## Series 3H For high temperature use

## Features

Series 3 H is an industrial quality capacitor with very long life characteristics (life expectancy is 10 years at $60^{\circ} \mathrm{C}$ ) and a wide operating temperature range (for continuous use in industrial equipment where ambient temperature is $+60 \sim+70^{\circ} \mathrm{C}$.

Specifications

| Item | Performance Characteristics |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Operating Temperature Range | -40 to $+125^{\circ} \mathrm{C}$ |  |  |  |  |  |
| Rated Working Voltage Range | 10 to 63 V DC |  |  |  |  |  |
| Nominal Capacitance Range | 1 to $1000 \mu \mathrm{~F}$ |  |  |  |  |  |
| Capacitance Tolerance | $\pm 20 \% \quad\left(120 \mathrm{~Hz},+20^{\circ} \mathrm{C}\right)$ |  |  |  |  |  |
| Leakage Current | I $\leqq 0.002 \mathrm{CV}$ or $2[\mu \mathrm{~A}] \quad$ Whichever is greater measured after 5 minutes application of rated working voltage at $+20^{\circ} \mathrm{C}$ |  |  |  |  |  |
| $\tan \delta$ | Working voltage [V] | 10 | 16 | 25 | 40 | 63 |
| $\left(120 \mathrm{~Hz},+20^{\circ} \mathrm{C}\right)$ | $\tan \delta \quad \max$. | 0.17 | 0.15 | 0.12 | 0.10 | 0.10 |
| Impedance | Maximum C.Z (rated cap. $[\mu \mathrm{F}] \times$ Impedance [ $\Omega$ ]) value at 10 kHz |  |  |  |  |  |
|  | Working voltage [V] | 10 | 16 | 25 | 40 | 63 |
|  | C. 2 max. at $+20^{\circ} \mathrm{C}$ | 300 | 180 | 150 | 120 | 90 |
|  | C. 2 max. at $-25^{\circ} \mathrm{C}$ | 5000 | 3000 | 2500 | 1500 | 1000 |
|  | C. 2 max. at $-40^{\circ} \mathrm{C}$ | 15000 | 9500 | 7000 | 4700 | 3000 |
| Endurance | Test conditions Duration Ambient temperature Applied voltage <br> Post test requirements (+ Leakage current Capacitance change $\tan \delta$ | $\begin{aligned} & 1000 \mathrm{~h} \\ & +125^{\circ} \end{aligned}$ <br> Rated <br> C) <br> $\leq$ Initia <br> $\pm 15 \%$ <br> $\leqq 150$ | rking <br> fied valu al mea itial spe | value value |  |  |
| Shelf Life | Test conditions Duration Ambient temperature Applied voltage <br> Post test requirements (+ Leakage current Capacitance change $\tan \delta$ | $\begin{aligned} & 1000 \mathrm{~h} \\ & +125^{\circ} \mathrm{c} \\ & \text { (None) } \end{aligned}$ <br> C) <br> $\leq 500 \%$ <br> $\pm 15 \%$ <br> § 150 |  | value value value |  |  |

## Explanation of Part Numbers



Dimensions in mm (not to scale)

|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Body dia. $\phi$ D | 6.3 | 8 | 10 | 12.5 | 16 |
|  | Lead dia. $\phi$ d | 0.6 | 0.6 | 0.6 | 0.6 | 0.8 |
|  | Lead space P | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 |

Case Size
$\phi \mathrm{D} \times \mathrm{L}[\mathrm{mm}]$

| W.V.[V.DC] <br> Cap. [ $\mu \mathrm{F}$ ] | 10 | 16 | 25 | 40 | 63 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  |  |  | $6.3 \times 11.2$ |
| 2.2 |  |  |  |  | $6.3 \times 11.2$ |
| 3.3 |  |  |  |  | $6.3 \times 11.2$ |
| 4.7 |  |  |  |  | $6.3 \times 11.2$ |
| 10 |  |  |  |  | $8 \times 11.5$ |
| 22 |  |  | $8 \times 11.5$ | $10 \times 12.5$ | $10 \times 16$ |
| 33 |  | $8 \times 11.5$ | $10 \times 12.5$ | $\rightarrow$ | $10 \times 16$ |
| 47 |  | $8 \times 11.5$ | $10 \times 12.5$ | $10 \times 16$ | $10 \times 20$ |
| 100 | $10 \times 12.5$ | $10 \times 16$ | $10 \times 20$ | $12.5 \times 20$ | $12.5 \times 25$ |
| 220 | $10 \times 16$ | $12.5 \times 20$ | $12.5 \times 25$ | $16 \times 25$ | $16 \times 31.5$ |
| 330 | $10 \times 20$ | $12.5 \times 25$ | $16 \times 25$ | $16 \times 31.5$ |  |
| 470 | $12.5 \times 25$ | $\rightarrow$ | $16 \times 25$ | $16 \times 31.5$ |  |
| 1000 | $16 \times 25$ |  |  |  |  |

