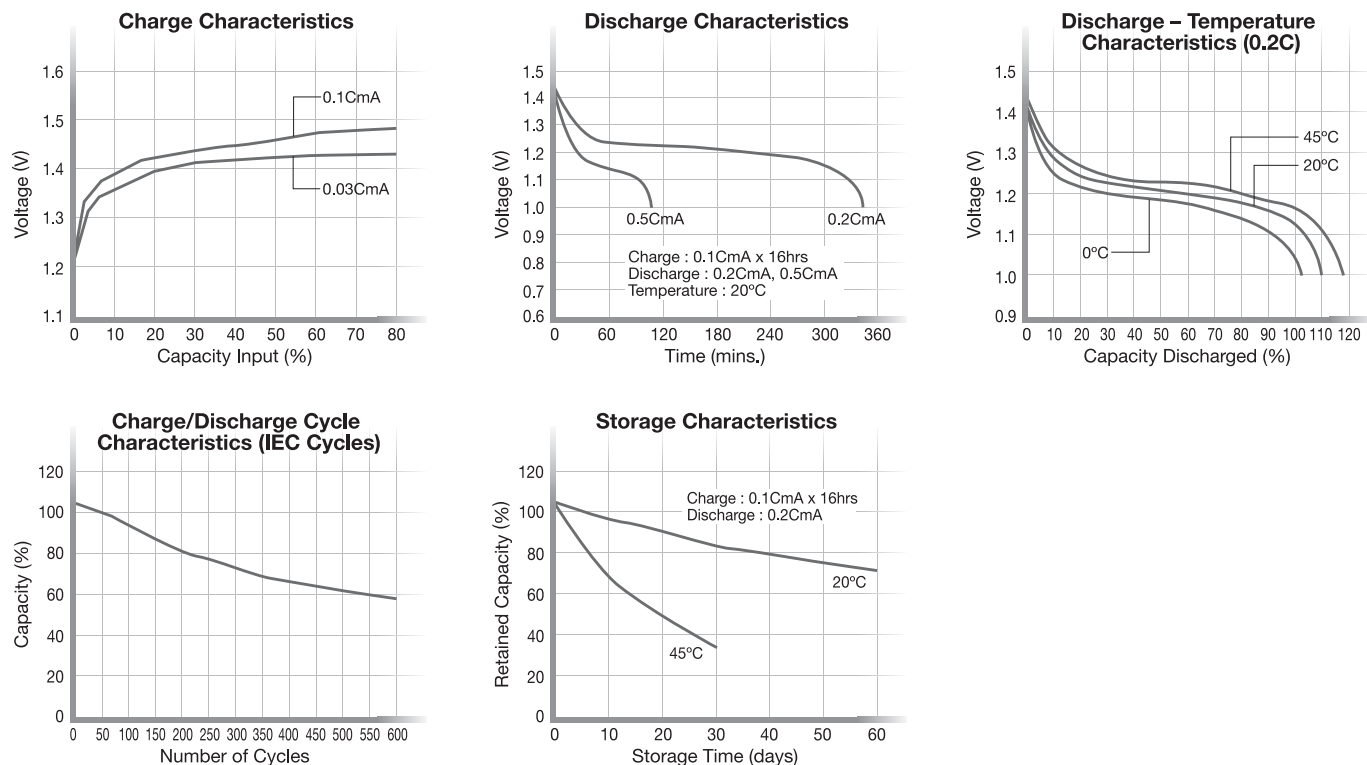
## Standard Series

|                       |     |      |     |      |    |    |     |     |   |
|-----------------------|-----|------|-----|------|----|----|-----|-----|---|
| GP60BVH <sup>1</sup>  | 60  | 15.5 | 6.3 | 3.6  | 6  | 16 | 1.5 | 1.2 | 1 |
| GP170BVH <sup>1</sup> | 170 | 25   | 6.4 | 9.8  | 17 | 16 | 1.5 | 1.2 | 1 |
| GP280BVH <sup>1</sup> | 280 | 25   | 8.7 | 12.6 | 28 | 16 | 1.5 | 1.2 | 1 |

Typical Ambient Temperature : <sup>1</sup> Standard Charge / Discharge : 0°C to 45°C / Storage : -20°C to 45°C  
<sup>2</sup> Standard Charge : 0°C to 65°C / Discharge : -20°C to 65°C / Storage : -40°C to 65°C

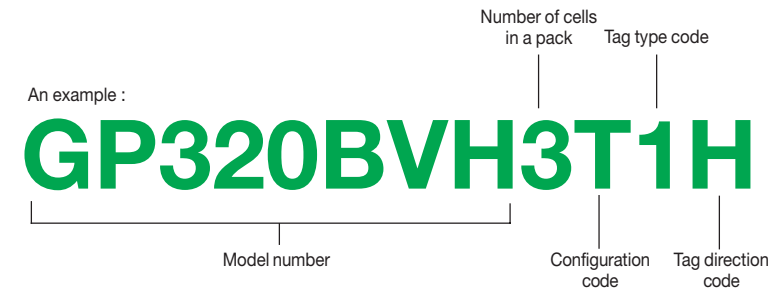
\*\* With UL approval.

