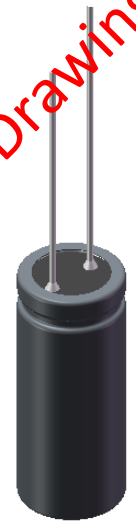
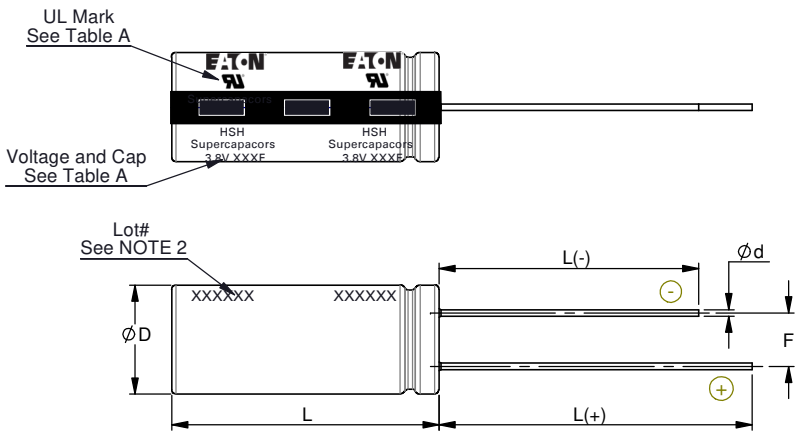


| Table A | | | | | | | | | | |
|---------|------------------|-----------------|----------|--------|----------|------------|------------|---------------------|---------|-----------------|
| Item | Eaton PN | Dimensions (mm) | | | | | | Voltage/Cap Marking | RU Mark | Weight(REF) (g) |
| | | ØD ±0.5 | L | P ±0.5 | Ød ±0.05 | L (+) ±3.0 | L (-) ±3.0 | | | |
| 1 | HSH0512-3R8305-R | 5.0 | 12.0±2.0 | 2.0 | 0.5 | 27.0 | 22.0 | 3.8V 3F | Yes | 0.5±0.1 g |
| 2 | HSH0612-3R8805-R | 6.3 | 12.0±2.0 | 2.6 | 0.5 | 27.0 | 22.0 | 3.8V 8F | Yes | 0.8±0.2 g |
| 3 | HSH0622-3R8226-R | 6.3 | 22.0±2.0 | 2.6 | 0.5 | 27.0 | 22.0 | 3.8V 22F | Yes | 1.3±0.3 g |
| 4 | HSH0814-3R8256-R | 8.0 | 14.0±1.5 | 3.5 | 0.6 | 27.0 | 22.0 | 3.8V 25F | Yes | 1.4±0.3 g |
| 5 | HSH0820-3R8406-R | 8.0 | 20.0±2.0 | 3.5 | 0.6 | 27.0 | 22.0 | 3.8V 40F | Yes | 2.0±0.3 g |
| 6 | HSH0825-3R8556-R | 8.0 | 25.0±2.0 | 3.5 | 0.6 | 27.0 | 22.0 | 3.8V 55F | Yes | 2.2±0.3 g |
| 7 | HSH1016-3R8556-R | 10.0 | 16.0±2.0 | 5.0 | 0.6 | 27.0 | 22.0 | 3.8V 55F | Yes | 2.5±0.5 g |
| 8 | HSH1020-3R8856-R | 10.0 | 20.0±2.0 | 5.0 | 0.6 | 27.0 | 22.0 | 3.8V 85F | Yes | 3.2±0.5 g |
| 9 | HSH1025-3R8117-R | 10.0 | 25.0±2.0 | 5.0 | 0.6 | 27.0 | 22.0 | 3.8V 110F | Yes | 3.8±0.5 g |
| 10 | HSH1030-3R8157-R | 10.0 | 30.0±2.0 | 5.0 | 0.6 | 27.0 | 22.0 | 3.8V 150F | Yes | 5.0±0.5 g |
| 11 | HSH1040-3R8207-R | 10.0 | 40.0±2.0 | 5.0 | 0.6 | 27.0 | 22.0 | 3.8V 200F | Yes | 6.4±0.6 g |
| 12 | HSH1225-3R8207-R | 12.5 | 25.0±2.0 | 5.0 | 0.6 | 27.0 | 22.0 | 3.8V 200F | Yes | 6.0±0.6 g |
| 13 | HSH1235-3R8307-R | 12.5 | 35.0±2.0 | 5.0 | 0.6 | 27.0 | 22.0 | 3.8V 300F | Yes | 9.0±1 g |
| 14 | HSH1240-3R8357-R | 12.5 | 40.0±2.0 | 5.0 | 0.6 | 27.0 | 22.0 | 3.8V 350F | Yes | 9.8±1 g |
| 15 | HSH1245-3R8407-R | 12.5 | 45.0±2.0 | 5.0 | 0.6 | 27.0 | 22.0 | 3.8V 400F | Yes | 11.0±1 g |
| 16 | HSH1630-3R8457-R | 16.0 | 30.0±2.0 | 7.5 | 0.8 | 27.0 | 22.0 | 3.8V 450F | Yes | 12.5±1 g |
| 17 | HSH1840-3R8857-R | 18.0 | 40.0±2.0 | 7.5 | 0.8 | 27.0 | 22.0 | 3.8V 850F | Yes | 21.0±2 g |
| 18 | HSH1850-3R8108-R | 18.0 | 50.0±2.0 | 7.5 | 0.8 | 27.0 | 22.0 | 3.8V 1000F | Yes | 27.0±2 g |
| 19 | HSH1860-3R8148-R | 18.0 | 60.0±2.0 | 7.5 | 0.8 | 27.0 | 22.0 | 3.8V 1400F | No | 30.0±2 g |

