

MANGANESE TITANIUM LITHIUM RECHARGEABLE BATTERIES (MT SERIES)

Overview

Manganese titanium lithium rechargeable batteries are compact rechargeable batteries developed for rechargeable watches, and backup power supplies for pagers and timers. The batteries employ lithium-manganese complex oxide as cathode material, and lithium-titanium oxide the (AB204) as the anode material. The batteries provide a capacity that is more than 10 times that of capacitors of the same size. Panasonic was the first company to introduce them (Note 1).

(Note 1: Press announcement on March 29,1995)

Features

- **Large capacity in a miniature size comparable to chip components**
When fully charged, MT621 and MT920 are operable for about 1000 and 2500 hours respectively at a 1.2 μ A load.
- **Flat operating voltage**
The operating voltage is comparatively flat in the range between 1.5 V and 1.2 V.
- **Superior charge characteristics**
Charging efficiency is nearly 100% with small charging loss. The charge voltage can be set flexibly in the range between 1.6 V and 2.6 V.

- **Charging/discharging over a long period is possible.**
More than 500 charging and discharging cycles to a discharge low limit voltage of 1 V (i.e. charge/discharge of discharge depth 100%) is possible.
- **Excellent voltage and overdischarge withstanding characteristics**
The batteries can withstand a continuous voltage application of 2.6V at a temperature as high as 60° and furthermore can withstand continuous over discharge at OV.
- **Small self discharge**
The self discharge in 20 days at 60°C (equivalent to 1 year at normal temperature) is not more than approximately 10%.

Applications

- Main power supply in compact products such as rechargeable watches
- Memory backup power supplies for pagers and timers

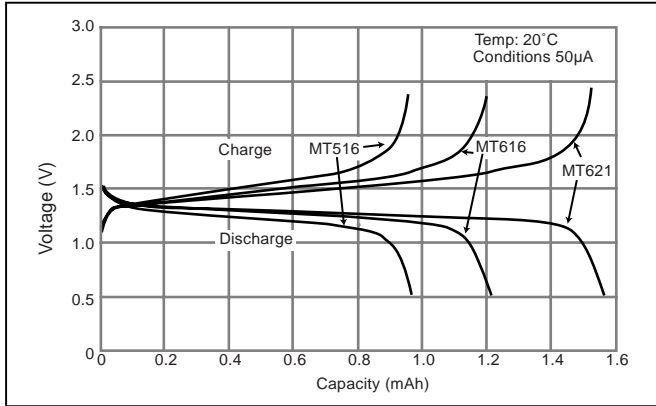
Specification Table

Model No.	JIS	IEC	Electrical characteristics 20°C			Dimensions (Max.)		Approx. weight (g)
			Nominal voltage (V)	Nominal capacity *1 (mAh)	Continuous drain	Diameter (mm)	Height (mm)	
					Standard (mA)			
MT516	---	---	1.5	0.9	0.1	5.8	1.6	0.15
MT616	---	---	1.5	1.05	0.1	6.8	1.6	0.2
MT621	---	---	1.5	1.5	0.1	6.8	2.1	0.3
MT920	---	---	1.5	4.0	0.2	9.5	2.0	0.5
MT1620	---	---	1.5	14.0	0.5	16.0	2.0	1.3

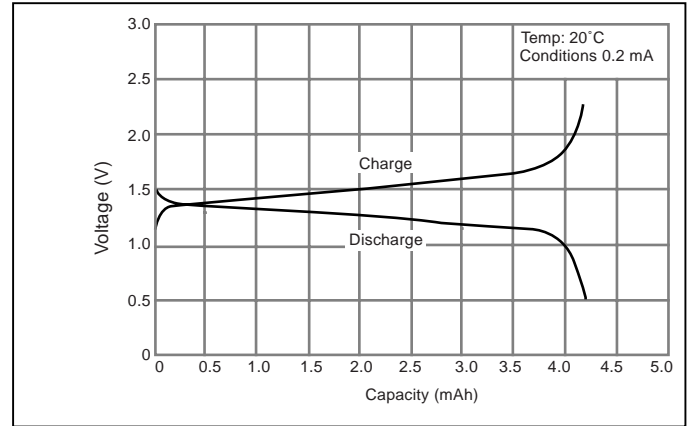
*1 Nominal capacity shown above is based on standard drain and cut off voltage down to 1.0 V at 20°C

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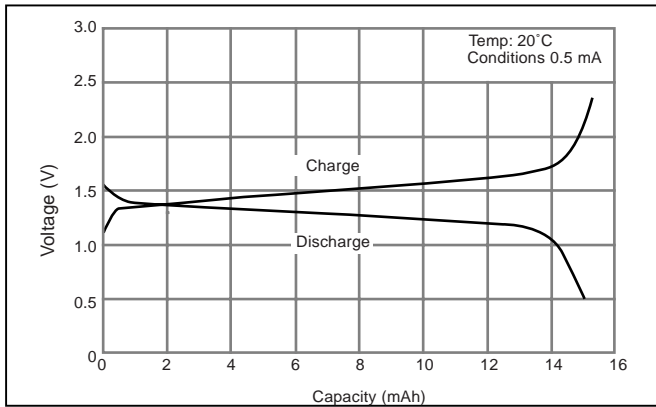
- Charge/discharge characteristics (MT516/MT616/MT621)



