

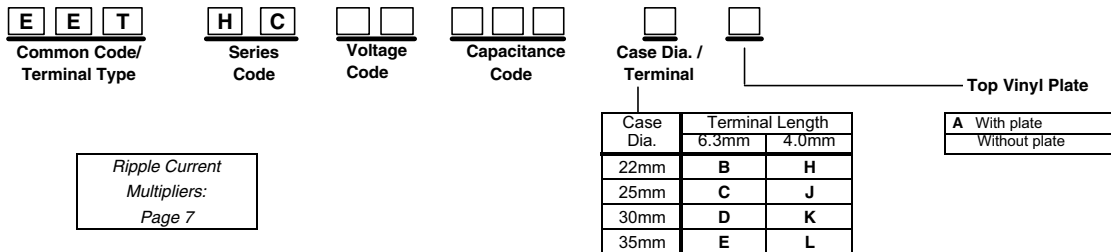
## TS-HC Series two terminal snap-in

- **NEW PRODUCT**
- Highly miniaturized version (30% smaller than HB series)
- 2000 hour life at 105°C
- Can vent construction



|                        |   |               |
|------------------------|---|---------------|
| Rated Working Voltage: | 160 ~ 250 VDC   | 350 ~ 450 VDC |
| Operating Temperature: | -40 ~ +105°C  | -25 ~ +105°C  |
| Nominal Capacitance:   | 270~3300 µF   | 100 ~ 820µF   |
| Capacitance Tolerance: | ± 20%   |               |
| Dissipation Factor:    | 15% maximum (120Hz, +20°C)  |               |
| Endurance:             | 2000 hours at +105°C with maximum specified ripple current (see page 4) |               |