| REV | ZONE | DESCRIPTION | DATE | ECN | BY |
|-----|------|--|------------|-----|---------|
| 01 | | Preliminary. | 04/03/2024 | -- | D.HUANG |
| 02 | | Correct the typo in Table A. | 06/17/2024 | -- | D.HUANG |
| 03 | | Add the new part numbers, and package information, improve the marking layout. | 07/11/2024 | -- | D.HUANG |
| 04 | | Add the column for RU mark in Table A. | 07/17/2024 | -- | D.HUANG |
| 05 | | Add Min. rated operating voltage, rated charge/discharge current and Max. charge/discharge in Table B. | 10/25/2024 | -- | D.HUANG |



External Customer Drawing

- NOTES:
- "-" negative marking on the sleeve shall be align with cathode lead wire.
 - Lot # is XXXXXX
 --1st "X" is year (A=2020, B=2021, ...);
 --2nd "X" is month (1= Jan, 2= Feb, ... O=Oct, N=Nov, D=Dec);
 --3rd "X" is supercapacitor type(2= Lic);
 --Last "XXX" is batch number (001~999).
 - Capacitors are tested 100% for Capacitance, ESR test.
 - Lead material: Copper(>99.5% Cu) clad steel wire, 100% matte tin plating.
 - Environmental compliance:
 (a) RoHS, (b) REACH, (c) PFOS & PFOA, (d) Halogen Free, Sb2O3 and Red Phosphorus.

EATON, Electronics Division
DCC REFERENCE

| Special Characteristics | | | |
|-------------------------|-------------|-------------|--------|
| Type | Level | Symbol & No | Remark |
| Special (SC) | Critical | △ (0) | |
| | Significant | ◇ (0) | |

| | | | | | |
|---|----------------------|---|---|--------------------|--|
| MODEL SOURCE DATA HSH1025-3R8117-R | MODEL VERSION --- | GENERAL DRAWING PRACTICES IN ACCORDANCE WITH ASME - Y14.100-2013 DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME - Y14.5-2009 DO NOT SCALE DRAWING | APPROVALS PRODUCT MANAGER: -- ENGINEER: -- QUALITY: -- MATERIAL: -- | DATE --/--/---- | <p style="font-size: 8px; text-align: center;">Powering Business Worldwide</p> |
| THIS DRAWING IS AN UNCONTROLLED COPY IF PRINTED OR SENT ELECTRONICALLY. | | EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY NOTICE TO PERSONS RECEIVING THIS DOCUMENT: UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES TO BE ONE PLACE X.X = ±0.3 mm TWO PLACE X.X X = ±0.13 mm ALL ANGLES X.X = ±0.5° | THIRD ANGLE PROJECTION | | TITLE HSHXXXX-3R8XXX-R |
| EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY NOTICE TO PERSONS RECEIVING THIS DOCUMENT: UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES TO BE ONE PLACE X.X = ±0.3 mm TWO PLACE X.X X = ±0.13 mm ALL ANGLES X.X = ±0.5° | | | SCALE: 2:1 | | SIZE: A3 DWG NO: 9A5424 SHEET 1 OF 3 |

| REV | ZONE | DESCRIPTION | DATE | BY | CHK |
|-----|------|--------------------------------|----------|----|-----|
| -- | | See Revision Info in Sheet #1. | --/--/-- | | |

