

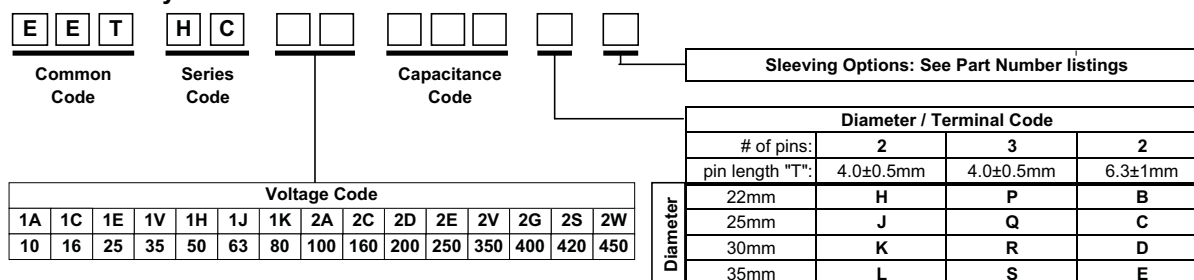
**TS-HC Series 105°C, 2000 hours**

- Long life with high capacitance (30% smaller than HB series)
- 2 and 3 pin versions available
- RoHS compliant PVC and RoHS compliant PET sleeve options

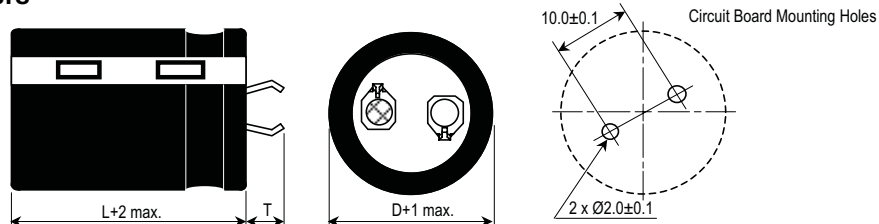
RoHS  
Compliant

|                                        |                                                                        |      |      |         |      |      |                                                           |                                             |           |      |      |      |       |
|----------------------------------------|------------------------------------------------------------------------|------|------|---------|------|------|-----------------------------------------------------------|---------------------------------------------|-----------|------|------|------|-------|
| Rated Working Voltage:                 | 10 ~ 250 VDC                                                           |      |      |         |      |      | 350 ~ 450 VDC                                             |                                             |           |      |      |      |       |
| Operating Temperature:                 | -40 ~ +105°C                                                           |      |      |         |      |      | -25 ~ +105°C                                              |                                             |           |      |      |      |       |
| Nominal Capacitance:                   | 270 ~ 100000μF                                                         |      |      |         |      |      | 100 ~ 1000μF                                              |                                             |           |      |      |      |       |
| Capacitance Tolerance:                 | ± 20%                                                                  |      |      |         |      |      |                                                           |                                             |           |      |      |      |       |
| Dissipation Factor:<br>(120 Hz, +20°C) | Working Voltage [V]:                                                   | 10   | 16   | 25      | 35   | 50   | 63                                                        | 80                                          | 100 ~ 450 |      |      |      |       |
|                                        | Max. D.F. (%):                                                         | 55   | 45   | 35      | 30   | 25   | 20                                                        | 17                                          | 15        |      |      |      |       |
|                                        | For capacitance values > 33000μF, add the value of:                    |      |      |         |      |      | $\frac{(\text{rated cap. } [\mu\text{F}] - 33000)}{1000}$ |                                             |           |      |      |      |       |
| Leakage Current:                       | $3\sqrt{CV}$ (μA) max. after 5 minutes; C = Capacitance in μF, V = WV  |      |      |         |      |      |                                                           |                                             |           |      |      |      |       |
| Ripple Current Multipliers:            | Frequency(Hz):                                                         | 50   | 60   | 100~120 | 500  | 1k   | 10k                                                       | Ripple Current Ambient Temperature Factors* |           |      |      |      |       |
|                                        | 16~100WV:                                                              | 0.93 | 0.95 | 1.0     | 1.05 | 1.08 | 1.15                                                      | Temperature (°C):                           | 105°C     | 85°C | 70°C | 60°C | ≤45°C |
|                                        | 160~450WV:                                                             | 0.75 | 0.8  | 1.0     | 1.2  | 1.25 | 1.4                                                       | Multiplier:                                 | 1.0       | 1.7  | 2.0  | 2.2  | 2.35  |
| Endurance:                             | 2000 hours at +105°C with maximum specified ripple current (see page4) |      |      |         |      |      |                                                           |                                             |           |      |      |      |       |

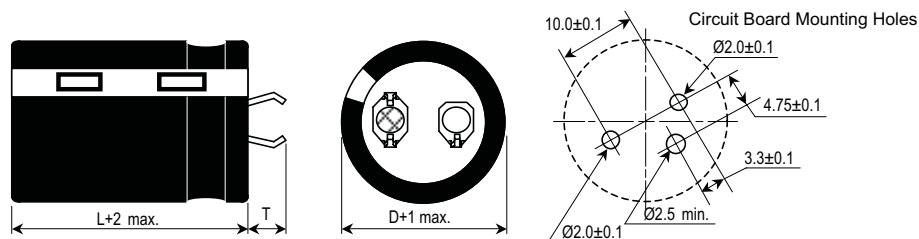
\*Use of temperature ripple current multipliers may limit life to the hours specified for the maximum operating temperature.

