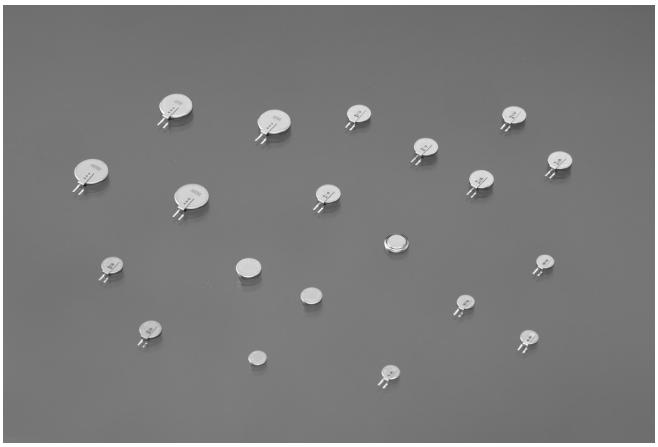
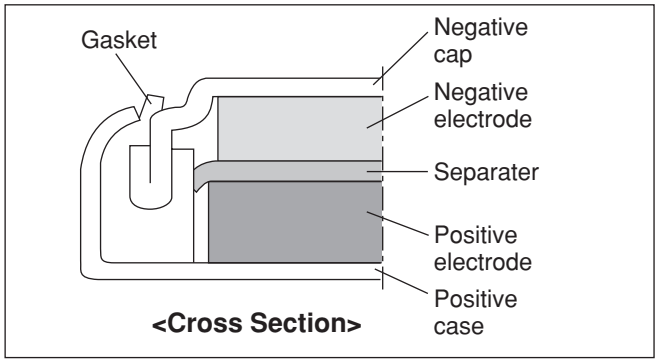
MS414GE / MS412FE / MS518SE / MS614SE / MS621FE / MS920SE



MS (Manganese Silicon) lithium rechargeable batteries, developed by Seiko Instruments Inc., use silicon oxide as the anode and a lithium manganese composite oxide as the cathode. As a result, they offer long cycle life and highly stable overdischarge characteristics.



<Cross Section>

FEATURES

- Large discharge capacity :
  For high operational voltage range of 3.3V to 2.0V.
- Long cycle life :
  Cycle life of over 100 cycles (over 50 cycles for MS414GE) under charge/discharge conditions of 3.1V to 2.0V (D.O.D.100%).
- Excellent overdischarge characteristics :
  Continued stable capacity characteristics even after the battery is overdischarged down to 0.0V.
- Operation over a wide temperature range:
  Operating temperature range : –20°C to +60°C
  Consult us for using the battery at a temperature beyond the above temperature range.
- RoHS Compliant
- Approved by UL (Underwriters Laboratories Inc.)
  UL File No. MH15628

APPLICATIONS

- Backup power supply for memory or clock function in various types of electronic equipment for mobile communication, office automation, audio-visual equipment, mobile information equipment, etc. (smartphone, tablet, cellphone, PHS, cordless phone, fax machine, PC, video camera, digital camera, tuner, handy terminal, etc.)
- Main power supply for small and slim portable equipment.

SPECIFICATIONS

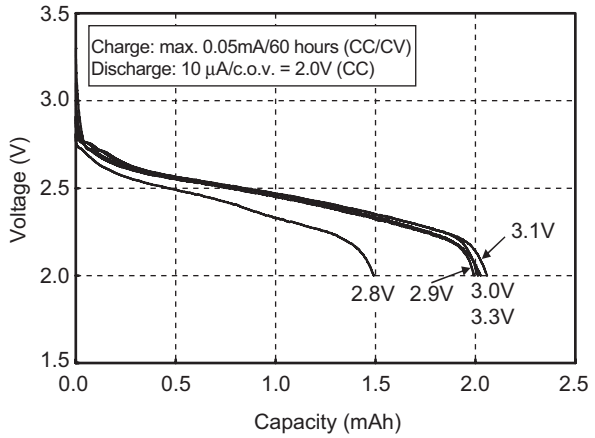
Type	Nominal Voltage (V)	Charge Voltage (Standard Charge Voltage)*6 (V)	Nominal Capacity (mAh)*1	Internal Impedance (Ω)*2	Standard Charge/ Discharge Current (mA)	Maximum Discharge Current (Continuous) (mA)*3	Cycle Life (Time)*4		Size (mm)		Weight (g)
							100%*5 D.O.D. (Depth of Discharge)	20%*5 D.O.D. (Depth of Discharge)	Diameter	Height	
MS414GE	3	2.8 to 3.3 (3.1)	2.0	100	0.010	0.05	50	500	4.8	1.4	0.08
MS412FE	3	2.8 to 3.3 (3.1)	1.0	100	0.010	0.10	100	1000	4.8	1.2	0.07
MS518SE	3	2.8 to 3.3 (3.1)	3.4	60	0.010	0.15	100	1000	5.8	1.8	0.13
MS614SE	3	2.8 to 3.3 (3.1)	3.4	80	0.015	0.25	100	1000	6.8	1.4	0.17
MS621FE	3	2.8 to 3.3 (3.1)	5.5	80	0.015	0.25	100	1000	6.8	2.1	0.23
MS920SE	3	2.8 to 3.3 (3.1)	11.0	35	0.050	0.80	100	1000	9.5	2.1	0.47