TABLE B Specification for Single Cap

| Item | Eaton PN | Rated Voltage | Min. Rated Operating Voltage | Min. Operating Voltage | Surge Voltage | Rated Charge/discharge Current (A) | Max. Charge/discharge Current (A) | Operating temperature range | Storage temperature Range | Capacitance (F) | | Maximum initial ESR (mΩ) | | Leakage current (μA) @72hrs, 25°C |
|------|------------------|---------------|------------------------------|------------------------|---------------|------------------------------------|-----------------------------------|-----------------------------|---------------------------|-----------------|-----------|--------------------------|----------|--------------------------------------|
| | | | | | | | | | | Nominal | Tolerance | 1KHz, 25°C | DC, 25°C | |
| 1 | HSH0512-3R8305-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 0.015 | 0.1 | -25~+70°C | -30~+70°C | 3 | -20%~+50% | 4000 | 9000 | ≤1.8 |
| 2 | HSH0612-3R8805-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 0.04 | 0.25 | -25~+70°C | -30~+70°C | 8 | -20%~+50% | 1200 | 2600 | ≤2.0 |
| 3 | HSH0622-3R8226-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 0.11 | 0.7 | -25~+70°C | -30~+70°C | 22 | ±20% | 450 | 1000 | ≤3.5 |
| 4 | HSH0814-3R8256-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 0.125 | 0.8 | -25~+70°C | -30~+70°C | 25 | ±20% | 400 | 900 | ≤2.5 |
| 5 | HSH0820-3R8406-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 0.2 | 1.2 | -25~+70°C | -30~+70°C | 40 | ±20% | 250 | 550 | ≤3.2 |
| 6 | HSH0825-3R8556-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 0.275 | 1.8 | -25~+70°C | -30~+70°C | 55 | ±20% | 200 | 450 | ≤5.0 |
| 7 | HSH1016-3R8556-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 0.275 | 1.8 | -25~+70°C | -30~+70°C | 55 | ±20% | 200 | 450 | ≤5.0 |
| 8 | HSH1020-3R8856-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 0.425 | 3.5 | -25~+70°C | -30~+70°C | 85 | ±20% | 120 | 250 | ≤8.0 |
| 9 | HSH1025-3R8117-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 0.55 | 4 | -25~+70°C | -30~+70°C | 110 | ±20% | 90 | 220 | ≤9.0 |
| 10 | HSH1030-3R8157-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 0.75 | 6 | -25~+70°C | -30~+70°C | 150 | ±20% | 70 | 140 | ≤15.0 |
| 11 | HSH1040-3R8207-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 1 | 7 | -25~+70°C | -30~+70°C | 200 | ±20% | 60 | 120 | ≤22.0 |
| 12 | HSH1225-3R8207-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 1 | 6 | -25~+70°C | -30~+70°C | 200 | ±20% | 65 | 135 | ≤18.0 |
| 13 | HSH1235-3R8307-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 1.5 | 10 | -25~+70°C | -30~+70°C | 300 | ±20% | 50 | 100 | ≤30.0 |
| 14 | HSH1240-3R8357-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 1.75 | 11 | -25~+70°C | -30~+70°C | 350 | ±20% | 45 | 90 | ≤35.0 |
| 15 | HSH1245-3R8407-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 2 | 12 | -25~+70°C | -30~+70°C | 400 | ±20% | 45 | 80 | ≤70.0 |
| 16 | HSH1630-3R8457-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 2.25 | 15 | -25~+70°C | -30~+70°C | 450 | ±20% | 40 | 60 | ≤70.0 |
| 17 | HSH1840-3R8857-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 4.25 | 28 | -25~+70°C | -30~+70°C | 850 | ±20% | 35 | 70 | ≤70.0 |
| 18 | HSH1850-3R8108-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 5 | 30 | -25~+70°C | -30~+70°C | 1000 | 0~+50% | 30 | 65 | ≤100.0 |
| 19 | HSH1860-3R8148-R | 3.8 V | 2.5 V | 2.2 V | 4.2 V | 7 | 31 | -25~+70°C | -30~+70°C | 1400 | ±20% | 28 | 50 | ≤120.0 |