**Part Number System****Dimensions in millimeters**

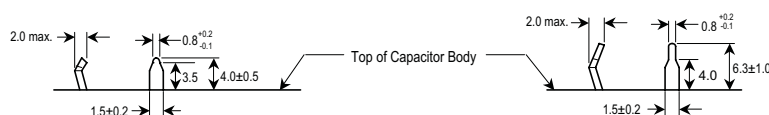
2 Pin Mounting Style



3 Pin Mounting Style



Pin Dimensions



4mm Length: Standard on 2 and 3 Pin Mounting Styles

6.3mm Length: Available on 2 Pin Mounting Style Only

## TS-HC Standard Ratings

Part numbers shown with 2 pins and 4.0mm length terminals

| Cap.<br>(μF)                 | Size (mm)<br>D x L | Max 105°C R.C. (A <sub>rms</sub> ) |        | 20°C ESR (Ω, max.) |       | Panasonic Part Number (By Sleeve Style) |                       |
|------------------------------|--------------------|------------------------------------|--------|--------------------|-------|-----------------------------------------|-----------------------|
|                              |                    | 120Hz                              | 10kHz~ | 120Hz              | 20kHz | PVC with Top Plate                      | PET without Top Plate |
| 10 VDC Working, 13 VDC Surge |                    |                                    |        |                    |       |                                         |                       |
| 12000                        | 22 x 25            | 2.20                               | 2.53   | 0.076              | 0.065 | EETHC1A123HA                            | EETHC1A123HJ          |
| 18000                        | 22 x 30            | 2.40                               | 2.76   | 0.051              | 0.043 | EETHC1A183HA                            | EETHC1A183HJ          |
|                              | 25 x 25            | 2.40                               | 2.76   | 0.051              | 0.043 | EETHC1A183JA                            | EETHC1A183JJ          |
| 22000                        | 22 x 35            | 2.60                               | 2.99   | 0.041              | 0.035 | EETHC1A223HA                            | EETHC1A223HJ          |
|                              | 25 x 30            | 2.60                               | 2.99   | 0.041              | 0.035 | EETHC1A223JA                            | EETHC1A223JJ          |
| 27000                        | 22 x 40            | 3.10                               | 3.57   | 0.034              | 0.029 | EETHC1A273HA                            | EETHC1A273HJ          |
|                              | 25 x 35            | 3.10                               | 3.57   | 0.034              | 0.029 | EETHC1A273JA                            | EETHC1A273JJ          |
|                              | 30 x 25            | 3.10                               | 3.57   | 0.034              | 0.029 | EETHC1A273KA                            | EETHC1A273KJ          |
| 33000                        | 22 x 45            | 3.40                               | 3.91   | 0.028              | 0.023 | EETHC1A333HA                            | EETHC1A333HJ          |
|                              | 25 x 40            | 3.40                               | 3.91   | 0.028              | 0.023 | EETHC1A333JA                            | EETHC1A333JJ          |
| 39000                        | 25 x 45            | 3.70                               | 4.26   | 0.026              | 0.022 | EETHC1A393JA                            | EETHC1A393JJ          |
|                              | 30 x 30            | 3.70                               | 4.26   | 0.026              | 0.023 | EETHC1A393KA                            | EETHC1A393KJ          |
|                              | 35 x 25            | 3.70                               | 4.26   | 0.026              | 0.022 | EETHC1A393LA                            | EETHC1A393LJ          |
| 47000                        | 25 x 50            | 4.20                               | 4.83   | 0.024              | 0.021 | EETHC1A473JA                            | EETHC1A473JJ          |
|                              | 30 x 35            | 4.20                               | 4.83   | 0.024              | 0.022 | EETHC1A473KA                            | EETHC1A473KJ          |
|                              | 35 x 30            | 4.20                               | 4.83   | 0.024              | 0.021 | EETHC1A473LA                            | EETHC1A473LJ          |
| 56000                        | 30 x 40            | 5.00                               | 5.75   | 0.023              | 0.021 | EETHC1A563KA                            | EETHC1A563KJ          |
|                              | 35 x 35            | 5.00                               | 5.75   | 0.023              | 0.020 | EETHC1A563LA                            | EETHC1A563LJ          |
| 68000                        | 30 x 45            | 5.40                               | 6.21   | 0.022              | 0.020 | EETHC1A683KA                            | EETHC1A683KJ          |
|                              | 35 x 40            | 5.40                               | 6.21   | 0.022              | 0.019 | EETHC1A683LA                            | EETHC1A683LJ          |
| 82000                        | 35 x 45            | 6.10                               | 7.02   | 0.021              | 0.019 | EETHC1A823LA                            | EETHC1A823LJ          |
| 100000                       | 35 x 50            | 6.90                               | 7.94   | 0.020              | 0.019 | EETHC1A104LA                            | EETHC1A104LJ          |
| 16 VDC Working, 20 VDC Surge |                    |                                    |        |                    |       |                                         |                       |
| 10000                        | 22 x 25            | 2.60                               | 2.99   | 0.075              | 0.063 | EETHC1C103HA                            | EETHC1C103HJ          |
| 12000                        | 22 x 30            | 2.90                               | 3.34   | 0.062              | 0.053 | EETHC1C123HA                            | EETHC1C123HJ          |
|                              | 25 x 25            | 2.90                               | 3.34   | 0.062              | 0.053 | EETHC1C123JA                            | EETHC1C123JJ          |
| 15000                        | 22 x 35            | 3.20                               | 3.68   | 0.050              | 0.042 | EETHC1C153HA                            | EETHC1C153HJ          |
| 18000                        | 22 x 40            | 3.50                               | 4.03   | 0.041              | 0.035 | EETHC1C183HA                            | EETHC1C183HJ          |
|                              | 25 x 30            | 3.50                               | 4.03   | 0.041              | 0.035 | EETHC1C183JA                            | EETHC1C183JJ          |
| 22000                        | 22 x 45            | 3.80                               | 4.37   | 0.034              | 0.029 | EETHC1C223HA                            | EETHC1C223HJ          |
|                              | 25 x 35            | 3.80                               | 4.37   | 0.034              | 0.029 | EETHC1C223JA                            | EETHC1C223JJ          |
|                              | 30 x 25            | 3.80                               | 4.37   | 0.034              | 0.029 | EETHC1C223KA                            | EETHC1C223KJ          |
| 27000                        | 22 x 50            | 4.20                               | 4.83   | 0.028              | 0.023 | EETHC1C273HA                            | EETHC1C273HJ          |
|                              | 25 x 40            | 4.20                               | 4.83   | 0.028              | 0.023 | EETHC1C273JA                            | EETHC1C273JJ          |
|                              | 30 x 30            | 4.20                               | 4.83   | 0.028              | 0.023 | EETHC1C273KA                            | EETHC1C273KJ          |
|                              | 35 x 25            | 4.20                               | 4.83   | 0.028              | 0.023 | EETHC1C273LA                            | EETHC1C273LJ          |
| 33000                        | 25 x 45            | 4.70                               | 5.41   | 0.023              | 0.019 | EETHC1C333JA                            | EETHC1C333JJ          |
|                              | 30 x 35            | 4.70                               | 5.41   | 0.023              | 0.019 | EETHC1C333KA                            | EETHC1C333KJ          |
|                              | 35 x 30            | 4.70                               | 5.41   | 0.023              | 0.020 | EETHC1C333LA                            | EETHC1C333LJ          |
| 39000                        | 30 x 40            | 5.10                               | 5.87   | 0.022              | 0.018 | EETHC1C393KA                            | EETHC1C393KJ          |
|                              | 35 x 35            | 5.10                               | 5.87   | 0.022              | 0.020 | EETHC1C393LA                            | EETHC1C393LJ          |
| 47000                        | 30 x 45            | 5.50                               | 6.33   | 0.016              | 0.014 | EETHC1C473KA                            | EETHC1C473KJ          |
|                              | 35 x 40            | 5.50                               | 6.33   | 0.021              | 0.019 | EETHC1C473LA                            | EETHC1C473LJ          |
| 56000                        | 30 x 50            | 6.00                               | 6.90   | 0.020              | 0.018 | EETHC1C563KA                            | EETHC1C563KJ          |
|                              | 35 x 45            | 6.00                               | 6.90   | 0.020              | 0.018 | EETHC1C563LA                            | EETHC1C563LJ          |
| 25 VDC Working, 32 VDC Surge |                    |                                    |        |                    |       |                                         |                       |
| 6800                         | 22 x 25            | 2.40                               | 2.76   | 0.085              | 0.064 | EETHC1E682HA                            | EETHC1E682HJ          |
| 8200                         | 22 x 30            | 2.70                               | 3.11   | 0.071              | 0.053 | EETHC1E822HA                            | EETHC1E822HJ          |
|                              | 25 x 25            | 2.70                               | 3.11   | 0.071              | 0.053 | EETHC1E822JA                            | EETHC1E822JJ          |
| 10000                        | 22 x 35            | 3.00                               | 3.45   | 0.058              | 0.044 | EETHC1E103HA                            | EETHC1E103HJ          |
| 12000                        | 22 x 40            | 3.20                               | 3.68   | 0.048              | 0.036 | EETHC1E123HA                            | EETHC1E123HJ          |
|                              | 25 x 30            | 3.20                               | 3.68   | 0.048              | 0.036 | EETHC1E123JA                            | EETHC1E123JJ          |
| 15000                        | 22 x 45            | 3.60                               | 4.14   | 0.039              | 0.029 | EETHC1E153HA                            | EETHC1E153HJ          |
|                              | 25 x 35            | 3.60                               | 4.14   | 0.039              | 0.029 | EETHC1E153JA                            | EETHC1E153JJ          |
|                              | 30 x 25            | 3.60                               | 4.14   | 0.039              | 0.029 | EETHC1E153KA                            | EETHC1E153KJ          |
| 18000                        | 22 x 50            | 3.90                               | 4.49   | 0.032              | 0.024 | EETHC1E183HA                            | EETHC1E183HJ          |
|                              | 25 x 40            | 3.90                               | 4.49   | 0.032              | 0.024 | EETHC1E183JA                            | EETHC1E183JJ          |
|                              | 30 x 30            | 3.90                               | 4.49   | 0.032              | 0.024 | EETHC1E183KA                            | EETHC1E183KJ          |
|                              | 35 x 25            | 3.90                               | 4.49   | 0.032              | 0.024 | EETHC1E183LA                            | EETHC1E183LJ          |
| 22000                        | 25 x 45            | 4.30                               | 4.95   | 0.026              | 0.020 | EETHC1E223JA                            | EETHC1E223JJ          |
|                              | 30 x 35            | 4.30                               | 4.95   | 0.026              | 0.020 | EETHC1E223KA                            | EETHC1E223KJ          |
|                              | 35 x 30            | 4.30                               | 4.95   | 0.026              | 0.020 | EETHC1E223LA                            | EETHC1E223LJ          |
| 27000                        | 30 x 40            | 4.80                               | 5.52   | 0.021              | 0.016 | EETHC1E273KA                            | EETHC1E273KJ          |