*1. Nominal capacity: Typical value of discharge capacity between 3.1V and 2.0V
*2. Internal impedance is measured using an AC (Alternating Current) method at the fully charged state.
*3. Maximum discharge current indicates the value of a current for approximately 50% of the nominal capacity.
*4. Cycle Life indicates the times charge/discharge is repeated for approximately 50% of the capacity values in the specification sheet.
*5. 100% and 20% are based on nominal capacity.
*6. A constant voltage charge is recommended, but due to a limit in charge current, it is necessary to insert a resistor to regulate the charge current.
Please see Page 19 for resister value. Contact us for further details.
If a constant current charge is required, contact us for more information.

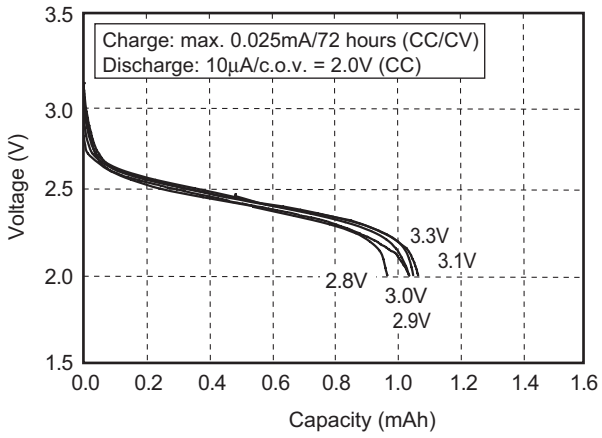
MS Lithium Rechargeable Batteries are not reflowable. Please mount them on PCB by hand soldering.

DISCHARGE CHARACTERISTICS (CHARGE VOLTAGE DEPENDENCE)