TABLE C Performance

| Parameter | Capacitance Change (% of initial value) | ESR AC (% of initial value) |
|---|---|-----------------------------|
| Life (1000 hrs @ +70°C/3.8 V DC) | ≤30% | ≤200% |
| High Temperature Storage: (1000hrs, uncharged, @70°C) | ≤30% | ≤200% |
| Charge/Discharge Cycles (250,000 cycles @+20°C)* | ≤30% | ≤200% |
| Humidity, 40°C, 90~95%RH, 240h | ≤30% | ≤200% |
| High Temperature, 70°C | ≤10% | ≤100% |
| Low Temperature, -25°C | ≤50% | ≤1000% |

*Cycle: 3.8V to 2.5V operating, 5s rest @+20°C

- NOTES:
- 2.1 TABLE B is the specification for the single capacitor.
 - 2.2 TABLE C is the performance for the single capacitor.

External Customer Drawing

**EATON, Electronics Division
DCC REFERENCE**



Powering Business Worldwide

HSHXXXX-3R8XXX-R

| | | |
|------------|---------------|-----------|
| SIZE | DWG NO. | REV |
| A3 | 9A5424 | 05 |
| SCALE: 1:1 | SHEET 2 OF 3 | |

| | | | |
|--|---|---|---|
| MODEL SOURCE DATA THIS DRAWING IS AN UNCONTROLLED COPY IF PRINTED OR SENT ELECTRONICALLY. DO NOT SCALE DRAWING. EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION: THIS DOCUMENT IS THE PROPERTY OF EATON CORPORATION AND IS LOANED TO YOU UNDER THE CONDITION THAT YOU WILL NOT REPRODUCE, COPY, OR DISSEMINATE THIS DOCUMENT IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF EATON. IN THE CASE OF CONFLICTING CONTRACTUAL PROVISIONS, THIS NOTICE SHALL GOVERN THE STRIP OF THIS DOCUMENT. © 2012 Eaton. All Rights Reserved. | MODEL VERSION GENERAL DRAWING PRACTICES IN ACCORDANCE WITH ASME - Y14.100-2004 DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME - Y14.5M-1994 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES TO BE: ONE PLACE X.X = ±0.3 mm TWO PLACE X.X X = ±0.13 mm ALL ANGLES X.X = ±0.5° SPECIAL CHARACTERISTIC $\diamond (0)$ SIGNIFICANT CHARACTERISTIC $\triangle (0)$ THIRD ANGLE PROJECTION | APPROVALS PRODUCT MANAGER ENGINEER DESIGNER CHECKER DATE --/--/--- --/--/--- --/--/--- --/--/--- | TITLE HSHXXXX-3R8XXX-R SCALE: 1:1 SHEET 2 OF 3 |
|--|---|---|---|

| REV | ZONE | DESCRIPTION | DATE | BY | CHK |
|-----|------|--------------------------------|----------|----|-----|
| -- | | See Revision Info in Sheet #1. | --/--/-- | | |