## TS-HC Standard Ratings (continued)

Part numbers shown with 2 pins and 4.0mm length terminals

| Cap.<br>(μF)                             | Size (mm)<br>D x L | Max 105°C R.C. (A <sub>rms</sub> ) |        | 20°C ESR (Ω, max.) |       | Panasonic Part Number (By Sleeve Style) |                       |
|------------------------------------------|--------------------|------------------------------------|--------|--------------------|-------|-----------------------------------------|-----------------------|
|                                          |                    | 120Hz                              | 10kHz~ | 120Hz              | 20kHz | PVC with Top Plate                      | PET without Top Plate |
| 25 VDC Working, 32 VDC Surge (continued) |                    |                                    |        |                    |       |                                         |                       |
| 27000                                    | 35 x 35            | 4.80                               | 5.52   | 0.021              | 0.016 | EETHC1E273LA                            | EETHC1E273LJ          |
| 33000                                    | 30 x 45            | 5.50                               | 6.33   | 0.018              | 0.013 | EETHC1E333KA                            | EETHC1E333KJ          |
|                                          | 35 x 40            | 5.50                               | 6.33   | 0.018              | 0.014 | EETHC1E333LA                            | EETHC1E333LJ          |
| 39000                                    | 30 x 50            | 5.80                               | 6.67   | 0.017              | 0.013 | EETHC1E393KA                            | EETHC1E393KJ          |
|                                          | 35 x 45            | 5.80                               | 6.67   | 0.017              | 0.014 | EETHC1E393LA                            | EETHC1E393LJ          |
| 47000                                    | 35 x 50            | 6.30                               | 7.25   | 0.017              | 0.014 | EETHC1E473LA                            | EETHC1E473LJ          |
| 35 VDC Working, 44 VDC Surge             |                    |                                    |        |                    |       |                                         |                       |
| 4700                                     | 22 x 25            | 2.20                               | 2.53   | 0.106              | 0.079 | EETHC1V472HA                            | EETHC1V472HJ          |
| 5600                                     | 22 x 30            | 2.40                               | 2.76   | 0.089              | 0.067 | EETHC1V562HA                            | EETHC1V562HJ          |
|                                          | 25 x 25            | 2.40                               | 2.76   | 0.089              | 0.067 | EETHC1V562JA                            | EETHC1V562JJ          |
| 6800                                     | 22 x 35            | 2.60                               | 2.99   | 0.073              | 0.055 | EETHC1V682HA                            | EETHC1V682HJ          |
| 8200                                     | 22 x 40            | 2.90                               | 3.34   | 0.061              | 0.045 | EETHC1V822HA                            | EETHC1V822HJ          |
|                                          | 25 x 30            | 2.90                               | 3.34   | 0.061              | 0.045 | EETHC1V822JA                            | EETHC1V822JJ          |
| 10000                                    | 22 x 45            | 3.20                               | 3.68   | 0.050              | 0.037 | EETHC1V103HA                            | EETHC1V103HJ          |
|                                          | 25 x 35            | 3.20                               | 3.68   | 0.050              | 0.037 | EETHC1V103JA                            | EETHC1V103JJ          |
|                                          | 30 x 25            | 3.20                               | 3.68   | 0.050              | 0.037 | EETHC1V103KA                            | EETHC1V103KJ          |
| 12000                                    | 25 x 40            | 3.50                               | 4.03   | 0.041              | 0.031 | EETHC1V123JA                            | EETHC1V123JJ          |
|                                          | 30 x 30            | 3.50                               | 4.03   | 0.041              | 0.031 | EETHC1V123KA                            | EETHC1V123KJ          |
|                                          | 35 x 25            | 3.50                               | 4.03   | 0.041              | 0.031 | EETHC1V123LA                            | EETHC1V123LJ          |
| 15000                                    | 25 x 45            | 3.90                               | 4.49   | 0.033              | 0.025 | EETHC1V153JA                            | EETHC1V153JJ          |
|                                          | 30 x 35            | 3.90                               | 4.49   | 0.033              | 0.025 | EETHC1V153KA                            | EETHC1V153KJ          |
|                                          | 35 x 30            | 3.90                               | 4.49   | 0.033              | 0.025 | EETHC1V153LA                            | EETHC1V153LJ          |
| 18000                                    | 30 x 40            | 4.30                               | 4.95   | 0.028              | 0.021 | EETHC1V183KA                            | EETHC1V183KJ          |
|                                          | 35 x 35            | 4.30                               | 4.95   | 0.028              | 0.021 | EETHC1V183LA                            | EETHC1V183LJ          |
| 22000                                    | 30 x 45            | 5.00                               | 5.75   | 0.023              | 0.017 | EETHC1V223KA                            | EETHC1V223KJ          |
|                                          | 35 x 40            | 5.00                               | 5.75   | 0.023              | 0.017 | EETHC1V223LA                            | EETHC1V223LJ          |
| 27000                                    | 30 x 50            | 5.30                               | 6.10   | 0.018              | 0.014 | EETHC1V273KA                            | EETHC1V273KJ          |
|                                          | 35 x 45            | 5.30                               | 6.10   | 0.018              | 0.014 | EETHC1V273LA                            | EETHC1V273LJ          |
| 33000                                    | 35 x 50            | 5.90                               | 6.79   | 0.015              | 0.012 | EETHC1V333LA                            | EETHC1V333LJ          |
| 50 VDC Working, 63 VDC Surge             |                    |                                    |        |                    |       |                                         |                       |
| 2700                                     | 22 x 25            | 1.80                               | 2.07   | 0.154              | 0.115 | EETHC1H272HA                            | EETHC1H272HJ          |
| 3300                                     | 22 x 30            | 2.00                               | 2.30   | 0.126              | 0.094 | EETHC1H332HA                            | EETHC1H332HJ          |
| 3900                                     | 22 x 35            | 2.20                               | 2.53   | 0.106              | 0.080 | EETHC1H392HA                            | EETHC1H392HJ          |
|                                          | 25 x 25            | 2.20                               | 2.53   | 0.106              | 0.080 | EETHC1H392JA                            | EETHC1H392JJ          |
| 4700                                     | 22 x 40            | 2.50                               | 2.88   | 0.088              | 0.066 | EETHC1H472HA                            | EETHC1H472HJ          |
|                                          | 25 x 30            | 2.50                               | 2.88   | 0.088              | 0.066 | EETHC1H472JA                            | EETHC1H472JJ          |
| 5600                                     | 22 x 45            | 2.80                               | 3.22   | 0.074              | 0.056 | EETHC1H562HA                            | EETHC1H562HJ          |
|                                          | 25 x 35            | 2.80                               | 3.22   | 0.074              | 0.056 | EETHC1H562JA                            | EETHC1H562JJ          |
|                                          | 30 x 25            | 2.80                               | 3.22   | 0.074              | 0.056 | EETHC1H562KA                            | EETHC1H562KJ          |
| 6800                                     | 22 x 50            | 3.30                               | 3.80   | 0.061              | 0.046 | EETHC1H682HA                            | EETHC1H682HJ          |
|                                          | 25 x 40            | 3.30                               | 3.80   | 0.061              | 0.046 | EETHC1H682JA                            | EETHC1H682JA          |
|                                          | 30 x 30            | 3.30                               | 3.80   | 0.061              | 0.046 | EETHC1H682KA                            | EETHC1H682KJ          |
|                                          | 35 x 25            | 3.30                               | 3.80   | 0.061              | 0.046 | EETHC1H682LA                            | EETHC1H682LJ          |
| 8200                                     | 25 x 45            | 3.60                               | 4.14   | 0.051              | 0.038 | EETHC1H822JA                            | EETHC1H822JJ          |
|                                          | 30 x 35            | 3.60                               | 4.14   | 0.051              | 0.038 | EETHC1H822KA                            | EETHC1H822KJ          |
| 10000                                    | 25 x 50            | 4.00                               | 4.60   | 0.041              | 0.031 | EETHC1H103JA                            | EETHC1H103JJ          |
|                                          | 30 x 40            | 4.00                               | 4.60   | 0.041              | 0.031 | EETHC1H103KA                            | EETHC1H103KJ          |
|                                          | 35 x 30            | 4.00                               | 4.60   | 0.041              | 0.031 | EETHC1H103LA                            | EETHC1H103LJ          |
| 12000                                    | 30 x 45            | 4.50                               | 5.18   | 0.035              | 0.026 | EETHC1H123KA                            | EETHC1H123KJ          |
|                                          | 35 x 35            | 4.50                               | 5.18   | 0.035              | 0.028 | EETHC1H123LA                            | EETHC1H123LJ          |
| 15000                                    | 30 x 50            | 4.80                               | 5.52   | 0.028              | 0.021 | EETHC1H153KA                            | EETHC1H153KJ          |
|                                          | 35 x 40            | 4.80                               | 5.52   | 0.028              | 0.022 | EETHC1H153LA                            | EETHC1H153LJ          |
| 18000                                    | 35 x 45            | 5.60                               | 6.44   | 0.023              | 0.018 | EETHC1H183LA                            | EETHC1H183LJ          |
| 63 VDC Working, 79 VDC Surge             |                    |                                    |        |                    |       |                                         |                       |
| 2200                                     | 22 x 25            | 2.00                               | 2.30   | 0.151              | 0.113 | EETHC1J222HA                            | EETHC1J222HJ          |
| 2700                                     | 22 x 30            | 2.20                               | 2.53   | 0.123              | 0.092 | EETHC1J272HA                            | EETHC1J272HJ          |
|                                          | 25 x 25            | 2.20                               | 2.53   | 0.123              | 0.092 | EETHC1J272JA                            | EETHC1J272JJ          |
| 3300                                     | 22 x 35            | 2.50                               | 2.88   | 0.100              | 0.075 | EETHC1J332HA                            | EETHC1J332HJ          |
| 3900                                     | 22 x 40            | 2.70                               | 3.11   | 0.085              | 0.064 | EETHC1J392HA                            | EETHC1J392HJ          |
|                                          | 25 x 30            | 2.70                               | 3.11   | 0.085              | 0.064 | EETHC1J392JA                            | EETHC1J392JJ          |
|                                          | 30 x 25            | 2.70                               | 3.11   | 0.085              | 0.064 | EETHC1J392KA                            | EETHC1J392KJ          |
| 4700                                     | 22 x 45            | 3.00                               | 3.45   | 0.071              | 0.053 | EETHC1J472HA                            | EETHC1J472HJ          |
|                                          | 25 x 35            | 3.00                               | 3.45   | 0.071              | 0.053 | EETHC1J472JA                            | EETHC1J472JJ          |
| 5600                                     | 22 x 50            | 3.30                               | 3.80   | 0.059              | 0.044 | EETHC1J562HA                            | EETHC1J562HJ          |

