

Coin type Rechargeable Lithium Batteries



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Panasonic Energy Co., Ltd.

1. Long life

Achieves long life based on low self discharge rate and superior charge/discharge cycle characteristics

2. High quality based on many years of production

High reliability with many years of development and manufacturing experience

3. Suitable for many small devices

Available for various small devices such as memory backup, RTC backup, remote keyless entry and watches



Market sector

- ✓ Coin type Rechargeable Lithium Batteries are suitable for devices which batteries are not replaceable and difficult to replace due to the device's structure

Watch



Drive recorder

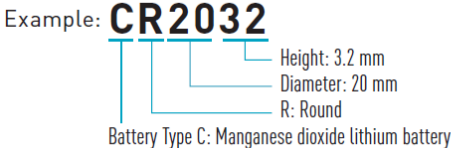


Camera

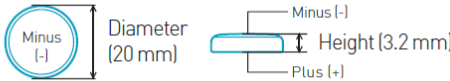


Rechargeable Lithium Batteries	Coin type Rechargeable Lithium Batteries	VL Series (Vanadium Rechargeable Lithium Batteries)
		ML Series (Manganese Rechargeable Lithium Batteries)
		CTL Series (Cobalt Titanium Rechargeable Lithium Batteries)
		MT Series (Manganese Titanium Rechargeable Lithium Batteries)

■ Example Lithium Battery Model-Number Composition (Coin Type)



Size



VL series Vanadium Rechargeable Lithium Batteries



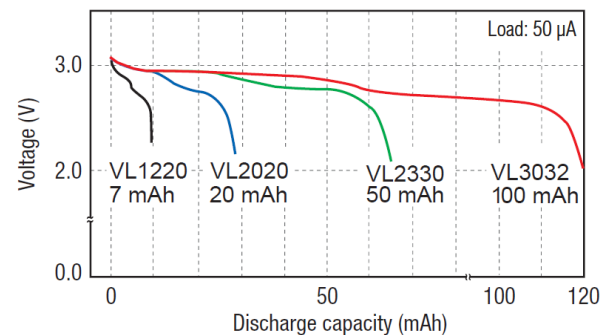
Features

- Retains high discharge voltage performance

Applications

Memory backup(printers, composite machine, medical devices, FA equipment), remote keyless entry, fire alarms, etc

Discharge characteristics



Model No.*1	Nominal voltage (V)	Nominal capacity (mAh)*2	Continuous drain (mA)	Dimensions (mm)		Mass (g)	Charge voltage (V)	Operating temperature range
				Diameter	Height			
VL1220	3	7.0	0.02	12.5	2.0	0.80	3.25 to 3.55	-20 °C to 60 °C
VL2020		20.0	0.07	20.0		2.10		
VL2330		50.0	0.10	23.0	3.0	3.50		
VL3032		100.0	0.20	30.0	3.2	6.30		

*1. Tabbed type batteries only

*2. Nominal capacity shown above is based on standard drain and cutoff voltage down to 2.5V at 20°C

ML series Manganese Rechargeable Lithium Batteries



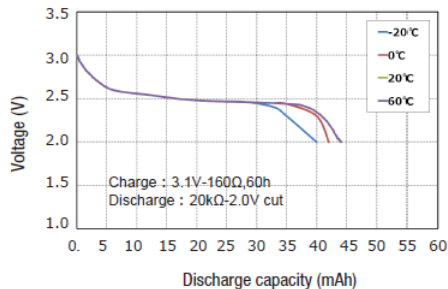
Features

- Ideal for long-term memory backup with extra-high capacity

Applications

Memory backup(drive recorder, PCs, communication/radio, medical devices, FA equipment), etc

Discharge characteristics



Model No.	Nominal voltage (V)	Nominal capacity (mAh)*1	Continuous drain (mA)	Dimensions (mm)		Mass (g)	Charge voltage (V)	Operating temperature range
				Diameter	Height			
ML2020	3	45.0	0.12	20.0	2.0	2.20	2.8 to 3.2	-20 °C to 60 °C