## Performance Characteristics



## Configurations

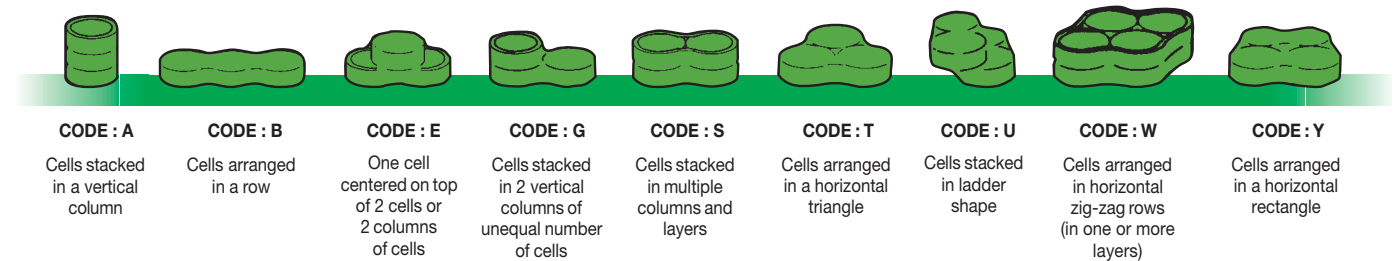
### Designation System for Battery Packs



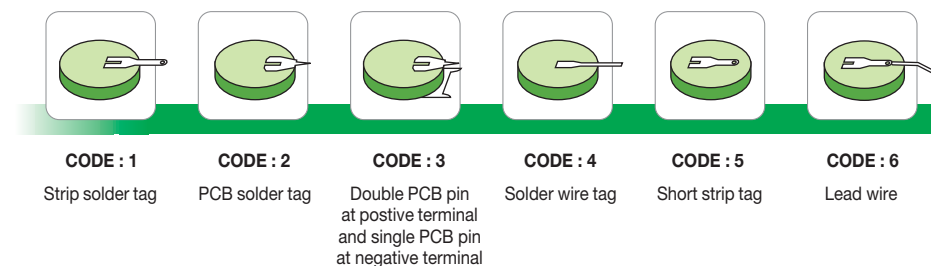
For battery packs with connectors, the last two characters will be used to specify connector type eg. GP320BVH3TMU.



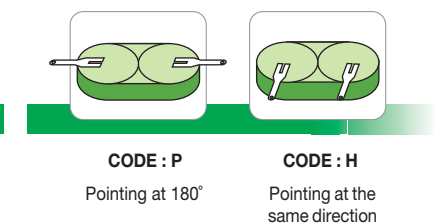
### Standard Configurations for Battery Packs



### Tag Type Specifications



### Tag Direction Codes

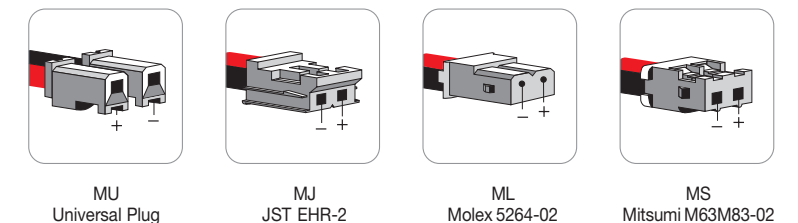


### Connector Type Specifications

**GP Universal Plug** - exclusively from GP, offers distinctive features unparalleled in the market.  
 - U.S. patent no. 5,161,990.

#### Major Benefits

- Compatible with most cordless phone models (interchangeable with Mitsumi, JST, Molex plugs etc.)
- Minimise inventory items
- User friendly



# NiMH Rechargeable Button Cells

## Memory Backup Applications

GP Batteries provide consistent and reliable performance for memory backup (MBU) and real time clock (RTC) application, Built-in PCB tags facilitate the subsequent processing and wave soldering.