## TS-HC Standard Ratings (continued)

Part numbers shown with 2 pins and 4.0mm length terminals

| Cap.<br>(μF)                             | Size (mm)<br>D x L | Max 105°C R.C. (A <sub>rms</sub> ) |        | 20°C ESR (Ω, max.) |       | Panasonic Part Number (By Sleeve Style) |                       |
|------------------------------------------|--------------------|------------------------------------|--------|--------------------|-------|-----------------------------------------|-----------------------|
|                                          |                    | 120Hz                              | 10kHz~ | 120Hz              | 20kHz | PVC with Top Plate                      | PET without Top Plate |
| 63 VDC Working, 79 VDC Surge (continued) |                    |                                    |        |                    |       |                                         |                       |
| 5600                                     | 25 x 40            | 3.30                               | 3.80   | 0.059              | 0.044 | EETHC1J562JA                            | EETHC1J562JJ          |
|                                          | 30 x 30            | 3.30                               | 3.80   | 0.059              | 0.044 | EETHC1J562KA                            | EETHC1J562KJ          |
|                                          | 35 x 25            | 3.30                               | 3.80   | 0.059              | 0.044 | EETHC1J562LA                            | EETHC1J562LJ          |
| 6800                                     | 25 x 45            | 3.60                               | 4.14   | 0.049              | 0.037 | EETHC1J682JA                            | EETHC1J682JJ          |
|                                          | 30 x 35            | 3.60                               | 4.14   | 0.049              | 0.037 | EETHC1J682KA                            | EETHC1J682KJ          |
|                                          | 35 x 30            | 3.60                               | 4.14   | 0.049              | 0.037 | EETHC1J682LA                            | EETHC1J682LJ          |
| 8200                                     | 30 x 40            | 3.90                               | 4.49   | 0.040              | 0.030 | EETHC1J822KA                            | EETHC1J822KJ          |
|                                          | 35 x 35            | 3.90                               | 4.49   | 0.040              | 0.030 | EETHC1J822LA                            | EETHC1J822LJ          |
| 10000                                    | 30 x 45            | 4.40                               | 5.06   | 0.033              | 0.025 | EETHC1J103KA                            | EETHC1J103KJ          |
|                                          | 35 x 40            | 4.40                               | 5.06   | 0.033              | 0.025 | EETHC1J103LA                            | EETHC1J103LJ          |
| 12000                                    | 30 x 50            | 4.80                               | 5.52   | 0.028              | 0.021 | EETHC1J123KA                            | EETHC1J123KJ          |
|                                          | 35 x 45            | 4.80                               | 5.52   | 0.028              | 0.022 | EETHC1J123LA                            | EETHC1J123LJ          |
| 15000                                    | 35 x 50            | 5.40                               | 6.21   | 0.022              | 0.018 | EETHC1J153LA                            | EETHC1J153LJ          |
| 80 VDC Working, 100 VDC Surge            |                    |                                    |        |                    |       |                                         |                       |
| 1200                                     | 22 x 25            | 1.50                               | 1.73   | 0.235              | 0.176 | EETHC1K122HA                            | EETHC1K122HJ          |
| 1500                                     | 22 x 30            | 1.70                               | 1.96   | 0.188              | 0.141 | EETHC1K152HA                            | EETHC1K152HJ          |
|                                          | 25 x 25            | 1.70                               | 1.96   | 0.188              | 0.141 | EETHC1K152JA                            | EETHC1K152JJ          |
| 1800                                     | 22 x 35            | 1.80                               | 2.07   | 0.157              | 0.117 | EETHC1K182HA                            | EETHC1K182HJ          |
| 2200                                     | 22 x 40            | 2.10                               | 2.42   | 0.128              | 0.096 | EETHC1K222HA                            | EETHC1K222HJ          |
|                                          | 25 x 30            | 2.10                               | 2.42   | 0.128              | 0.096 | EETHC1K222JA                            | EETHC1K222JJ          |
| 2700                                     | 22 x 45            | 2.40                               | 2.76   | 0.104              | 0.078 | EETHC1K272HA                            | EETHC1K272HJ          |
|                                          | 25 x 35            | 2.40                               | 2.76   | 0.104              | 0.078 | EETHC1K272JA                            | EETHC1K272JJ          |
|                                          | 30 x 25            | 2.40                               | 2.76   | 0.104              | 0.078 | EETHC1K272KA                            | EETHC1K272KJ          |
| 3300                                     | 22 x 50            | 2.60                               | 2.99   | 0.085              | 0.064 | EETHC1K332HA                            | EETHC1K332HJ          |
|                                          | 25 x 40            | 2.60                               | 2.99   | 0.085              | 0.064 | EETHC1K332JA                            | EETHC1K332JJ          |
|                                          | 30 x 30            | 2.60                               | 2.99   | 0.085              | 0.064 | EETHC1K332KA                            | EETHC1K332KJ          |
|                                          | 35 x 25            | 2.60                               | 2.99   | 0.085              | 0.064 | EETHC1K332LA                            | EETHC1K332LJ          |
| 3900                                     | 25 x 45            | 3.00                               | 3.45   | 0.072              | 0.054 | EETHC1K392JA                            | EETHC1K392JJ          |
|                                          | 30 x 35            | 3.00                               | 3.45   | 0.072              | 0.054 | EETHC1K392KA                            | EETHC1K392KJ          |
| 4700                                     | 25 x 50            | 3.30                               | 3.80   | 0.060              | 0.045 | EETHC1K472JA                            | EETHC1K472JJ          |
|                                          | 30 x 40            | 3.30                               | 3.80   | 0.060              | 0.045 | EETHC1K472KA                            | EETHC1K472KJ          |
|                                          | 35 x 30            | 3.30                               | 3.80   | 0.060              | 0.045 | EETHC1K472LA                            | EETHC1K472LJ          |
| 5600                                     | 30 x 45            | 3.70                               | 4.26   | 0.050              | 0.038 | EETHC1K562KA                            | EETHC1K562KJ          |
|                                          | 35 x 35            | 3.70                               | 4.26   | 0.050              | 0.038 | EETHC1K562LA                            | EETHC1K562LJ          |
| 6800                                     | 30 x 50            | 3.90                               | 4.49   | 0.041              | 0.031 | EETHC1K682KA                            | EETHC1K682KJ          |
|                                          | 35 x 40            | 3.90                               | 4.49   | 0.041              | 0.032 | EETHC1K682LA                            | EETHC1K682LJ          |
| 8200                                     | 35 x 45            | 4.50                               | 5.18   | 0.034              | 0.027 | EETHC1K822LA                            | EETHC1K822LJ          |
| 100 VDC Working, 125 VDC Surge           |                    |                                    |        |                    |       |                                         |                       |
| 820                                      | 22 x 25            | 1.40                               | 1.61   | 0.303              | 0.197 | EETHC2A821HA                            | EETHC2A821HJ          |
| 1200                                     | 22 x 30            | 1.80                               | 2.07   | 0.207              | 0.135 | EETHC2A122HA                            | EETHC2A122HJ          |
|                                          | 25 x 25            | 1.80                               | 2.07   | 0.207              | 0.135 | EETHC2A122JA                            | EETHC2A122JJ          |
| 1500                                     | 22 x 35            | 2.10                               | 2.42   | 0.166              | 0.108 | EETHC2A152HA                            | EETHC2A152HJ          |
|                                          | 25 x 30            | 2.10                               | 2.42   | 0.166              | 0.108 | EETHC2A152JA                            | EETHC2A152JJ          |
| 1800                                     | 22 x 40            | 2.30                               | 2.65   | 0.138              | 0.090 | EETHC2A182HA                            | EETHC2A182HJ          |
|                                          | 25 x 35            | 2.30                               | 2.65   | 0.138              | 0.090 | EETHC2A182JA                            | EETHC2A182JJ          |
|                                          | 30 x 25            | 2.30                               | 2.65   | 0.138              | 0.090 | EETHC2A182KA                            | EETHC2A182KJ          |
| 2200                                     | 22 x 45            | 2.60                               | 2.99   | 0.113              | 0.073 | EETHC2A222HA                            | EETHC2A222HJ          |
|                                          | 25 x 40            | 2.60                               | 2.99   | 0.113              | 0.073 | EETHC2A222JA                            | EETHC2A222JJ          |
|                                          | 30 x 30            | 2.60                               | 2.99   | 0.113              | 0.073 | EETHC2A222KA                            | EETHC2A222KJ          |
|                                          | 35 x 25            | 2.60                               | 2.99   | 0.113              | 0.073 | EETHC2A222LA                            | EETHC2A222LJ          |
| 2700                                     | 25 x 45            | 2.90                               | 3.34   | 0.092              | 0.060 | EETHC2A272JA                            | EETHC2A272JJ          |
|                                          | 30 x 35            | 2.90                               | 3.34   | 0.092              | 0.060 | EETHC2A272KA                            | EETHC2A272KJ          |
| 3300                                     | 25 x 50            | 3.20                               | 3.68   | 0.075              | 0.049 | EETHC2A332JA                            | EETHC2A332JJ          |
|                                          | 30 x 40            | 3.20                               | 3.68   | 0.075              | 0.049 | EETHC2A332KA                            | EETHC2A332KJ          |
|                                          | 35 x 30            | 3.20                               | 3.68   | 0.075              | 0.049 | EETHC2A332LA                            | EETHC2A332LJ          |
| 3900                                     | 30 x 45            | 3.60                               | 4.14   | 0.064              | 0.043 | EETHC2A392KA                            | EETHC2A392KJ          |
|                                          | 35 x 35            | 3.60                               | 4.14   | 0.064              | 0.043 | EETHC2A392LA                            | EETHC2A392LJ          |
| 4700                                     | 30 x 50            | 3.80                               | 4.37   | 0.053              | 0.038 | EETHC2A472KA                            | EETHC2A472KJ          |
|                                          | 35 x 40            | 3.80                               | 4.37   | 0.053              | 0.037 | EETHC2A472LA                            | EETHC2A472LJ          |
| 5600                                     | 35 x 45            | 4.20                               | 4.83   | 0.044              | 0.031 | EETHC2A562LA                            | EETHC2A562LJ          |
| 6800                                     | 35 x 50            | 4.70                               | 5.41   | 0.037              | 0.027 | EETHC2A682LA                            | EETHC2A682LJ          |
| 160 VDC Working, 200 VDC Surge           |                    |                                    |        |                    |       |                                         |                       |
| 470                                      | 22 x 25            | 1.40                               | 1.96   | 0.423              | 0.190 | EETHC2C471HA                            | EETHC2C471HJ          |