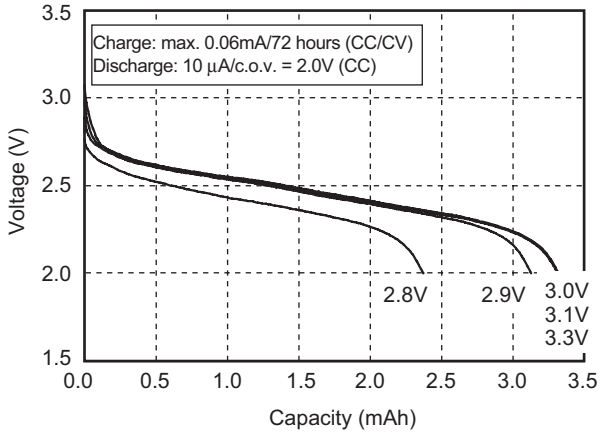
MS414GE



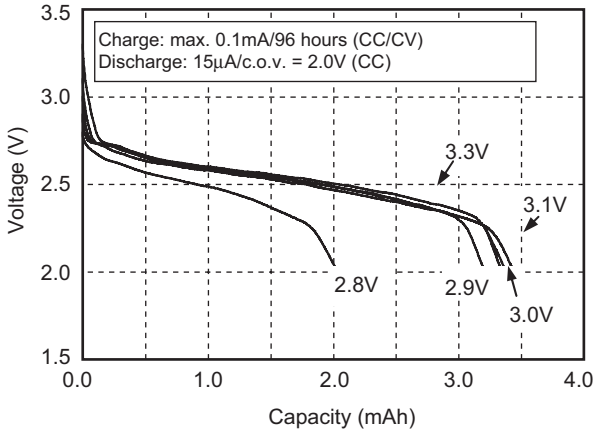
MS412FE



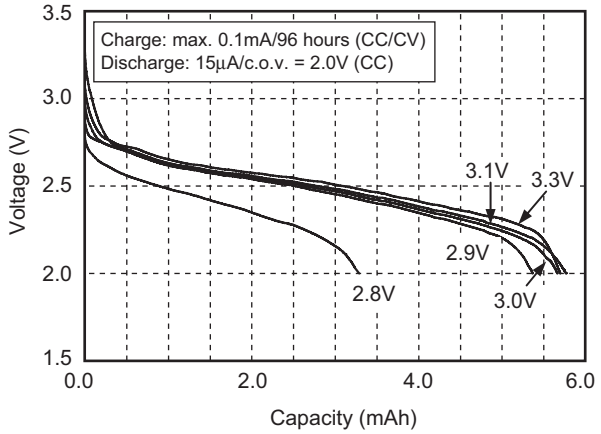
MS518SE



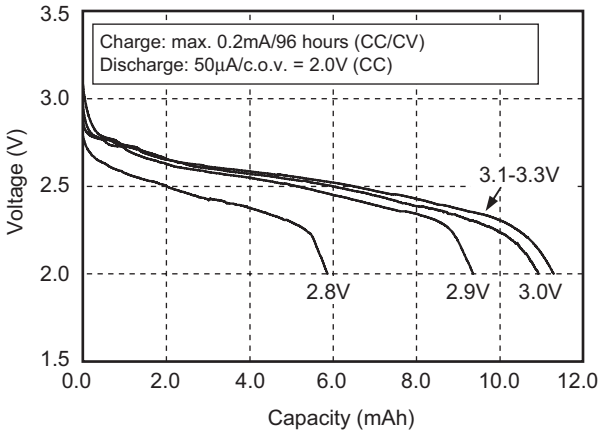
MS614SE



MS621FE



MS920SE

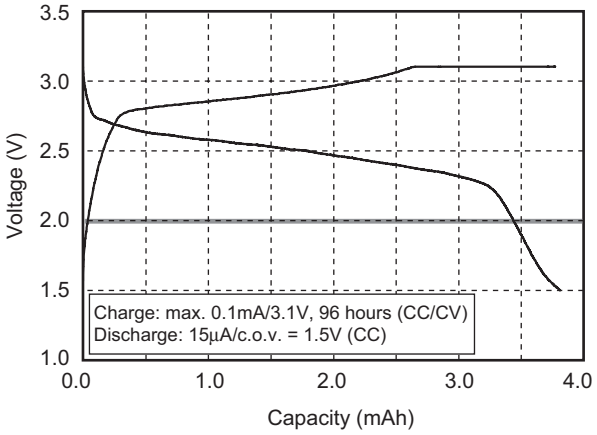


* c.o.v. : Cut off Voltage

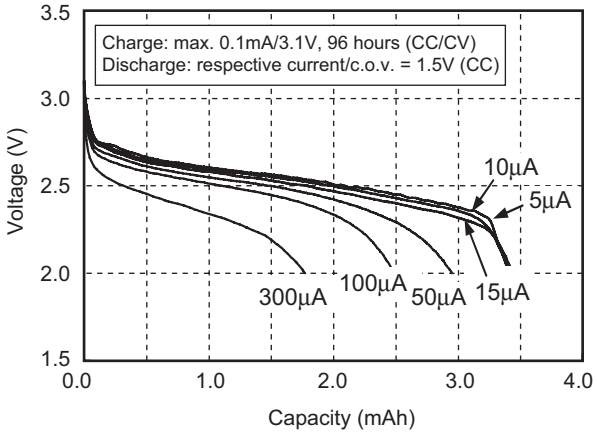
CHARACTERISTICS

MS614SE

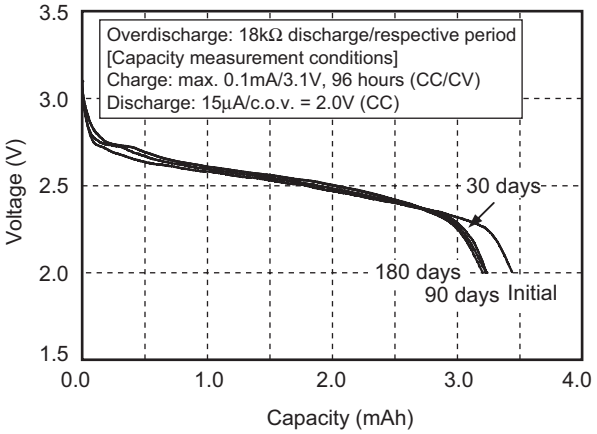