### Part Number System



### TS-HC Standard Ratings (part numbers shown with standard length terminal and top vinyl plate)

| Cap. (µF)                             | Size (mm) D x L | Max 105°C R.C. (A <sub>rms</sub> ) |            | 20°C ESR (Ω, max.) |       | Panasonic Part Number | Cap. (µF)                             | Size (mm) D x L | Max 105°C R.C. (A <sub>rms</sub> ) |            | 20°C ESR (Ω, max.) |       | Panasonic Part Number |
|---------------------------------------|-----------------|------------------------------------|------------|--------------------|-------|-----------------------|---------------------------------------|-----------------|------------------------------------|------------|--------------------|-------|-----------------------|
|                                       |                 | 120Hz                              | 10k~100kHz | 120Hz              | 20kHz |                       |                                       |                 | 120Hz                              | 10k~100kHz | 120Hz              | 20kHz |                       |
| <b>160 VDC Working, 200 VDC Surge</b> |                 |                                    |            |                    |       |                       | <b>200 VDC Working, 250 VDC Surge</b> |                 |                                    |            |                    |       |                       |
| 470                                   | 22 x 25         | 1.40                               | 1.96       | 0.423              | 0.190 | EETHC2C471BA          | 390                                   | 22 x 25         | 1.31                               | 1.83       | 0.510              | 0.230 | EETHC2D391BA          |
| 560                                   | 22 x 30         | 1.50                               | 2.10       | 0.355              | 0.160 | EETHC2C561BA          | 470                                   | 22 x 30         | 1.45                               | 2.03       | 0.423              | 0.190 | EETHC2D471BA          |
| 680                                   | 22 x 30         | 1.70                               | 2.38       | 0.293              | 0.132 | EETHC2C681BA          | 560                                   | 22 x 30         | 1.67                               | 2.34       | 0.355              | 0.160 | EETHC2D561BA          |
| 820                                   | 22 x 35         | 2.00                               | 2.80       | 0.243              | 0.109 | EETHC2C821BA          | 680                                   | 22 x 40         | 1.75                               | 2.45       | 0.293              | 0.132 | EETHC2D681BA          |
| 1000                                  | 22 x 40         | 2.20                               | 3.08       | 0.199              | 0.090 | EETHC2C102BA          | 820                                   | 22 x 45         | 2.04                               | 2.86       | 0.243              | 0.109 | EETHC2D821BA          |
| 1200                                  | 22 x 45         | 2.30                               | 3.22       | 0.166              | 0.075 | EETHC2C122BA          | 1000                                  | 22 x 50         | 2.30                               | 3.22       | 0.199              | 0.090 | EETHC2D102BA          |
| 680                                   | 25 x 25         | 1.70                               | 2.38       | 0.293              | 0.132 | EETHC2C681CA          | 680                                   | 25 x 30         | 1.75                               | 2.45       | 0.293              | 0.132 | EETHC2D681CA          |
| 820                                   | 25 x 30         | 2.00                               | 2.80       | 0.243              | 0.109 | EETHC2C821CA          | 820                                   | 25 x 35         | 2.04                               | 2.86       | 0.243              | 0.109 | EETHC2D821CA          |
| 1000                                  | 25 x 35         | 2.20                               | 3.08       | 0.199              | 0.090 | EETHC2C102CA          | 1000                                  | 25 x 45         | 2.30                               | 3.22       | 0.199              | 0.090 | EETHC2D102CA          |
| 1200                                  | 25 x 40         | 2.30                               | 3.22       | 0.166              | 0.075 | EETHC2C122CA          | 1200                                  | 25 x 50         | 2.65                               | 3.71       | 0.166              | 0.075 | EETHC2D122CA          |