## TS-HC Standard Ratings (continued)

Part numbers shown with 2 pins and 4.0mm length terminals

| Cap.<br>( $\mu$ F)                         | Size (mm)<br>D x L | Max 105°C R.C. ( $A_{rms}$ ) |        | 20°C ESR ( $\Omega$ , max.) |       | Panasonic Part Number (By Sleeve Style) |                              |
|--------------------------------------------|--------------------|------------------------------|--------|-----------------------------|-------|-----------------------------------------|------------------------------|
|                                            |                    | 120Hz                        | 10kHz~ | 120Hz                       | 20kHz | PVC sleeve with Top Plate               | PET sleeve without Top Plate |
| 160 VDC Working, 200 VDC Surge (continued) |                    |                              |        |                             |       |                                         |                              |
| 560                                        | 22 x 30            | 1.50                         | 2.10   | 0.355                       | 0.160 | EETHC2C561HA                            | EETHC2C561HJ                 |
| 680                                        | 22 x 30            | 1.70                         | 2.38   | 0.293                       | 0.132 | EETHC2C681HA                            | EETHC2C681HJ                 |
|                                            | 25 x 25            | 1.70                         | 2.38   | 0.293                       | 0.132 | EETHC2C681JA                            | EETHC2C681JJ                 |
| 820                                        | 22 x 35            | 2.00                         | 2.80   | 0.243                       | 0.109 | EETHC2C821HA                            | EETHC2C821HJ                 |
|                                            | 25 x 30            | 2.00                         | 2.80   | 0.243                       | 0.109 | EETHC2C821JA                            | EETHC2C821JJ                 |
| 1000                                       | 22 x 40            | 2.20                         | 3.08   | 0.199                       | 0.090 | EETHC2C102HA                            | EETHC2C102HJ                 |
|                                            | 25 x 35            | 2.20                         | 3.08   | 0.199                       | 0.090 | EETHC2C102JA                            | EETHC2C102JJ                 |
|                                            | 30 x 25            | 2.20                         | 3.08   | 0.216                       | 0.108 | EETHC2C102KA                            | EETHC2C102KJ                 |
| 1200                                       | 22 x 45            | 2.30                         | 3.22   | 0.166                       | 0.075 | EETHC2C122HA                            | EETHC2C122HJ                 |
|                                            | 25 x 40            | 2.30                         | 3.22   | 0.166                       | 0.075 | EETHC2C122JA                            | EETHC2C122JJ                 |
|                                            | 30 x 30            | 2.30                         | 3.22   | 0.166                       | 0.075 | EETHC2C122KA                            | EETHC2C122KJ                 |
|                                            | 35 x 25            | 2.30                         | 3.22   | 0.180                       | 0.090 | EETHC2C122LA                            | EETHC2C122LJ                 |
| 1500                                       | 25 x 45            | 2.50                         | 3.50   | 0.133                       | 0.060 | EETHC2C152JA                            | EETHC2C152JJ                 |
|                                            | 30 x 35            | 2.50                         | 3.50   | 0.133                       | 0.060 | EETHC2C152KA                            | EETHC2C152KJ                 |
|                                            | 35 x 30            | 2.50                         | 3.50   | 0.155                       | 0.077 | EETHC2C152LA                            | EETHC2C152LJ                 |
| 1800                                       | 25 x 50            | 2.70                         | 3.78   | 0.111                       | 0.050 | EETHC2C182JA                            | EETHC2C182JJ                 |
|                                            | 30 x 40            | 2.70                         | 3.78   | 0.111                       | 0.050 | EETHC2C182KA                            | EETHC2C182KJ                 |
|                                            | 35 x 30            | 2.70                         | 3.78   | 0.120                       | 0.060 | EETHC2C182LA                            | EETHC2C182LJ                 |
| 2200                                       | 30 x 45            | 2.90                         | 4.06   | 0.090                       | 0.041 | EETHC2C222KA                            | EETHC2C222KJ                 |
|                                            | 35 x 35            | 2.90                         | 4.06   | 0.098                       | 0.049 | EETHC2C222LA                            | EETHC2C222LJ                 |
| 2700                                       | 30 x 50            | 3.10                         | 4.34   | 0.080                       | 0.040 | EETHC2C272KA                            | EETHC2C272KJ                 |
|                                            | 35 x 40            | 3.10                         | 4.34   | 0.086                       | 0.043 | EETHC2C272LA                            | EETHC2C272LJ                 |
| 3300                                       | 35 x 50            | 3.30                         | 4.62   | 0.070                       | 0.042 | EETHC2C332LA                            | EETHC2C332LJ                 |
| 200 VDC Working, 250 VDC Surge             |                    |                              |        |                             |       |                                         |                              |
| 390                                        | 22 x 25            | 1.31                         | 1.83   | 0.510                       | 0.230 | EETHC2D391HA                            | EETHC2D391HJ                 |
| 470                                        | 22 x 30            | 1.45                         | 2.03   | 0.423                       | 0.190 | EETHC2D471HA                            | EETHC2D471HJ                 |
|                                            | 25 x 25            | 1.45                         | 2.03   | 0.423                       | 0.190 | EETHC2D471JF                            | EETHC2D471JC                 |
| 560                                        | 22 x 30            | 1.67                         | 2.34   | 0.355                       | 0.160 | EETHC2D561HA                            | EETHC2D561HJ                 |
| 680                                        | 22 x 40            | 1.75                         | 2.45   | 0.293                       | 0.132 | EETHC2D681HA                            | EETHC2D681HJ                 |
|                                            | 25 x 30            | 1.75                         | 2.45   | 0.293                       | 0.132 | EETHC2D681JA                            | EETHC2D681JJ                 |
| 820                                        | 22 x 45            | 2.04                         | 2.86   | 0.243                       | 0.109 | EETHC2D821HA                            | EETHC2D821HJ                 |
|                                            | 25 x 35            | 2.04                         | 2.86   | 0.243                       | 0.109 | EETHC2D821JA                            | EETHC2D821JJ                 |
|                                            | 30 x 25            | 2.04                         | 2.86   | 0.243                       | 0.109 | EETHC2D821KA                            | EETHC2D821KJ                 |
| 1000                                       | 22 x 50            | 2.30                         | 3.22   | 0.199                       | 0.090 | EETHC2D102HA                            | EETHC2D102HJ                 |
|                                            | 25 x 40            | 2.30                         | 2.90   | 0.199                       | 0.090 | EETHC2D102JF                            | EETHC2D102JC                 |
|                                            | 25 x 45            | 2.30                         | 3.22   | 0.199                       | 0.090 | EETHC2D102JA                            | EETHC2D102JJ                 |
|                                            | 30 x 30            | 2.30                         | 3.22   | 0.199                       | 0.090 | EETHC2D102KA                            | EETHC2D102KJ                 |
|                                            | 35 x 25            | 2.30                         | 3.22   | 0.216                       | 0.097 | EETHC2D102LA                            | EETHC2D102LA                 |
| 1200                                       | 25 x 45            | 2.65                         | 3.33   | 0.166                       | 0.075 | EETHC2D122JF                            | EETHC2D122JC                 |
|                                            | 25 x 50            | 2.65                         | 3.71   | 0.166                       | 0.075 | EETHC2D122JA                            | EETHC2D122JJ                 |
|                                            | 30 x 35            | 2.65                         | 3.71   | 0.166                       | 0.075 | EETHC2D122KA                            | EETHC2D122KJ                 |
|                                            | 35 x 30            | 2.65                         | 3.71   | 0.180                       | 0.090 | EETHC2D122LA                            | EETHC2D122LA                 |
| 1500                                       | 30 x 40            | 2.80                         | 3.92   | 0.133                       | 0.060 | EETHC2D152KA                            | EETHC2D152KJ                 |
|                                            | 35 x 30            | 2.80                         | 3.92   | 0.144                       | 0.072 | EETHC2D152LA                            | EETHC2D152LA                 |
| 1800                                       | 30 x 45            | 3.08                         | 4.31   | 0.111                       | 0.050 | EETHC2D182KA                            | EETHC2D182KJ                 |
|                                            | 35 x 40            | 3.08                         | 4.31   | 0.129                       | 0.064 | EETHC2D182LA                            | EETHC2D182LA                 |
| 2200                                       | 30 x 50            | 3.48                         | 4.87   | 0.090                       | 0.041 | EETHC2D222KA                            | EETHC2D222KJ                 |
|                                            | 35 x 45            | 3.48                         | 4.87   | 0.098                       | 0.044 | EETHC2D222LA                            | EETHC2D222LA                 |
| 250 VDC Working, 300 VDC Surge             |                    |                              |        |                             |       |                                         |                              |
| 270                                        | 22 x 25            | 1.10                         | 1.54   | 0.614                       | 0.276 | EETHC2E271HA                            | EETHC2E271HJ                 |
| 330                                        | 22 x 30            | 1.20                         | 1.68   | 0.502                       | 0.226 | EETHC2E331HA                            | EETHC2E331HJ                 |
|                                            | 25 x 25            | 1.20                         | 1.68   | 0.502                       | 0.226 | EETHC2E331JA                            | EETHC2E331JJ                 |
| 390                                        | 22 x 30            | 1.20                         | 1.68   | 0.425                       | 0.191 | EETHC2E391HF                            | EETHC2E391HC                 |
|                                            | 22 x 35            | 1.30                         | 1.82   | 0.425                       | 0.191 | EETHC2E391HA                            | EETHC2E391HJ                 |
|                                            | 25 x 25            | 1.30                         | 1.82   | 0.425                       | 0.191 | EETHC2E391JA                            | EETHC2E391JJ                 |
| 470                                        | 22 x 35            | 1.20                         | 1.68   | 0.353                       | 0.159 | EETHC2E471HF                            | EETHC2E471HC                 |
|                                            | 22 x 40            | 1.40                         | 1.96   | 0.353                       | 0.159 | EETHC2E471HA                            | EETHC2E471HJ                 |
|                                            | 25 x 30            | 1.40                         | 1.96   | 0.353                       | 0.159 | EETHC2E471JA                            | EETHC2E471JJ                 |
|                                            | 30 x 25            | 1.40                         | 1.96   | 0.353                       | 0.159 | EETHC2E471KA                            | EETHC2E471KJ                 |
| 560                                        | 22 x 40            | 1.40                         | 1.96   | 0.296                       | 0.133 | EETHC2E561HF                            | EETHC2E561HC                 |
|                                            | 22 x 45            | 1.50                         | 2.10   | 0.296                       | 0.133 | EETHC2E561HA                            | EETHC2E561HJ                 |
|                                            | 25 x 35            | 1.50                         | 2.10   | 0.296                       | 0.133 | EETHC2E561JA                            | EETHC2E561JJ                 |
|                                            | 30 x 25            | 1.50                         | 2.10   | 0.296                       | 0.133 | EETHC2E561KA                            | EETHC2E561KJ                 |