*1. Nominal capacity shown above is based on standard drain and cutoff voltage down to 2.0V at 20°C

CTL series Cobalt Titanium Rechargeable Lithium Batteries



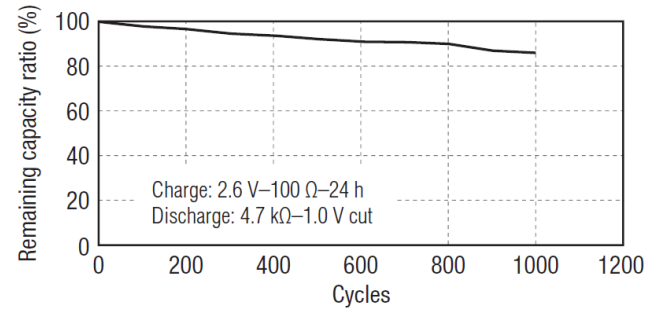
Features

- Rechargeable batteries with superior charge/discharge cycle
- Compared to MT series, CLT series retains higher voltage (2.3V)
- Long term reliability proven by many solar watch designs

Applications

Digital watches, sensing devices, etc

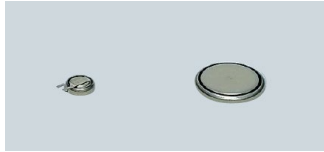
■ Charge/Discharge cycle characteristics(e.g. CLT920F)



Model No.	Nominal voltage (V)	Nominal capacity (mAh)*1	Continuous drain (mA)	Dimensions (mm)		Mass (g)	Charge voltage (V)	Operating temperature range
				Diameter	Height			
CTL621F	2.3	3.6	0.02	6.8	2.1	0.25	2.5 to 2.7	-20 °C to 60 °C
CTL920F		7.7	0.05	9.5	2.0	0.45		
CTL1616F		13.0	0.10	16.0	1.6	1.00		

*1 Nominal capacity shown above is based on standard drain and cutoff voltage down to 1.0 V at 20 °C.

MT series Manganese Titanium Rechargeable Lithium Batteries **Panasonic ENERGY**



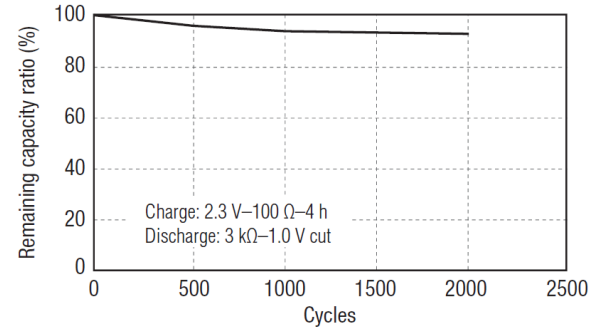
Features

- 1.5V rechargeable Lithium battery with sustained discharge endurance

Applications

Watch, etc

■ Charge/Discharge cycle characteristics(e.g. MT920)

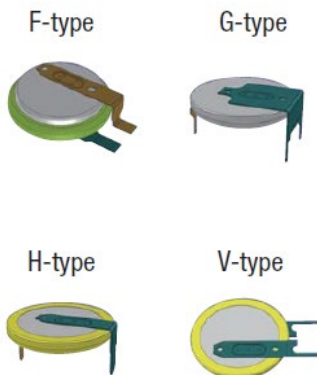


Model No.	Nominal voltage (V)	Nominal capacity (mAh)**	Continuous drain (mA)	Dimensions (mm)		Mass (g)	Charge voltage (V)	Operating temperature range
				Diameter	Height			
MT516F	1.5	1.8	0.025	5.8	1.6	0.14	1.8 to 2.6	-10 °C to 60 °C
MT621		2.5		6.8	2.1	0.23		
MT920		5.0		9.5	2.0	0.41		

*1. Nominal capacity shown above is based on standard drain and cutoff voltage down to 1.0V at 20°C

About terminal

- ✓ Panasonic offers a variety of tab terminals to meet your requests.
- ✓ Please note that it will be a customized solution if you need another tab terminal which is not shown on the website.



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