# LM 33600

## Primary Li-$MnO_2$ cell

### 3 V lithium manganese dioxide D-size spiral cell

Saft's LM 33600 cell is ideally suited for applications requiring high energy and long operating life, with stable voltage under high discharge rates in –40°C / +85°C environment.

## Benefits

- High drain/ high pulse capability
- High voltage response, stable during most of the lifetime of the application even after long dormant periods
- High capacity at high current and low temperature
- Low self discharge compatible with long operating life (less than 1% after 1 year of storage at +20°C)
- Superior resistance to corrosion
- Low magnetic signature

## Key Features

- Spiral construction
- Hermetic construction with glass to metal seal
- Stainless steel container
- Integrated safety vent
- Non corrosive electrolyte
- Non pressurized at room temperature
- Restricted for transport (Class 9)
- RoHS and REACH compliant
- Made in USA

## Designed to meet all major quality, safety and environment standards

- Safety: UL 1642 and IEC 60086-4
- Transport: UN 3090 and UN 3091
- Quality: ISO 9001, Saft World Class Continuous program

## Typical Applications

- Utility metering
- Alarms and security
- GSM/GPRS communication
- Radio communications systems
- Medical devices

| Electrical characteristics | |
|---|---|
| *(Typical values relative to cells stored for one year or less at +30°C max)* | |
| Nominal capacity (at 250mA +20°C 2.0V cut-off)[1] | 13.4 Ah |
| Open circuit voltage (at +20°C) | 3.2 V |
| Nominal voltage (under 1mA at +20°C) | 3.0 V |
| Nominal energy (at 250mA +20°C 2.0V cut-off) | 37 Wh |
| Pulse capability[2] | up to 8.0 A |
| Recommended maximum continuous current | 4.0 A |
| **Operating conditions** | |
| Operating temperature range[3] | -40°C to +85°C |
| Storage temperatures | |
| Recommended | +30°C |
| Allowable[4] | -55°C to +90°C |
| **Physical characteristics** | |
| Diameter (max) | 33.7 mm |
| Height (max) | 61.3 mm |
| Typical weight | 113 g |
| Li metal content | approx. 4.4 g |
| **Termination** | |
| Available termination suffix | |
| CNR | radial tabs |
| 3 PF, 3 PF RP, 4 PF | radial pins |
| FL | flying leads |
| Other configurations upon request | |

[1] *Dependent upon current drain, temperature and cut-off.*
[2] *Dependent upon pulse characteristics, temperature, cell history and application. Higher rates are available under certain circumstances*
[3] *To maintain cell heating within safe limits. Battery packs may imply lower level of maximum current and may require specific thermal protection. Consult Saft.*
[4] *Long time storage at high temperature may affect performances. Consult Saft.*

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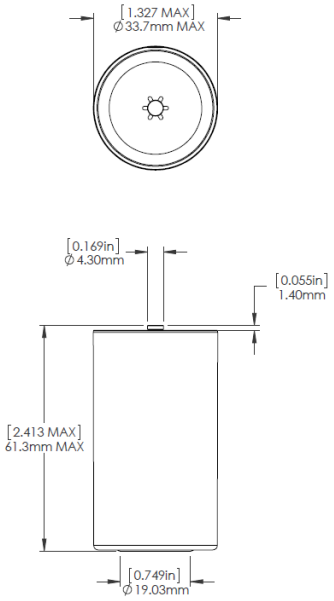
## LM 33600 dimensions



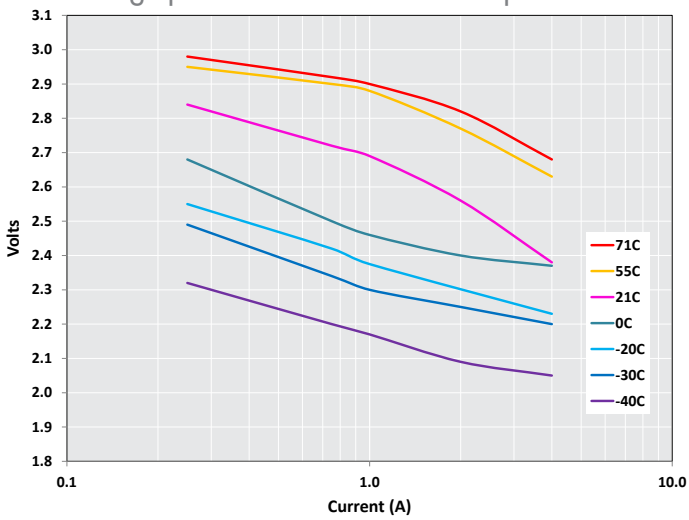

## Storage

- The storage area should be clean, cool (preferably not exceeding +30°C), dry and ventilated.

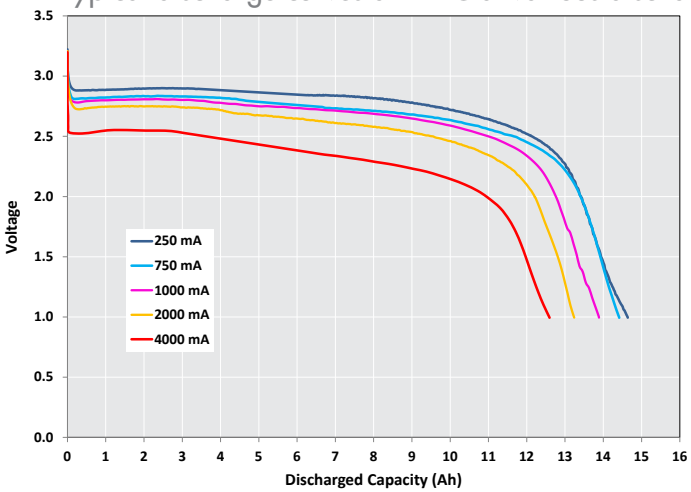
## Warning

- Fire, explosion and burn hazard.
- Do not recharge, short circuit, crush, disassemble, heat above 85°C, incinerate, or expose contents to water.
- Do not solder directly to the cell (use tabbed cell versions instead).
- Do not obstruct venting mechanism.
- Minimum clearance 2 mm (0.08 in) at negative end of cell.

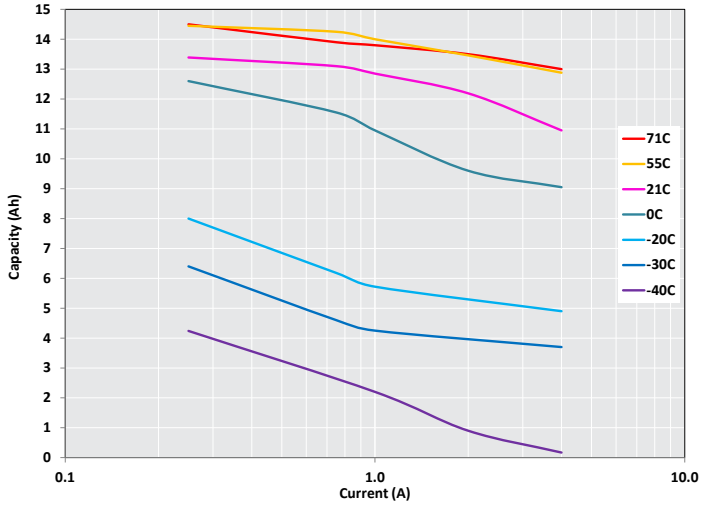
## Voltage plateau vs. current and temperature




## Typical discharge curves at 21°C at various discharge currents




## Capacity vs. discharge and temperature





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