## TS-HC Standard Ratings (continued)

Part numbers shown with 2 pins and 4.0mm length terminals

| Cap.<br>( $\mu$ F)                         | Size (mm)<br>D x L | Max 105°C R.C. ( $A_{rms}$ ) |        | 20°C ESR ( $\Omega$ , max.) |       | Panasonic Part Number (By Sleeve Style) |                       |
|--------------------------------------------|--------------------|------------------------------|--------|-----------------------------|-------|-----------------------------------------|-----------------------|
|                                            |                    | 120Hz                        | 10kHz~ | 120Hz                       | 20kHz | PVC with Top Plate                      | PET without Top Plate |
| 250 VDC Working, 300 VDC Surge (continued) |                    |                              |        |                             |       |                                         |                       |
| 680                                        | 22 x 45            | 1.50                         | 2.10   | 0.244                       | 0.110 | EETHC2E681HF                            | EETHC2E681HC          |
|                                            | 22 x 50            | 1.70                         | 2.38   | 0.244                       | 0.110 | EETHC2E681HA                            | EETHC2E681HJ          |
|                                            | 25 x 40            | 1.70                         | 2.38   | 0.244                       | 0.110 | EETHC2E681JA                            | EETHC2E681JJ          |
|                                            | 30 x 30            | 1.70                         | 2.38   | 0.244                       | 0.110 | EETHC2E681KA                            | EETHC2E681KJ          |
|                                            | 35 x 25            | 1.70                         | 2.38   | 0.244                       | 0.110 | EETHC2E681LA                            | EETHC2E681LJ          |
| 820                                        | 25 x 45            | 2.00                         | 2.80   | 0.202                       | 0.091 | EETHC2E821JA                            | EETHC2E821JJ          |
|                                            | 30 x 35            | 2.00                         | 2.80   | 0.202                       | 0.091 | EETHC2E821KA                            | EETHC2E821KJ          |
|                                            | 35 x 30            | 2.00                         | 2.80   | 0.202                       | 0.091 | EETHC2E821LA                            | EETHC2E821LJ          |
| 1000                                       | 25 x 50            | 2.20                         | 3.08   | 0.166                       | 0.075 | EETHC2E102JF                            | EETHC2E102JC          |
|                                            | 30 x 40            | 2.20                         | 3.08   | 0.166                       | 0.075 | EETHC2E102KA                            | EETHC2E102KJ          |
|                                            | 35 x 30            | 2.20                         | 3.08   | 0.166                       | 0.075 | EETHC2E102LA                            | EETHC2E102LJ          |
| 1200                                       | 30 x 45            | 2.30                         | 3.22   | 0.138                       | 0.062 | EETHC2E122KA                            | EETHC2E122KJ          |
|                                            | 35 x 35            | 2.30                         | 3.22   | 0.138                       | 0.062 | EETHC2E122LA                            | EETHC2E122LJ          |
| 1500                                       | 35 x 45            | 2.50                         | 3.50   | 0.111                       | 0.050 | EETHC2E152LA                            | EETHC2E152LJ          |
| 1800                                       | 35 x 45            | 2.50                         | 3.50   | 0.092                       | 0.041 | EETHC2E182LF                            | EETHC2E182LC          |
|                                            | 35 x 50            | 2.70                         | 3.78   | 0.092                       | 0.041 | EETHC2E182LA                            | EETHC2E182LJ          |
| 350 VDC Working, 400 VDC Surge             |                    |                              |        |                             |       |                                         |                       |
| 120                                        | 22 x 25            | 0.75                         | 1.05   | 1.382                       | 0.622 | EETHC2V121HA                            | EETHC2V121HJ          |
| 150                                        | 22 x 30            | 0.82                         | 1.15   | 1.105                       | 0.497 | EETHC2V151HA                            | EETHC2V151HJ          |
| 180                                        | 22 x 30            | 0.90                         | 1.26   | 0.921                       | 0.414 | EETHC2V181HA                            | EETHC2V181HJ          |
|                                            | 25 x 25            | 0.90                         | 1.26   | 0.921                       | 0.414 | EETHC2V181JA                            | EETHC2V181JJ          |
| 220                                        | 22 x 35            | 1.00                         | 1.40   | 0.754                       | 0.339 | EETHC2V221HA                            | EETHC2V221HJ          |
|                                            | 25 x 30            | 1.00                         | 1.40   | 0.754                       | 0.339 | EETHC2V221JA                            | EETHC2V221JJ          |
| 270                                        | 22 x 40            | 1.10                         | 1.54   | 0.614                       | 0.276 | EETHC2V271HF                            | EETHC2V271HC          |
|                                            | 25 x 35            | 1.10                         | 1.54   | 0.614                       | 0.276 | EETHC2V271JA                            | EETHC2V271JJ          |
|                                            | 30 x 25            | 1.10                         | 1.54   | 0.614                       | 0.276 | EETHC2V271KA                            | EETHC2V271KJ          |
| 330                                        | 22 x 45            | 1.20                         | 1.68   | 0.502                       | 0.226 | EETHC2V331HF                            | EETHC2V331HC          |
|                                            | 25 x 40            | 1.20                         | 1.68   | 0.502                       | 0.226 | EETHC2V331JA                            | EETHC2V331JJ          |
|                                            | 30 x 30            | 1.20                         | 1.68   | 0.502                       | 0.226 | EETHC2V331KA                            | EETHC2V331KJ          |
| 390                                        | 25 x 45            | 1.30                         | 1.82   | 0.425                       | 0.191 | EETHC2V391JA                            | EETHC2V391JJ          |
|                                            | 30 x 30            | 1.30                         | 1.82   | 0.425                       | 0.191 | EETHC2V391KF                            | EETHC2V391KC          |
|                                            | 30 x 35            | 1.30                         | 1.82   | 0.425                       | 0.191 | EETHC2V391KA                            | EETHC2V391KJ          |
| 470                                        | 25 x 50            | 1.40                         | 1.96   | 0.353                       | 0.159 | EETHC2V471JA                            | EETHC2V471JJ          |
|                                            | 30 x 35            | 1.40                         | 1.96   | 0.353                       | 0.159 | EETHC2V471KF                            | EETHC2V471KC          |
|                                            | 35 x 30            | 1.40                         | 1.96   | 0.353                       | 0.159 | EETHC2V471LA                            | EETHC2V471LJ          |
| 560                                        | 30 x 40            | 1.50                         | 2.10   | 0.296                       | 0.133 | EETHC2V561KF                            | EETHC2V561KC          |
|                                            | 30 x 45            | 1.50                         | 2.10   | 0.296                       | 0.133 | EETHC2V561KA                            | EETHC2V561KJ          |
|                                            | 35 x 35            | 1.50                         | 2.10   | 0.296                       | 0.133 | EETHC2V561LA                            | EETHC2V561LJ          |
| 680                                        | 30 x 45            | 1.70                         | 2.38   | 0.244                       | 0.110 | EETHC2V681KF                            | EETHC2V681KC          |
|                                            | 30 x 50            | 1.70                         | 2.38   | 0.244                       | 0.110 | EETHC2V681KA                            | EETHC2V681KJ          |
|                                            | 35 x 40            | 1.70                         | 2.38   | 0.244                       | 0.110 | EETHC2V681LA                            | EETHC2V681LJ          |
| 820                                        | 35 x 45            | 1.90                         | 2.66   | 0.202                       | 0.091 | EETHC2V821LA                            | EETHC2V821LJ          |
| 1000                                       | 35 x 50            | 1.90                         | 2.66   | 0.202                       | 0.091 | EETHC2V102LF                            | EETHC2V102LC          |
| 400 VDC Working, 450 VDC Surge             |                    |                              |        |                             |       |                                         |                       |
| 100                                        | 22 x 25            | 0.70                         | 0.98   | 1.824                       | 0.821 | EETHC2G101HA                            | EETHC2G101HJ          |
| 120                                        | 22 x 30            | 0.75                         | 1.05   | 1.520                       | 0.684 | EETHC2G121HA                            | EETHC2G121HJ          |
| 150                                        | 22 x 30            | 0.88                         | 1.23   | 1.216                       | 0.547 | EETHC2G151HA                            | EETHC2G151HJ          |
|                                            | 25 x 25            | 0.88                         | 1.23   | 1.216                       | 0.547 | EETHC2G151JF                            | EETHC2G151JC          |
| 180                                        | 22 x 35            | 0.95                         | 1.33   | 1.013                       | 0.456 | EETHC2G181HA                            | EETHC2G181HJ          |
|                                            | 25 x 30            | 0.95                         | 1.33   | 1.013                       | 0.456 | EETHC2G181JA                            | EETHC2G181JJ          |
| 220                                        | 22 x 40            | 1.00                         | 1.40   | 0.829                       | 0.373 | EETHC2G221HF                            | EETHC2G221HC          |
|                                            | 22 x 45            | 1.10                         | 1.54   | 0.829                       | 0.373 | EETHC2G221HA                            | EETHC2G221HJ          |
|                                            | 25 x 35            | 1.10                         | 1.54   | 0.829                       | 0.373 | EETHC2G221JA                            | EETHC2G221JJ          |
|                                            | 30 x 25            | 1.10                         | 1.54   | 0.829                       | 0.373 | EETHC2G221KA                            | EETHC2G221KJ          |
| 270                                        | 22 x 45            | 1.10                         | 1.54   | 0.675                       | 0.304 | EETHC2G271HF                            | EETHC2G271HC          |
|                                            | 22 x 50            | 1.22                         | 1.71   | 0.675                       | 0.304 | EETHC2G271HA                            | EETHC2G271HJ          |
|                                            | 25 x 40            | 1.22                         | 1.71   | 0.675                       | 0.304 | EETHC2G271JA                            | EETHC2G271JJ          |
|                                            | 30 x 30            | 1.22                         | 1.71   | 0.675                       | 0.304 | EETHC2G271KA                            | EETHC2G271KJ          |
|                                            | 35 x 25            | 1.22                         | 1.71   | 0.675                       | 0.304 | EETHC2G271LA                            | EETHC2G271LJ          |
| 330                                        | 25 x 45            | 1.44                         | 2.02   | 0.553                       | 0.249 | EETHC2G331JA                            | EETHC2G331JJ          |
|                                            | 30 x 30            | 1.44                         | 2.02   | 0.553                       | 0.249 | EETHC2G331KF                            | EETHC2G331KC          |
|                                            | 30 x 35            | 1.44                         | 2.02   | 0.553                       | 0.249 | EETHC2G331KA                            | EETHC2G331KJ          |
|                                            | 35 x 30            | 1.44                         | 2.02   | 0.553                       | 0.249 | EETHC2G331LA                            | EETHC2G331LJ          |