Charge/discharge characteristics



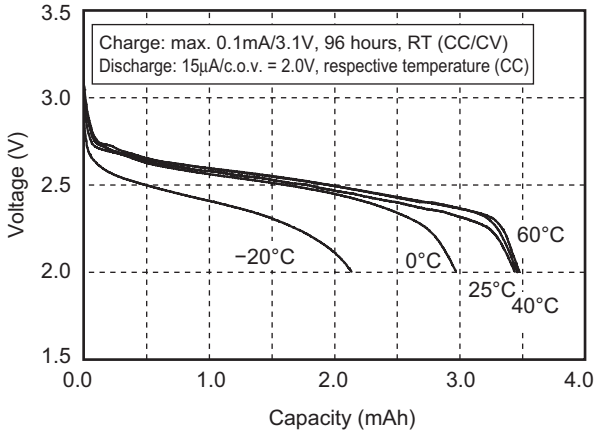
Discharge Characteristics at Various Discharge Current



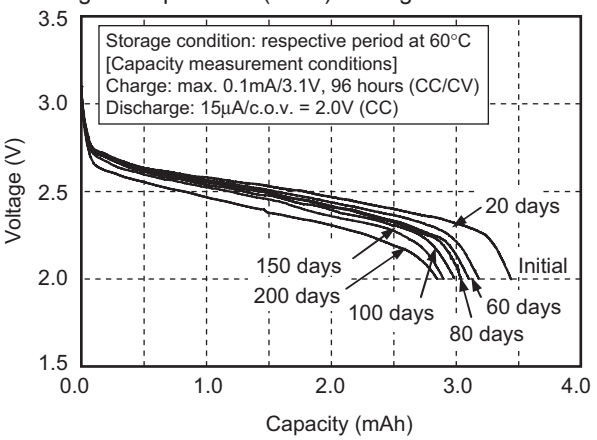
Overdischarge Characteristics



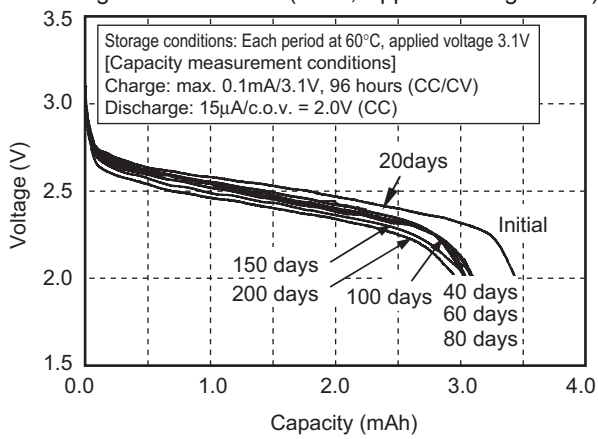
Discharge Temperature Characteristics



High Temperature (60°C) Storage Characteristics

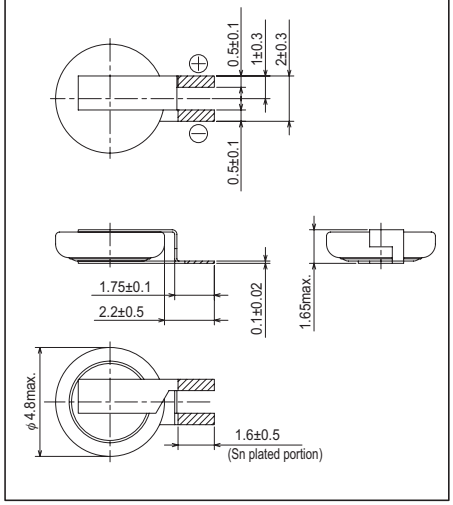


Floating Characteristics (60°C, applied voltage 3.1V)