| 1500                                  | 25 x 45         | 2.50                               | 3.50       | 0.133              | 0.060 | EETHC2C152CA          | 820                                   | 30 x 25         | 2.04                               | 2.86       | 0.243              | 0.109 | EETHC2D821DA          |
| 1800                                  | 25 x 50         | 2.70                               | 3.78       | 0.111              | 0.050 | EETHC2C182CA          | 1000                                  | 30 x 30         | 2.30                               | 3.22       | 0.199              | 0.090 | EETHC2D102DA          |
| 1000                                  | 30 x 25         | 2.20                               | 3.08       | 0.216              | 0.108 | EETHC2C102DA          | 1200                                  | 30 x 35         | 2.65                               | 3.71       | 0.166              | 0.075 | EETHC2D122DA          |
| 1200                                  | 30 x 30         | 2.30                               | 3.22       | 0.166              | 0.075 | EETHC2C122DA          | 1500                                  | 30 x 40         | 2.80                               | 3.92       | 0.133              | 0.060 | EETHC2D152DA          |
| 1500                                  | 30 x 35         | 2.50                               | 3.50       | 0.133              | 0.060 | EETHC2C152DA          | 1800                                  | 30 x 45         | 3.08                               | 4.31       | 0.111              | 0.050 | EETHC2D182DA          |
| 1800                                  | 30 x 40         | 2.70                               | 3.78       | 0.111              | 0.050 | EETHC2C182DA          | 2200                                  | 30 x 50         | 3.48                               | 4.87       | 0.090              | 0.041 | EETHC2D222DA          |
| 2200                                  | 30 x 45         | 2.90                               | 4.06       | 0.090              | 0.041 | EETHC2C222DA          | 1000                                  | 35 x 25         | 2.30                               | 3.22       | 0.216              | 0.097 | EETHC2D102EA          |
| 2700                                  | 30 x 50         | 3.10                               | 4.34       | 0.080              | 0.040 | EETHC2C272DA          | 1200                                  | 35 x 30         | 2.65                               | 3.71       | 0.180              | 0.090 | EETHC2D122EA          |
| 1200                                  | 35 x 25         | 2.30                               | 3.22       | 0.180              | 0.090 | EETHC2C122EA          | 1500                                  | 35 x 30         | 2.80                               | 3.92       | 0.144              | 0.072 | EETHC2D152EA          |
| 1500                                  | 35 x 30         | 2.50                               | 3.50       | 0.155              | 0.077 | EETHC2C152EA          | 1800                                  | 35 x 40         | 3.08                               | 4.31       | 0.129              | 0.064 | EETHC2D182EA          |
| 1800                                  | 35 x 30         | 2.70                               | 3.78       | 0.120              | 0.060 | EETHC2C182EA          | 2200                                  | 35 x 45         | 3.48                               | 4.87       | 0.098              | 0.044 | EETHC2D222EA          |
| 2200                                  | 35 x 35         | 2.90                               | 4.06       | 0.098              | 0.049 | EETHC2C222EA          |                                       |                 |                                    |            |                    |       |                       |
| 2700                                  | 35 x 40         | 3.10                               | 4.34       | 0.086              | 0.043 | EETHC2C272EA          |                                       |                 |                                    |            |                    |       |                       |
| 3300                                  | 35 x 50         | 3.30                               | 4.62       | 0.070              | 0.042 | EETHC2C332EA          |                                       |                 |                                    |            |                    |       |                       |