# Aluminum Electrolytic Capacitors

## TS-HC Standard Ratings (continued)

Part numbers shown with 2 pins and 4.0mm length terminals

| Cap.<br>(μF)                               | Size (mm)<br>D x L | Max 85°C R.C. (A <sub>rms</sub> ) |        | 20°C ESR (Ω, max.) |       | Panasonic Part Number (By Sleeve Style) |                       |
|--------------------------------------------|--------------------|-----------------------------------|--------|--------------------|-------|-----------------------------------------|-----------------------|
|                                            |                    | 120Hz                             | 10kHz~ | 120Hz              | 20kHz | PVC with Top Plate                      | PET without Top Plate |
| 400 VDC Working, 450 VDC Surge (continued) |                    |                                   |        |                    |       |                                         |                       |
| 390                                        | 25 x 50            | 1.55                              | 2.17   | 0.468              | 0.210 | EETHC2G391JA                            | EETHC2G391JJ          |
|                                            | 30 x 35            | 1.40                              | 1.96   | 0.468              | 0.210 | EETHC2G391KF                            | EETHC2G391KC          |
|                                            | 30 x 40            | 1.55                              | 2.17   | 0.468              | 0.210 | EETHC2G391KA                            | EETHC2G391KJ          |
|                                            | 35 x 30            | 1.55                              | 2.17   | 0.468              | 0.210 | EETHC2G391LA                            | EETHC2G391LJ          |
| 470                                        | 30 x 45            | 1.68                              | 2.35   | 0.388              | 0.175 | EETHC2G471KA                            | EETHC2G471KJ          |
|                                            | 35 x 35            | 1.68                              | 2.35   | 0.388              | 0.175 | EETHC2G471LA                            | EETHC2G471LJ          |
| 560                                        | 30 x 45            | 1.90                              | 2.66   | 0.326              | 0.147 | EETHC2G561KF                            | EETHC2G561KC          |
|                                            | 30 x 50            | 1.90                              | 2.66   | 0.326              | 0.147 | EETHC2G561KA                            | EETHC2G561KJ          |
|                                            | 35 x 40            | 1.90                              | 2.66   | 0.326              | 0.147 | EETHC2G561LA                            | EETHC2G561LJ          |
| 680                                        | 35 x 45            | 2.12                              | 2.97   | 0.268              | 0.121 | EETHC2G681LA                            | EETHC2G681LJ          |
| 820                                        | 35 x 50            | 2.30                              | 3.22   | 0.202              | 0.091 | EETHC2G821LA                            | EETHC2G821LJ          |
| 420 VDC Working, 470 VDC Surge             |                    |                                   |        |                    |       |                                         |                       |
| 120                                        | 22 x 30            | 0.74                              | 1.04   | 1.520              | 0.684 | EETHC2S121HA                            | EETHC2S121HJ          |
|                                            | 25 x 25            | 0.74                              | 1.04   | 1.520              | 0.684 | EETHC2S121JA                            | EETHC2S121JJ          |
| 150                                        | 22 x 35            | 0.84                              | 1.18   | 1.216              | 0.547 | EETHC2S151HA                            | EETHC2S151HJ          |
| 180                                        | 22 x 40            | 0.91                              | 1.27   | 1.103              | 0.456 | EETHC2S181HA                            | EETHC2S181HJ          |
|                                            | 25 x 30            | 0.91                              | 1.27   | 1.103              | 0.456 | EETHC2S181JA                            | EETHC2S181JJ          |
| 220                                        | 22 x 45            | 1.05                              | 1.47   | 0.829              | 0.373 | EETHC2S221HA                            | EETHC2S221HJ          |
|                                            | 25 x 35            | 1.05                              | 1.47   | 0.829              | 0.373 | EETHC2S221JA                            | EETHC2S221JJ          |
|                                            | 30 x 25            | 1.05                              | 1.47   | 0.829              | 0.373 | EETHC2S221KA                            | EETHC2S221KJ          |
| 270                                        | 22 x 50            | 1.20                              | 1.68   | 0.675              | 0.304 | EETHC2S271HA                            | EETHC2S271HJ          |
|                                            | 25 x 40            | 1.20                              | 1.68   | 0.675              | 0.304 | EETHC2S271JA                            | EETHC2S271JJ          |
|                                            | 30 x 30            | 1.20                              | 1.68   | 0.675              | 0.304 | EETHC2S271KA                            | EETHC2S271KJ          |
|                                            | 35 x 25            | 1.20                              | 1.68   | 0.675              | 0.304 | EETHC2S271LA                            | EETHC2S271LJ          |
| 330                                        | 25 x 50            | 1.42                              | 1.99   | 0.553              | 0.249 | EETHC2S331JA                            | EETHC2S331JJ          |
|                                            | 30 x 35            | 1.42                              | 1.99   | 0.553              | 0.249 | EETHC2S331KA                            | EETHC2S331KJ          |
|                                            | 35 x 35            | 1.42                              | 1.99   | 0.553              | 0.249 | EETHC2S331LA                            | EETHC2S331LJ          |
| 390                                        | 30 x 40            | 1.55                              | 2.17   | 0.468              | 0.210 | EETHC2S391KA                            | EETHC2S391KJ          |
|                                            | 35 x 35            | 1.55                              | 2.17   | 0.468              | 0.210 | EETHC2S391LA                            | EETHC2S391LJ          |
| 470                                        | 30 x 45            | 1.71                              | 2.39   | 0.388              | 0.175 | EETHC2S471KA                            | EETHC2S471KJ          |
|                                            | 35 x 35            | 1.71                              | 2.39   | 0.388              | 0.175 | EETHC2S471LA                            | EETHC2S471LJ          |
| 560                                        | 30 x 50            | 1.90                              | 2.66   | 0.326              | 0.147 | EETHC2S561KA                            | EETHC2S561KJ          |
|                                            | 35 x 45            | 1.90                              | 2.66   | 0.326              | 0.147 | EETHC2S561LA                            | EETHC2S561LJ          |
| 680                                        | 35 x 50            | 2.10                              | 2.94   | 0.268              | 0.121 | EETHC2S681LA                            | EETHC2S681LJ          |
| 450 VDC Working, 500 VDC Surge             |                    |                                   |        |                    |       |                                         |                       |
| 100                                        | 22 x 30            | 0.64                              | 0.90   | 1.824              | 0.821 | EETHC2W101HA                            | EETHC2W101HJ          |