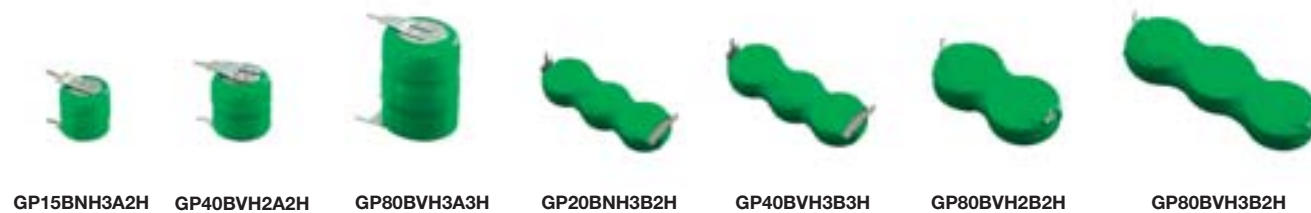
## Specifications

| GP Model No.      | No. of cells | Nominal Voltage (V) | Typical Capacity (mAh) | Nominal Capacity (mAh) | Length (mm) | Width (mm) | Height without pins (mm) | Tag Length (mm) | Weight (g) |
|-------------------|--------------|---------------------|------------------------|------------------------|-------------|------------|--------------------------|-----------------|------------|
| <b>MBU Series</b> |              |                     |                        |                        |             |            |                          |                 |            |
| GP15BNH3A2H       | 3            | 3.6                 | 16                     | 15                     | 9.8         | 10.3       | 10.3                     | 4.5             | 2.3        |
| GP20BNH3B2H       | 3            | 3.6                 | 21                     | 20                     | 35.75       | 12.8       | 4.0                      | 3.0             | 3.0        |
| GP40BVH2A2H       | 2            | 2.4                 | 48                     | 40                     | 11.7        | 12.5       | 12.5                     | 4.5             | 4.2        |
| GP40BVH3A2H       | 3            | 3.6                 | 48                     | 40                     | 17.3        | 12.5       | 12.5                     | 4.5             | 6.1        |
| GP40BVH3B3H       | 3            | 3.6                 | 48                     | 40                     | 36.0        | 12.5       | 7.0                      | 3.5             | 6.1        |
| GP80BVH2A2H       | 2            | 2.4                 | 90                     | 80                     | 12.5        | 16.5       | 16.5                     | 4.5             | 7.7        |
| GP80BVH2B2H       | 2            | 2.4                 | 90                     | 80                     | 31.5        | 11.5       | 7.0                      | 4.5             | 7.7        |
| GP80BVH3A3H       | 3            | 3.6                 | 90                     | 80                     | 19.6        | 16.5       | 16.5                     | 4.5             | 11.7       |
| GP80BVH3B2H       | 3            | 3.6                 | 90                     | 80                     | 43.0        | 11.5       | 7.0                      | 4.5             | 11.7       |

\* Different configurations and capacities are available upon request.

## Major Applications

PC, VCR, desktop PC's, notebooks, PDA and car stereo etc



## Bridging Applications

GP Batteries offer reliable and superior power backup for bridging purpose of mobile computers. It acts as an ultimate power supply temporarily during replacement of main battery. Batteries can be equipped with different connectors to suit specific requirement. The configuration of 6 cells together horizontally with connector is widely used in most portable power electronic devices.

## Specifications

| GP Model No.           | No. of cells | Nominal Voltage (V) | Typical Capacity (mAh) | Nominal Capacity (mAh) | Length (mm) | Width (mm) | Height (mm) | Weight (g) | Wire Length (mm) |
|------------------------|--------------|---------------------|------------------------|------------------------|-------------|------------|-------------|------------|------------------|
| <b>Bridging Series</b> |              |                     |                        |                        |             |            |             |            |                  |
| GP15BNH6BMX            | 6            | 7.2                 | 16                     | 15                     | 59.0        | 13.0       | 3.4         | 4.9        | 35               |
| GP20BNH6BMX            | 6            | 7.2                 | 21                     | 20                     | 71.5        | 14.5       | 4.0         | 7.0        | 35               |
| GP20BNH6SMX            | 6            | 7.2                 | 21                     | 20                     | 36.7        | 14.5       | 7.0         | 7.0        | 20               |
| GP40BVH6BMX            | 6            | 7.2                 | 48                     | 40                     | 70.5        | 13.5       | 6.7         | 12.5       | 43               |
| GP40BVH6WMX            | 6            | 7.2                 | 48                     | 40                     | 42.5        | 22.5       | 7.5         | 12.5       | 60               |
| GP80BVH6BMX            | 6            | 7.2                 | 90                     | 80                     | 94.0        | 17.8       | 7.0         | 23.1       | 60               |
| GP80BVH6SMX            | 6            | 7.2                 | 90                     | 80                     | 48.0        | 18.5       | 13.2        | 24.0       | 60               |

\* Different configurations and capacities are available upon request.

## Major Applications

Notebooks, palmtops and PDA etc