### TS-HC Standard Ratings (continued)

| Cap.<br>( $\mu$ F)                    | Size (mm)<br>D x L | Max 105°C R.C. ( $A_{rms}$ ) |            | 20°C ESR ( $\Omega$ , max.) |       | Panasonic<br>Part Number | Cap.<br>( $\mu$ F)                    | Size (mm)<br>D x L | Max 105°C R.C. ( $A_{rms}$ ) |            | 20°C ESR ( $\Omega$ , max.) |       | Panasonic<br>Part Number |
|---------------------------------------|--------------------|------------------------------|------------|-----------------------------|-------|--------------------------|---------------------------------------|--------------------|------------------------------|------------|-----------------------------|-------|--------------------------|
|                                       |                    | 120Hz                        | 10k~100kHz | 120Hz                       | 20kHz |                          |                                       |                    | 120Hz                        | 10k~100kHz | 120Hz                       | 20kHz |                          |
| <b>250 VDC Working, 300 VDC Surge</b> |                    |                              |            |                             |       |                          | <b>350 VDC Working, 400 VDC Surge</b> |                    |                              |            |                             |       |                          |
| 270                                   | 22 x 25            | 1.10                         | 1.54       | 0.614                       | 0.276 | EETHC2E271BA             | 120                                   | 22 x 25            | 0.75                         | 1.05       | 1.382                       | 0.622 | EETHC2V121BA             |
| 330                                   | 22 x 30            | 1.20                         | 1.68       | 0.502                       | 0.226 | EETHC2E331BA             | 150                                   | 22 x 30            | 0.82                         | 1.15       | 1.105                       | 0.497 | EETHC2V151BA             |
| 390                                   | 22 x 35            | 1.30                         | 1.82       | 0.425                       | 0.191 | EETHC2E391BA             | 180                                   | 22 x 30            | 0.90                         | 1.26       | 0.921                       | 0.414 | EETHC2V181BA             |
| 470                                   | 22 x 40            | 1.40                         | 1.96       | 0.353                       | 0.159 | EETHC2E471BA             | 220                                   | 22 x 35            | 1.00                         | 1.40       | 0.754                       | 0.339 | EETHC2V221BA             |
| 560                                   | 22 x 45            | 1.50                         | 2.10       | 0.296                       | 0.133 | EETHC2E561BA             | 180                                   | 25 x 25            | 0.90                         | 1.26       | 0.921                       | 0.414 | EETHC2V181CA             |
| 680                                   | 22 x 50            | 1.70                         | 2.38       | 0.244                       | 0.110 | EETHC2E681BA             | 220                                   | 25 x 30            | 1.00                         | 1.40       | 0.754                       | 0.339 | EETHC2V221CA             |
| 330                                   | 25 x 25            | 1.20                         | 1.68       | 0.502                       | 0.226 | EETHC2E331CA             | 270                                   | 25 x 35            | 1.10                         | 1.54       | 0.614                       | 0.276 | EETHC2V271CA             |
| 390                                   | 25 x 25            | 1.30                         | 1.82       | 0.425                       | 0.191 | EETHC2E391CA             | 330                                   | 25 x 40            | 1.20                         | 1.68       | 0.502                       | 0.226 | EETHC2V331CA             |
| 470                                   | 25 x 30            | 1.40                         | 1.96       | 0.353                       | 0.159 | EETHC2E471CA             | 390                                   | 25 x 45            | 1.30                         | 1.82       | 0.425                       | 0.191 | EETHC2V391CA             |
| 560                                   | 25 x 35            | 1.50                         | 2.10       | 0.296                       | 0.133 | EETHC2E561CA             | 470                                   | 25 x 50            | 1.40                         | 1.96       | 0.353                       | 0.159 | EETHC2V471CA             |
| 680                                   | 25 x 40            | 1.70                         | 2.38       | 0.244                       | 0.110 | EETHC2E681CA             | 270                                   | 30 x 25            | 1.10                         | 1.54       | 0.614                       | 0.276 | EETHC2V271DA             |
| 820                                   | 25 x 45            | 2.00                         | 2.80       | 0.202                       | 0.091 | EETHC2E821CA             | 330                                   | 30 x 30            | 1.20                         | 1.68       | 0.502                       | 0.226 | EETHC2V331DA             |
| 470                                   | 30 x 25            | 1.40                         | 1.96       | 0.353                       | 0.159 | EETHC2E471DA             | 390                                   | 30 x 35            | 1.30                         | 1.82       | 0.425                       | 0.191 | EETHC2V391DA             |
| 560                                   | 30 x 25            | 1.50                         | 2.10       | 0.296                       | 0.133 | EETHC2E561DA             | 560                                   | 30 x 45            | 1.50                         | 2.10       | 0.296                       | 0.133 | EETHC2V561DA             |
| 680                                   | 30 x 30            | 1.70                         | 2.38       | 0.244                       | 0.110 | EETHC2E681DA             | 680                                   | 30 x 50            | 1.70                         | 2.38       | 0.244                       | 0.110 | EETHC2V681DA             |
| 820                                   | 30 x 35            | 2.00                         | 2.80       | 0.202                       | 0.091 | EETHC2E821DA             | 470                                   | 35 x 30            | 1.40                         | 1.96       | 0.353                       | 0.159 | EETHC2V471EA             |
| 1000                                  | 30 x 40            | 2.20                         | 3.08       | 0.166                       | 0.075 | EETHC2E102DA             | 560                                   | 35 x 35            | 1.50                         | 2.10       | 0.296                       | 0.133 | EETHC2V561EA             |
| 1200                                  | 30 x 45            | 2.30                         | 3.22       | 0.138                       | 0.062 | EETHC2E122DA             | 680                                   | 35 x 40            | 1.70                         | 2.38       | 0.244                       | 0.110 | EETHC2V681EA             |
| 680                                   | 35 x 25            | 1.70                         | 2.38       | 0.244                       | 0.110 | EETHC2E681EA             | 820                                   | 35 x 45            | 1.90                         | 2.66       | 0.202                       | 0.091 | EETHC2V821EA             |
| 820                                   | 35 x 30            | 2.00                         | 2.80       | 0.202                       | 0.091 | EETHC2E821EA             |                                       |                    |                              |            |                             |       |                          |
| 1500                                  | 35 x 45            | 2.50                         | 3.50       | 0.111                       | 0.050 | EETHC2E152EA             |                                       |                    |                              |            |                             |       |                          |
| 1800                                  | 35 x 50            | 2.70                         | 3.78       | 0.092                       | 0.041 | EETHC2E182EA             |                                       |                    |                              |            |                             |       |                          |