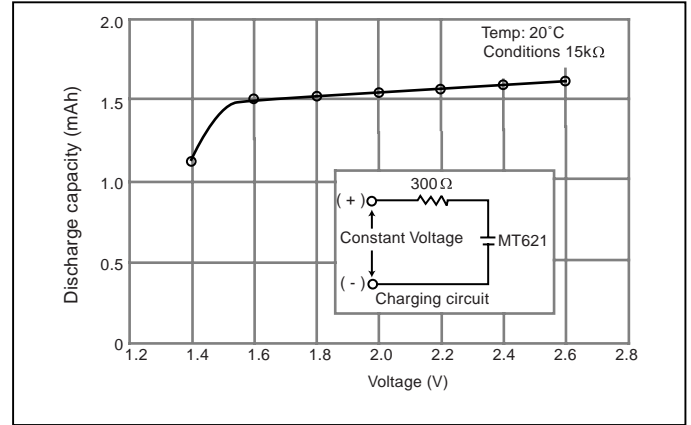
Charge/discharge characteristics (MT920)



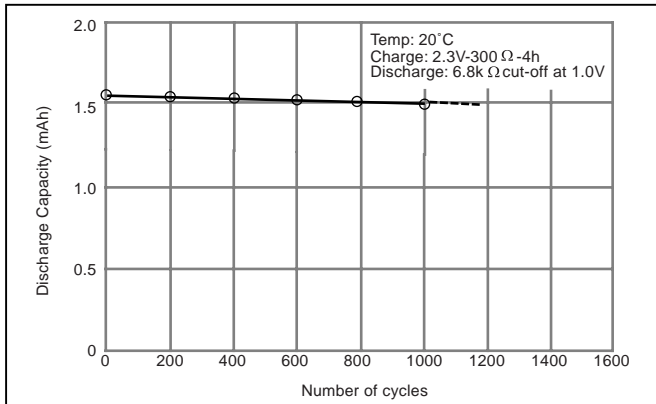
Charge/discharge characteristics (MT1620)



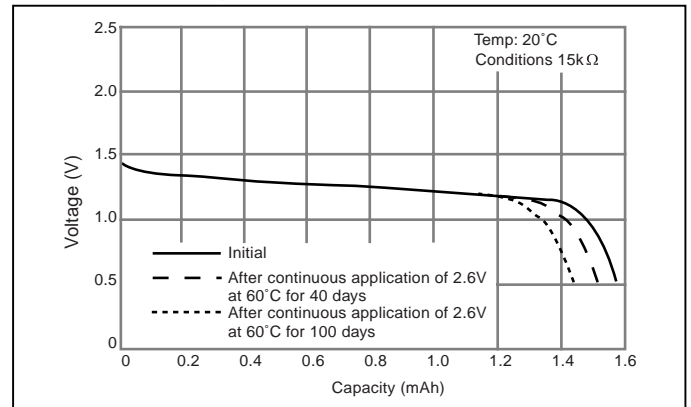
Constant voltage charging characteristics (Capacity recovery as a function of charge voltage: MT621)



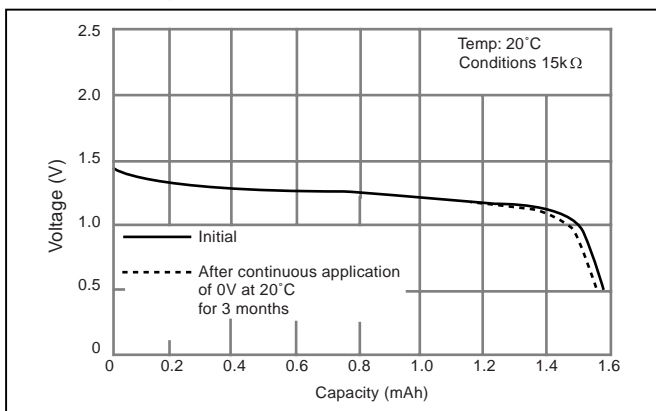
Cycle life characteristics (MT621)



Withstand voltage characteristics (MT621)

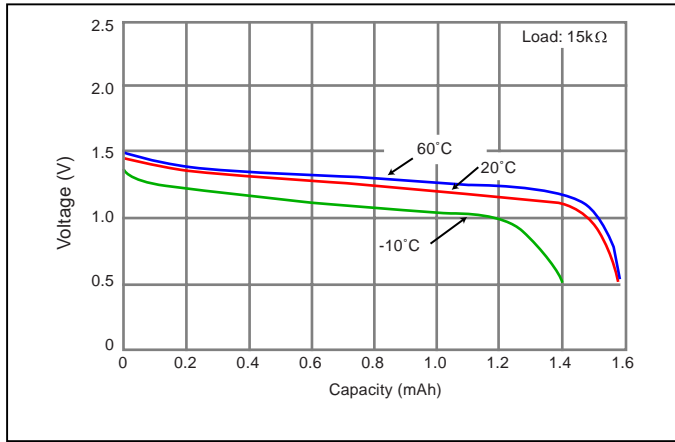


Overdischarge characteristics (MT621)

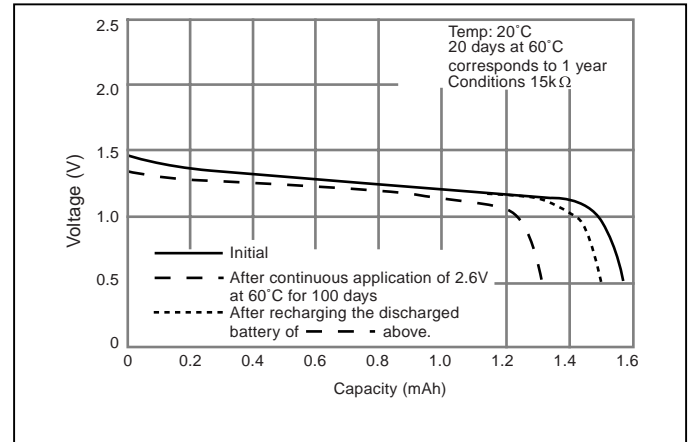


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Discharge temperature characteristics (MT621)



Storage characteristics (MT621)



Current drain as a function of duration