|                                            | 25 x 25            | 0.64                              | 0.90   | 1.824              | 0.821 | EETHC2W101JA                            | EETHC2W101JJ          |
| 120                                        | 22 x 35            | 0.72                              | 1.01   | 1.520              | 0.684 | EETHC2W121HA                            | EETHC2W121HJ          |
|                                            | 25 x 30            | 0.72                              | 1.01   | 1.520              | 0.684 | EETHC2W121JA                            | EETHC2W121JJ          |
| 150                                        | 22 x 35            | 0.79                              | 1.11   | 1.216              | 0.547 | EETHC2W151HF                            | EETHC2W151HC          |
|                                            | 22 x 40            | 0.79                              | 1.11   | 1.216              | 0.547 | EETHC2W151HA                            | EETHC2W151HJ          |
|                                            | 25 x 30            | 0.79                              | 1.11   | 1.216              | 0.547 | EETHC2W151JA                            | EETHC2W151JJ          |
|                                            | 30 x 25            | 0.79                              | 1.11   | 1.216              | 0.547 | EETHC2W151KA                            | EETHC2W151KJ          |
| 180                                        | 22 x 45            | 0.87                              | 1.22   | 1.013              | 0.456 | EETHC2W181HA                            | EETHC2W181HJ          |
|                                            | 25 x 35            | 0.87                              | 1.22   | 1.013              | 0.456 | EETHC2W181JF                            | EETHC2W181JC          |
|                                            | 25 x 40            | 0.87                              | 1.22   | 1.013              | 0.456 | EETHC2W181JA                            | EETHC2W181JJ          |
|                                            | 30 x 25            | 0.87                              | 1.22   | 1.013              | 0.456 | EETHC2W181KF                            | EETHC2W181KC          |
|                                            | 30 x 30            | 0.87                              | 1.22   | 1.013              | 0.456 | EETHC2W181KA                            | EETHC2W181KJ          |
| 220                                        | 22 x 50            | 1.00                              | 1.40   | 0.829              | 0.373 | EETHC2W221HA                            | EETHC2W221HJ          |
|                                            | 25 x 40            | 1.00                              | 1.40   | 0.829              | 0.373 | EETHC2W221JF                            | EETHC2W221JC          |
|                                            | 25 x 45            | 1.00                              | 1.40   | 0.829              | 0.373 | EETHC2W221JA                            | EETHC2W221JJ          |
|                                            | 30 x 30            | 1.00                              | 1.40   | 0.829              | 0.373 | EETHC2W221KA                            | EETHC2W221KJ          |
|                                            | 35 x 25            | 1.00                              | 1.40   | 0.829              | 0.373 | EETHC2W221LA                            | EETHC2W221LJ          |
| 270                                        | 25 x 45            | 1.19                              | 1.67   | 0.675              | 0.304 | EETHC2W271JF                            | EETHC2W271JC          |
|                                            | 25 x 50            | 1.19                              | 1.67   | 0.675              | 0.304 | EETHC2W271JA                            | EETHC2W271JJ          |
|                                            | 30 x 35            | 1.19                              | 1.67   | 0.675              | 0.304 | EETHC2W271KF                            | EETHC2W271KC          |
|                                            | 30 x 40            | 1.19                              | 1.67   | 0.675              | 0.304 | EETHC2W271KA                            | EETHC2W271KJ          |
|                                            | 35 x 30            | 1.19                              | 1.67   | 0.675              | 0.304 | EETHC2W271LA                            | EETHC2W271LJ          |
| 330                                        | 25 x 50            | 1.38                              | 1.93   | 0.553              | 0.249 | EETHC2W331JF                            | EETHC2W331JC          |
|                                            | 30 x 40            | 1.38                              | 1.93   | 0.553              | 0.249 | EETHC2W331KF                            | EETHC2W331KC          |
|                                            | 30 x 45            | 1.38                              | 1.93   | 0.553              | 0.249 | EETHC2W331KA                            | EETHC2W331KJ          |
|                                            | 35 x 30            | 1.38                              | 1.93   | 0.553              | 0.249 | EETHC2W331LF                            | EETHC2W331LC          |
|                                            | 35 x 35            | 1.38                              | 1.93   | 0.553              | 0.249 | EETHC2W331LA                            | EETHC2W331LJ          |

**TS-HC Standard Ratings (continued)**

Part numbers shown with 2 pins and 4.0mm length terminals

| T-PC Standard Ratings (continued)          |                    |                                    |        |                             |       |                                         |                       |
|--------------------------------------------|--------------------|------------------------------------|--------|-----------------------------|-------|-----------------------------------------|-----------------------|
| Cap.<br>( $\mu$ F)                         | Size (mm)<br>D x L | Max 105°C R.C. (A <sub>rms</sub> ) |        | 20°C ESR ( $\Omega$ , max.) |       | Panasonic Part Number (By Sleeve Style) |                       |
|                                            |                    | 120Hz                              | 10kHz~ | 120Hz                       | 20kHz | PVC with Top Plate                      | PET without Top Plate |
| 450 VDC Working, 500 VDC Surge (continued) |                    |                                    |        |                             |       |                                         |                       |
| 390                                        | 30 x 45            | 1.55                               | 2.17   | 0.468                       | 0.210 | EETHC2W391KF                            | EETHC2W391KC          |
|                                            | 30 x 50            | 1.55                               | 2.17   | 0.468                       | 0.210 | EETHC2W391KA                            | EETHC2W391KJ          |
|                                            | 35 x 35            | 1.55                               | 2.17   | 0.468                       | 0.210 | EETHC2W391LF                            | EETHC2W391LC          |
|                                            | 35 x 40            | 1.55                               | 2.17   | 0.468                       | 0.210 | EETHC2W391LA                            | EETHC2W391LJ          |
| 470                                        | 30 x 50            | 1.74                               | 2.44   | 0.388                       | 0.175 | EETHC2W471KF                            | EETHC2W471KC          |
|                                            | 35 x 40            | 1.74                               | 2.44   | 0.388                       | 0.175 | EETHC2W471LF                            | EETHC2W471LC          |
|                                            | 35 x 45            | 1.74                               | 2.44   | 0.388                       | 0.175 | EETHC2W471LA                            | EETHC2W471LJ          |
| 560                                        | 35 x 50            | 1.90                               | 2.66   | 0.326                       | 0.147 | EETHC2W561LA                            | EETHC2W561LJ          |