| Cap.<br>( $\mu$ F)                    | Size (mm)<br>D x L | Max 105°C R.C. ( $A_{rms}$ ) |            | 20°C ESR ( $\Omega$ , max.) |       | Panasonic<br>Part Number | Cap.<br>( $\mu$ F)                    | Size (mm)<br>D x L | Max 105°C R.C. ( $A_{rms}$ ) |            | 20°C ESR ( $\Omega$ , max.) |       | Panasonic<br>Part Number |
|---------------------------------------|--------------------|------------------------------|------------|-----------------------------|-------|--------------------------|---------------------------------------|--------------------|------------------------------|------------|-----------------------------|-------|--------------------------|
|                                       |                    | 120Hz                        | 10k~100kHz | 120Hz                       | 20kHz |                          |                                       |                    | 120Hz                        | 10k~100kHz | 120Hz                       | 20kHz |                          |
| <b>400 VDC Working, 450 VDC Surge</b> |                    |                              |            |                             |       |                          | <b>450 VDC Working, 500 VDC Surge</b> |                    |                              |            |                             |       |                          |
| 100                                   | 22 x 25            | 0.70                         | 0.98       | 1.824                       | 0.821 | EETHC2G101BA             | 100                                   | 22 x 30            | 0.64                         | 0.90       | 1.824                       | 0.821 | EETHC2W101BA             |
| 120                                   | 22 x 30            | 0.75                         | 1.05       | 1.520                       | 0.684 | EETHC2G121BA             | 120                                   | 22 x 35            | 0.72                         | 1.01       | 1.520                       | 0.684 | EETHC2W121BA             |
| 150                                   | 22 x 30            | 0.88                         | 1.23       | 1.216                       | 0.547 | EETHC2G151BA             | 150                                   | 22 x 40            | 0.79                         | 1.11       | 1.216                       | 0.547 | EETHC2W151BA             |
| 180                                   | 22 x 35            | 0.95                         | 1.33       | 1.013                       | 0.456 | EETHC2G181BA             | 180                                   | 22 x 45            | 0.87                         | 1.22       | 1.013                       | 0.456 | EETHC2W181BA             |
| 220                                   | 22 x 45            | 1.10                         | 1.54       | 0.829                       | 0.373 | EETHC2G221BA             | 100                                   | 25 x 25            | 0.64                         | 0.90       | 1.824                       | 0.821 | EETHC2W101CA             |
| 270                                   | 22 x 50            | 1.22                         | 1.71       | 0.675                       | 0.304 | EETHC2G271BA             | 120                                   | 25 x 30            | 0.72                         | 1.01       | 1.520                       | 0.684 | EETHC2W121CA             |
| 180                                   | 25 x 30            | 0.95                         | 1.33       | 1.013                       | 0.456 | EETHC2G181CA             | 150                                   | 25 x 30            | 0.79                         | 1.11       | 1.216                       | 0.547 | EETHC2W151CA             |
| 220                                   | 25 x 35            | 1.10                         | 1.54       | 0.829                       | 0.373 | EETHC2G221CA             | 180                                   | 25 x 40            | 0.87                         | 1.22       | 1.013                       | 0.456 | EETHC2W181CA             |
| 270                                   | 25 x 40            | 1.22                         | 1.71       | 0.675                       | 0.304 | EETHC2G271CA             | 220                                   | 25 x 45            | 1.00                         | 1.40       | 0.829                       | 0.373 | EETHC2W221CA             |
| 330                                   | 25 x 45            | 1.44                         | 2.02       | 0.553                       | 0.249 | EETHC2G331CA             | 270                                   | 25 x 50            | 1.19                         | 1.67       | 0.675                       | 0.304 | EETHC2W271CA             |
| 390                                   | 25 x 50            | 1.55                         | 2.17       | 0.468                       | 0.210 | EETHC2G391CA             | 150                                   | 30 x 25            | 0.79                         | 1.11       | 1.216                       | 0.547 | EETHC2W151DA             |
| 220                                   | 30 x 25            | 1.10                         | 1.54       | 0.829                       | 0.373 | EETHC2G221DA             | 180                                   | 30 x 30            | 0.87                         | 1.22       | 1.013                       | 0.456 | EETHC2W181DA             |
| 270                                   | 30 x 30            | 1.22                         | 1.71       | 0.675                       | 0.304 | EETHC2G271DA             | 220                                   | 30 x 30            | 1.00                         | 1.40       | 0.829                       | 0.373 | EETHC2W221DA             |
| 330                                   | 30 x 35            | 1.44                         | 2.02       | 0.553                       | 0.249 | EETHC2G331DA             | 270                                   | 30 x 40            | 1.19                         | 1.67       | 0.675                       | 0.304 | EETHC2W271DA             |
| 390                                   | 30 x 40            | 1.55                         | 2.17       | 0.468                       | 0.210 | EETHC2G391DA             | 330                                   | 30 x 45            | 1.38                         | 1.93       | 0.553                       | 0.249 | EETHC2W331DA             |
| 470                                   | 30 x 45            | 1.68                         | 2.35       | 0.388                       | 0.175 | EETHC2G471DA             | 390                                   | 30 x 50            | 1.55                         | 2.17       | 0.468                       | 0.210 | EETHC2W391DA             |
| 560                                   | 30 x 50            | 1.90                         | 2.66       | 0.326                       | 0.147 | EETHC2G561DA             | 220                                   | 35 x 25            | 1.00                         | 1.40       | 0.829                       | 0.373 | EETHC2W221EA             |
| 270                                   | 35 x 25            | 1.22                         | 1.71       | 0.675                       | 0.304 | EETHC2G271EA             | 270                                   | 35 x 30            | 1.19                         | 1.67       | 0.675                       | 0.304 | EETHC2W271EA             |
| 330                                   | 35 x 30            | 1.44                         | 2.02       | 0.553                       | 0.249 | EETHC2G331EA             | 330                                   | 35 x 35            | 1.38                         | 1.93       | 0.553                       | 0.249 | EETHC2W331EA             |
| 390                                   | 35 x 30            | 1.55                         | 2.17       | 0.468                       | 0.210 | EETHC2G391EA             | 390                                   | 35 x 40            | 1.55                         | 2.17       | 0.468                       | 0.210 | EETHC2W391EA             |
| 470                                   | 35 x 35            | 1.68                         | 2.35       | 0.388                       | 0.175 | EETHC2G471EA             | 470                                   | 35 x 45            | 1.74                         | 2.44       | 0.388                       | 0.175 | EETHC2W471EA             |
| 560                                   | 35 x 40            | 1.90                         | 2.66       | 0.326                       | 0.147 | EETHC2G561EA             | 560                                   | 35 x 50            | 1.90                         | 2.66       | 0.326                       | 0.147 | EETHC2W561EA             |
| 680                                   | 35 x 45            | 2.12                         | 2.97       | 0.268                       | 0.121 | EETHC2G681EA             |                                       |                    |                              |            |                             |       |                          |