| Table D Package Information | | | | | | | | | | | |
|-----------------------------|------------------|--------|-------------------------|-------|-------|-------------|-------------------------|-------|-------|-------------|--------------|
| Item | Part Number | Weight | Unit Pack (inner box) | | | | Shipping Case (Carton) | | | | Gross Weight |
| | | | External Dimension (mm) | | | Package Qty | External Dimension (mm) | | | Package Qty | |
| | | | L | W | H | | L | W | H | | |
| 1 | HSH0512-3R8305-R | 0.5 | 175.0 | 170.0 | 65.0 | 100 | 370.0 | 360.0 | 215.0 | 1200 | 2.5 |
| 2 | HSH0612-3R8805-R | 0.8 | 175.0 | 170.0 | 65.0 | 100 | 370.0 | 360.0 | 215.0 | 1200 | 2.8 |
| 3 | HSH0622-3R8226-R | 1.3 | 175.0 | 170.0 | 65.0 | 100 | 370.0 | 360.0 | 215.0 | 1200 | 3.4 |
| 4 | HSH0814-3R8256-R | 1.4 | 175.0 | 170.0 | 65.0 | 100 | 370.0 | 360.0 | 215.0 | 1200 | 3.5 |
| 5 | HSH0820-3R8406-R | 2.0 | 175.0 | 170.0 | 65.0 | 100 | 370.0 | 360.0 | 215.0 | 1200 | 4.2 |
| 6 | HSH0825-3R8556-R | 2.2 | 175.0 | 170.0 | 65.0 | 100 | 370.0 | 360.0 | 215.0 | 1200 | 4.5 |
| 7 | HSH1016-3R8556-R | 2.5 | 175.0 | 170.0 | 65.0 | 100 | 370.0 | 360.0 | 215.0 | 1200 | 4.8 |
| 8 | HSH1020-3R8856-R | 3.2 | 175.0 | 170.0 | 65.0 | 100 | 370.0 | 360.0 | 215.0 | 1200 | 5.7 |
| 9 | HSH1025-3R8117-R | 3.8 | 175.0 | 170.0 | 65.0 | 100 | 370.0 | 360.0 | 215.0 | 1200 | 6.4 |
| 10 | HSH1030-3R8157-R | 5.0 | 175.0 | 170.0 | 65.0 | 100 | 370.0 | 360.0 | 215.0 | 1200 | 7.8 |
| 11 | HSH1040-3R8207-R | 6.4 | 160.0 | 152.0 | 75.0 | 60 | 335.0 | 335.0 | 245.0 | 720 | 6.0 |
| 12 | HSH1225-3R8207-R | 6.0 | 212.0 | 115.0 | 70.0 | 50 | 440.0 | 250.0 | 230.0 | 600 | 5.2 |
| 13 | HSH1235-3R8307-R | 9.0 | 240.0 | 127.0 | 85.0 | 50 | 505.0 | 280.0 | 270.0 | 600 | 7.5 |
| 14 | HSH1240-3R8357-R | 9.8 | 240.0 | 127.0 | 85.0 | 50 | 505.0 | 280.0 | 270.0 | 600 | 8.0 |
| 15 | HSH1245-3R8407-R | 11.0 | 240.0 | 127.0 | 85.0 | 50 | 505.0 | 280.0 | 270.0 | 600 | 8.7 |
| 16 | HSH1630-3R8457-R | 12.0 | 240.0 | 127.0 | 85.0 | 40 | 505.0 | 280.0 | 270.0 | 480 | 8.1 |
| 17 | HSH1840-3R8857-R | 21.0 | 240.0 | 127.0 | 85.0 | 40 | 505.0 | 280.0 | 270.0 | 480 | 12.2 |
| 18 | HSH1850-3R8108-R | 27.0 | 240.0 | 127.0 | 100.0 | 40 | 505.0 | 280.0 | 220.0 | 320 | 10.2 |
| 19 | HSH1860-3R8148-R | 30.0 | 240.0 | 127.0 | 100.0 | 40 | 505.0 | 280.0 | 220.0 | 320 | 11.1 |

External Customer Drawing

EATON, Electronics Division
DCC REFERENCE



Powering Business Worldwide

HSHXXXX-3R8XXX-R

| | | |
|------------|---------------|-----------|
| SIZE | DWG NO. | REV |
| A3 | 9A5424 | 05 |
| SCALE: 1:1 | SHEET 3 OF 3 | |

| MODEL SOURCE DATA | MODEL VERSION | GENERAL DRAWING PRACTICES IN ACCORDANCE WITH ASME - Y14.100-2004 DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME - Y14.5M-1994 | APPROVALS | DATE |
|---|---------------|--|-----------------|------------|
| THIS DRAWING IS AN UNCONTROLLED COPY IF PRINTED OR SENT ELECTRONICALLY. DO NOT SCALE DRAWING. | | | PRODUCT MANAGER | --/--/---- |
| EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY | | | ENGINEER | --/--/---- |
| NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION: | | | DRAWN | --/--/---- |
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES TO BE | | | CHECKED | --/--/---- |
| ONE PLACE X.X = ±0.3 mm | | | | |
| TWO PLACE X.X X = ±0.13 mm | | | | |
| ALL ANGLES X.X = ±0.5° | | | | |
| SPECIAL CHARACTERISTIC $\diamond (0)$ | | | | |
| SIGNIFICANT CHARACTERISTIC $\triangle (0)$ | | | | |
| THIRD ANGLE PROJECTION | | | | |

F
E
D
C
B
A

8 7 6 5 3 2 1