M4ZXX-BR00SH

ZEROPOWER SNAPHAT (Battery)

- Provides Battery Backup Power for Non-Volatile ZEROPOWERs and Controllers in the SNAPHAT SOIC Package
- Removable Battery Avoids Heat Associated with Surface Mount Process
- Snaps Directly onto Surface-Mounted SNAPHAT SOIC
- Choice of Battery Capacities
  - M4Z28-BR00SH = 49 mAh
  - M4Z32-BR00SH = 130 mAh
- Keyed Insertion to Insure Proper Assembly
- Removable for Replacement and Proper Disposal
- Available in Tubes or Tape & Reel
- For Use with the SOIC Version of the Following Product Families
  - M48Z18
  - M48Z58
  - M48Z35
  - M40Z111
  - M40Z300

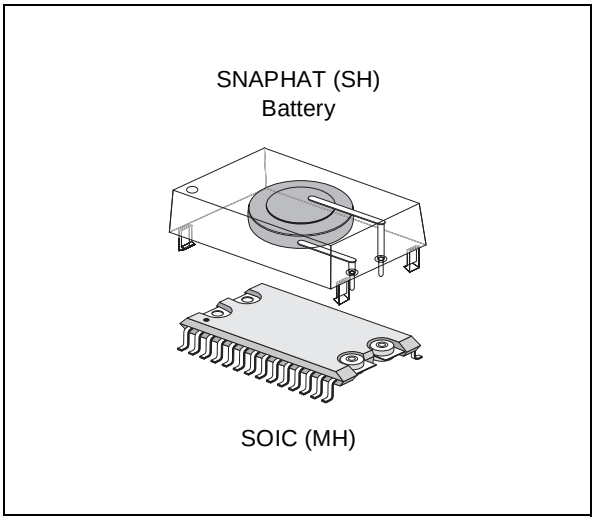
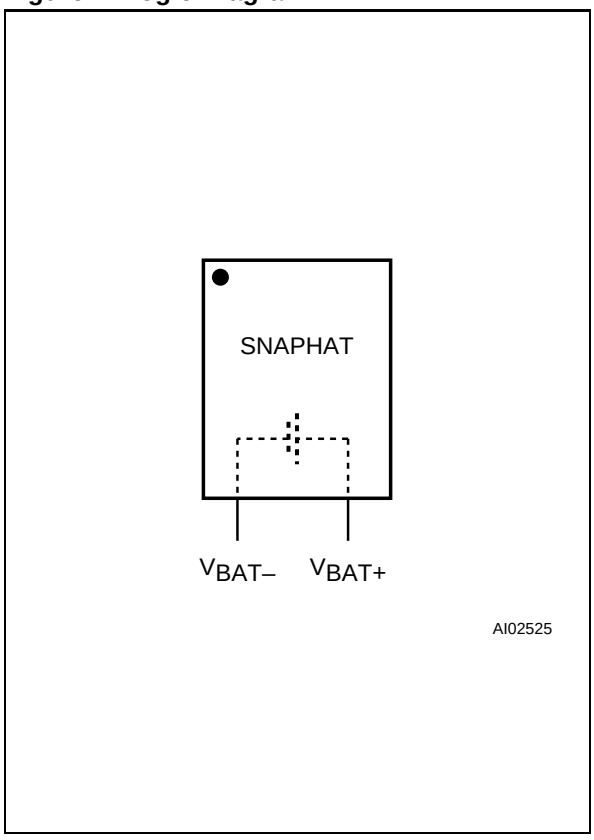


Figure 1. Logic Diagram



DESCRIPTION

The M4Zxx-BR00SH SNAPHAT top is a detachable lithium power source for ST's non-volatile ZEROPOWER surface mount SOIC (MH) package (28 pin).

The SNAPHAT top contains a lithium battery and is designed to be "snapped on" after the SOIC is surface mounted on the PC board. Thus the two piece solution prevents the battery from having to be exposed to the high temperatures of the surface mount process.

MECHANICAL INFORMATION

Electrical connection to the SOIC is made through two pins that connect to the press fitted sockets at one end of the SOIC. Critical contact points between the pins and sockets are gold-plated to resist oxidation. Internally, each socket contains six independent contact fingers to form redundant connections between the two components. These sockets were designed to provide high point contact force to provide the lowest possible contact resistance. The SNAPHAT top also incorporates four molded-in retaining clips which hold onto the ends of the SOIC insuring mechanical and electrical connection even under severe mechanical shock and vibration. The combined SOIC and SNAPHAT assembly can sustain shock levels in excess of 100 g without separating. This package also passes variable frequency testing in accordance with MIL-STD-883, method 2007.2, condition A.