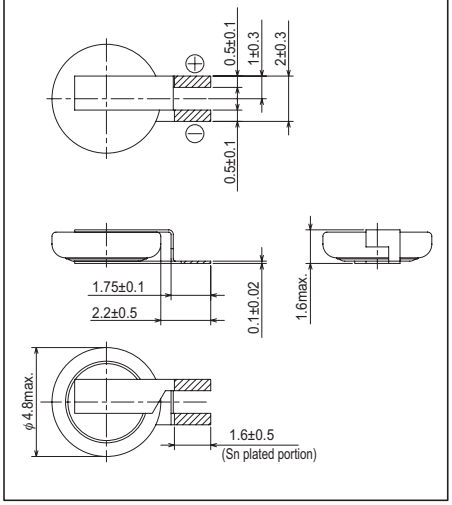


DIMENSIONS OF STANDARD TERMINALS OF MS LITHIUM RECHARGEABLE BATTERIES

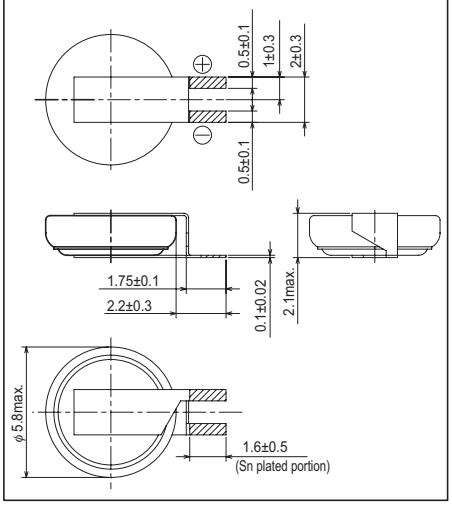
MS414GE FL26E



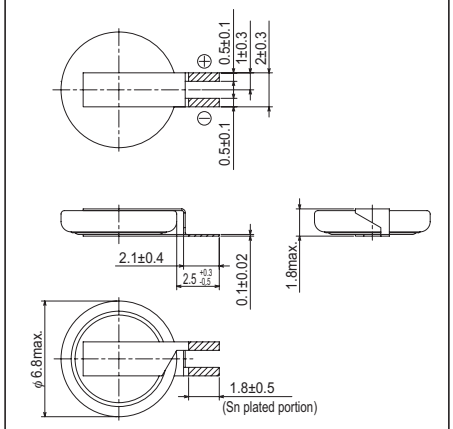
MS412FE FL26E



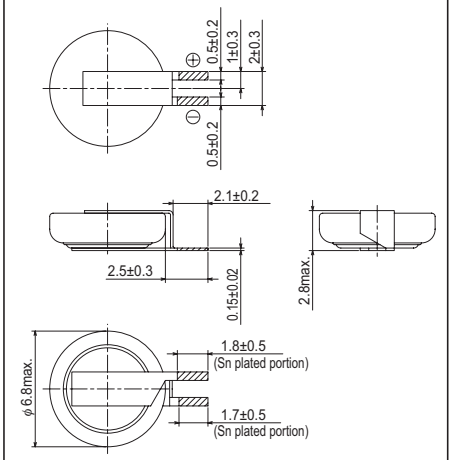
MS518SE FL35E



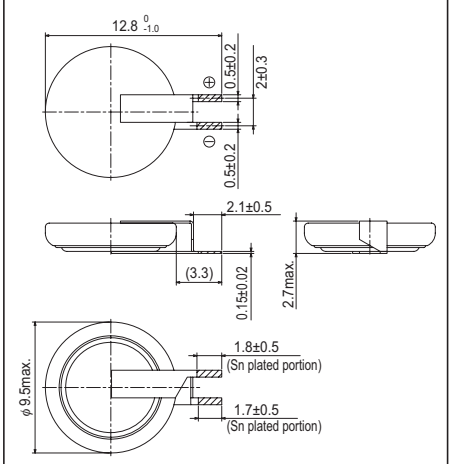
MS614SE FL28E



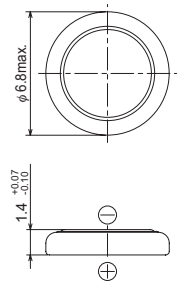
MS621FE / MS621T FL11E



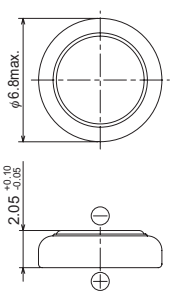
MS920SE / MS920T FL27E



MS614SE



MS621FE



* Rechargeable batteries are all available without tabs.

- Units: mm
- The hatched parts are tin plated (Sn: 100%).