Figure 2 illustrates the affect of repeated insertion and extraction of the SNAPHAT top to the SOIC. The force required to extract the SNAPHAT, and then to re-insert it, reduces each time. After three or four extractions, though, the reduction starts to become unnoticeable, and the force required remains at a fairly constant figure. Typically, though, the SNAPHAT will only need to be extracted and re-inserted once in its lifetime.

BATTERY CHARACTERISTICS

Figure 3 illustrates the lithium coin cell discharge rate for a given load. This demonstrates the characteristically flat voltage level supplied by the battery until very near the end of its life. These discharge levels have been greatly accelerated in comparison to the normal, actual usage.

Table 1. Description

Parameter	Value
Operating Temperature	M4Z28 1 = 0 to 70 °C M4Z32 6 = –40 to 85 °C
Storage Temperature	–40 to 85 °C
Nominal Battery Voltage	2.8 V
Nominal Battery Capacity	M4Z28 49 mAh M4Z32 130 mAh
Battery Chemistry	Li(CF)x

UL RECOGNITION

The M4Zxx-BR00SH has been recognized by Underwriters Laboratories under their Component Recognition Program and carries U.L. File Number E89556.

BATTERY LIFE

For information on Data Retention Life and Battery Storage Life, please refer to the Application Note AN1012.

Figure 2. SNAPHAT Insertion/Extraction Forces

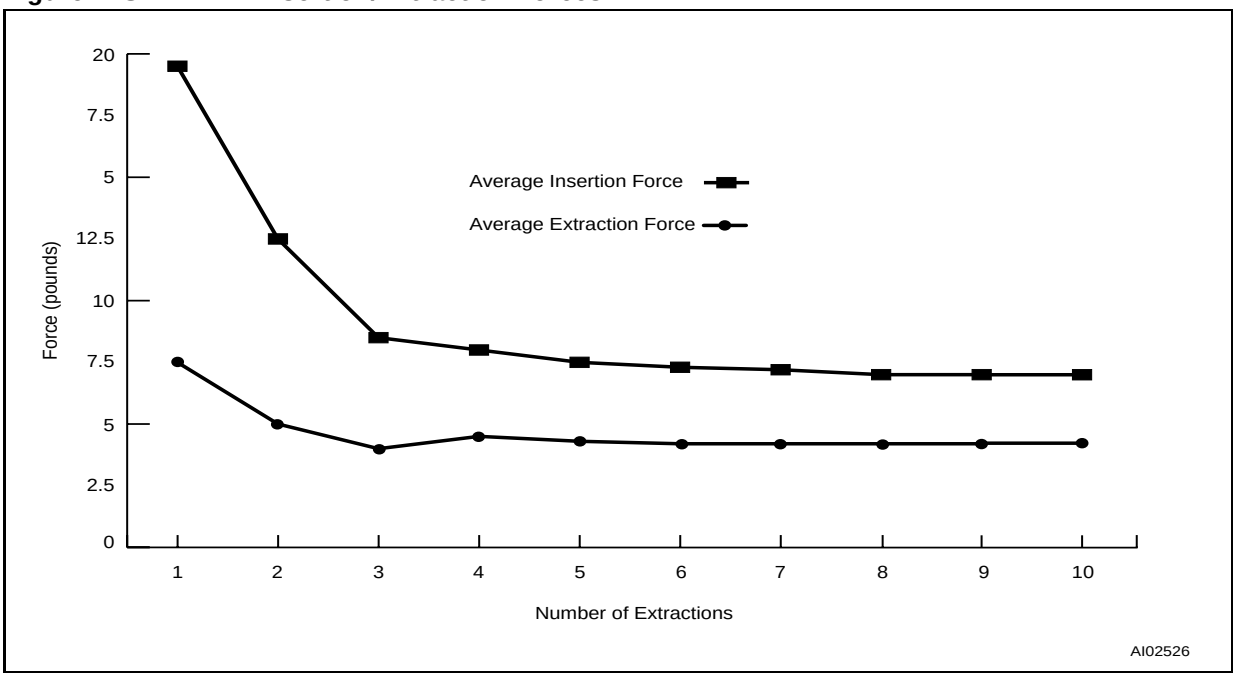
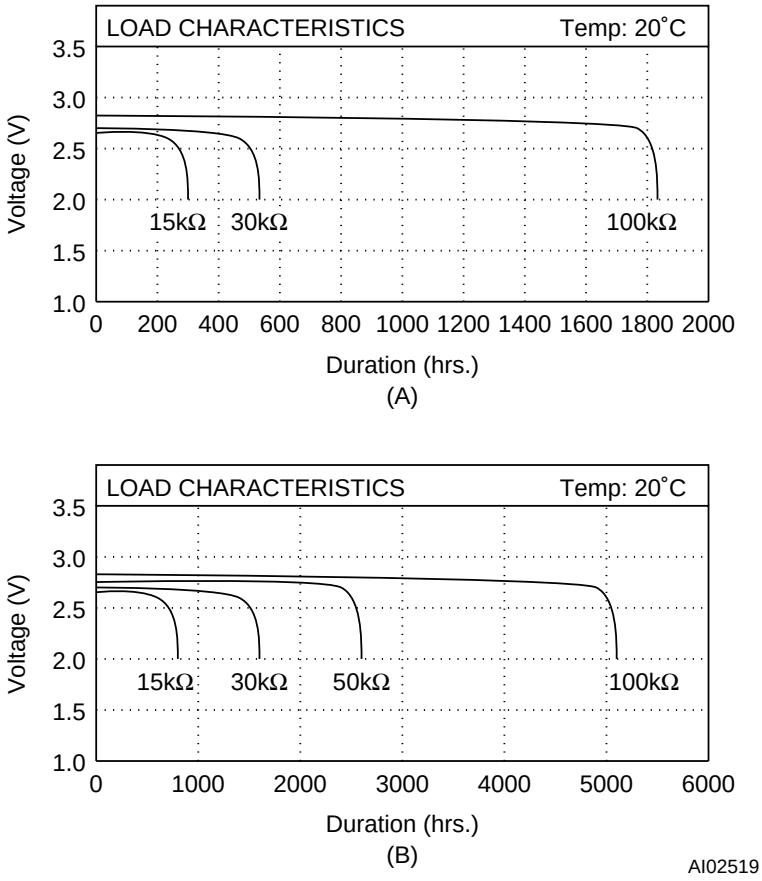


Figure 3. Battery Discharge Rates



GENERAL NOTES

To remove the SNAPHAT top for replacement, a DIP extractor should be used.

Caution: To avoid draining battery do NOT place SNAPHAT pins in a conductive foam.

Caution:Tto avoid damaging SNAPHAT sockets do NOT wave solder SOIC.

For battery disposal information, see on the web at **www.rayovac.com**.

Figure 4. DIP Extractor Tool

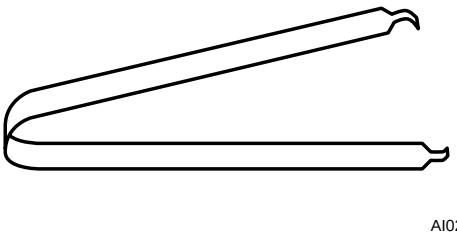


Table 2. Ordering Information Scheme

Example: M4Z 28-BR00 SH 1

Product Family

M4Z SNAPHAT Battery

Battery Voltage & Capacity

28-BR00 BR1225X, 3 V, 49 mAh

32-BR00 BR1632, 3 V, 130 mAh

Temperature Range

1 0 to 70 °C (M4Z28)

6 –40 to 85 °C (M4Z32)

Package

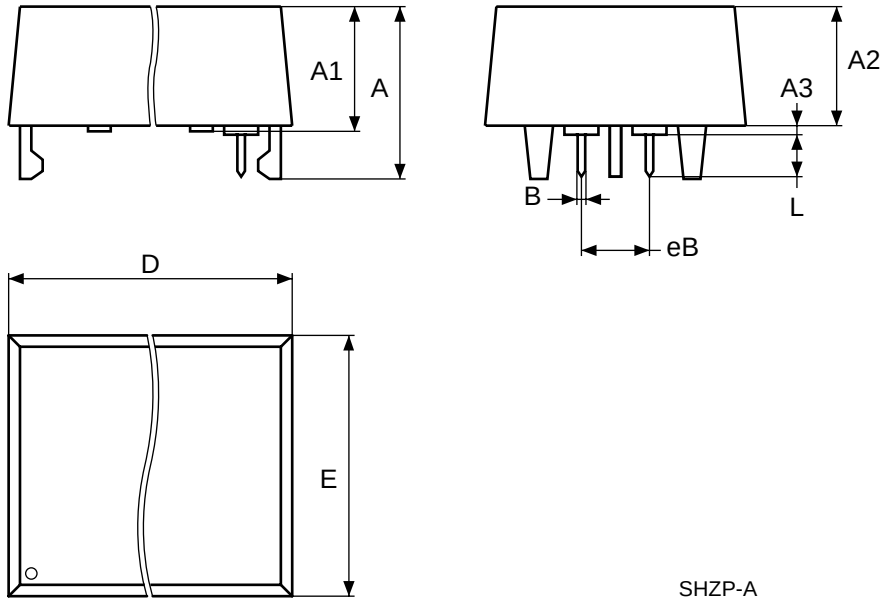
SH SNAPHAT

For further information on any aspect of this device, please contact the ST Sales Office nearest to you.

Table 3. M4Z28-BR00SH - ZEROPOWER SNAPHAT Housing for 49 mAh Battery, Package Mechanical Data

Symb	mm			inches		
	Typ	Min	Max	Typ	Min	Max
A			9.78			0.385
A1		6.73	7.24		0.265	0.285
A2		6.48	6.99		0.255	0.275
A3			0.38			0.015
B		0.46	0.56		0.018	0.022
D		21.21	21.84		0.835	0.860
E		14.22	14.99		0.560	0.590
eB		3.20	3.61		0.126	0.142
L		2.03	2.29		0.080	0.090

Figure 5. M4Z28-BR00SH - ZEROPOWER SNAPHAT Housing for 49 mAh Battery, Package Outline

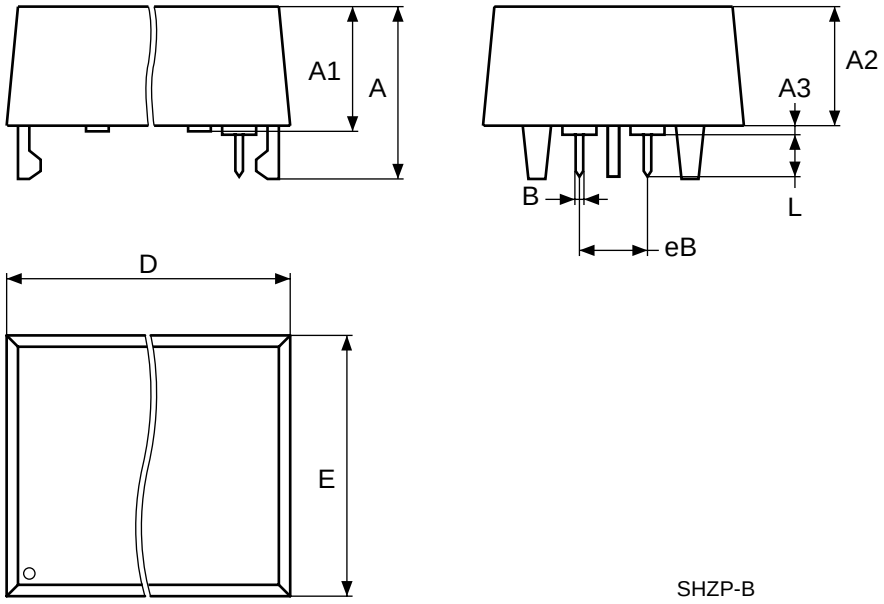


Drawing is not to scale.

Table 4. M4Z32-BR00SH - ZEROPOWER SNAPHAT Housing for 130 mAh Battery, Package Mechanical Data

Symb	mm			inches		
	Typ	Min	Max	Typ	Min	Max
A			10.54			0.415
A1		8.00	8.51		0.315	0.335
A2		7.24	8.00		0.285	0.315
A3			0.38			0.015
B		0.46	0.56		0.018	0.022
D		21.21	21.84		0.835	0.860
E		17.27	18.03		0.680	0.710
eB		3.20	3.61		0.126	0.142
L		2.03	2.29		0.080	0.090

Figure 6. M4Z32-BR12SH - ZEROPOWER SNAPHAT Housing for 130 mAh Battery, Package Outline



Drawing is not to scale.