Madial lead Series 3H

## Standard Products

| $\begin{aligned} & \text { W.V. } \\ & \text { [V.DC] } \end{aligned}$ | Cap. [ $\mu \mathrm{F}$ ] | Part No. | $\begin{aligned} & \text { D.C.L. } \\ & \left(+20^{\circ} \mathrm{C} / 5 \mathrm{~min}\right) \\ & {[\mu \mathrm{A}] \text { max. }} \end{aligned}$ | $\begin{gathered} \tan \delta \\ \left(120 \mathrm{~Hz} /+20^{\circ} \mathrm{C}\right) \\ \text { max. } \end{gathered}$ | $\begin{gathered} \text { Ripple current } \\ \left(120 \mathrm{~Hz} /+85^{\circ} \mathrm{C}\right) \\ {[\mathrm{mA}] \text { rms }} \\ \max . \\ \hline \end{gathered}$ | Dimensions [mm] |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | $\phi$ D | L | P | od |
| 10 | 100 | ECEA10T100 | 2.0 | 0.17 | 160 | 10 | 12.5 | 5 | 0.6 |
|  | 220 | ECEA10T220 | 4.4 | 0.17 | 250 | 10 | 16 | 5 | 0.6 |
|  | 330 | ECEA10T330 | 6.6 | 0.17 | 340 | 10 | 20 | 5 | 0.6 |
|  | 470 | ECEA10T470 | 9.4 | 0.17 | 400 | 12.5 | 25 | 5 | 0.6 |
|  | 1000 | ECEA10T102 | 20.0 | 0.17 | 580 | 16 | 25 | 7.5 | 0.8 |
| 16 | 33 | ECEA16T33 | 2.0 | 0.15 | 90 | 8 | 11.5 | 3.5 | 0.6 |
|  | 47 | ECEA16T47 | 2.0 | 0.15 | 110 | 8 | 11.5 | 3.5 | 0.6 |
|  | 100 | ECEA16T100 | 3.2 | 0.15 | 200 | 10 | 16 | 5 | 0.6 |
|  | 220 | ECEA16T220 | 7.0 | 0.15 | 320 | 12.5 | 20 | 5 | 0.6 |
|  | 330 | ECEA16T330 | 10.5 | 0.15 | 405 | 12.5 | 25 | 5 | 0.6 |
| 25 | 22 | ECEA25T22 | 2.0 | 0.12 | 80 | 8 | 11.5 | 3.5 | 0.6 |
|  | 33 | ECEA25T33 | 2.0 | 0.12 | 110 | 10 | 12.5 | 5 | 0.6 |
|  | 47 | ECEA25T47 | 2.3 | 0.12 | 140 | 10 | 12.5 | 5 | 0.6 |
|  | 100 | ECEA25T100 | 5.0 | 0.12 | 230 | 10 | 20 | 5 | 0.6 |
|  | 220 | ECEA25T220 | 11.0 | 0.12 | 400 | 12.5 | 25 | 5 | 0.6 |
|  | 330 | ECEA25T330 | 16.5 | 0.12 | 500 | 16 | 25 | 7.5 | 0.8 |
|  | 470 | ECEA25T470 | 23.5 | 0.12 | 600 | 16 | 25 | 7.5 | 0.8 |
| 40 | 22 | ECEA40T22 | 2.0 | 0.10 | 90 | 10 | 12.5 | 5 | 0.6 |
|  | 47 | ECEA40T47 | 3.7 | 0.10 | 165 | 10 | 16 | 5 | 0.6 |
|  | 100 | ECEA40T100 | 8.0 | 0.10 | 280 | 12.5 | 20 | 5 | 0.6 |
|  | 220 | ECEA40T220 | 17.6 | 0.10 | 450 | 16 | 25 | 7.5 | 0.8 |
|  | 330 | ECEA40T330 | 26.4 | 0.10 | 600 | 16 | 31.5 | 7.5 | 0.8 |
|  | 470 | ECEA40T470 | 37.6 | 0.10 | 720 | 16 | 31.5 | 7.5 | 0.8 |
| 63 | 1 | ECEA63T1 | 2.0 | 0.10 | 12 | 6.3 | 11.2 | 2.5 | 0.6 |
|  | 2.2 | ECEA63T2R2 | 2.0 | 0.10 | 22 | 6.3 | 11.2 | 2.5 | 0.6 |
|  | 3.3 | ECEA63T3R3 | 2.0 | 0.10 | 32 | 6.3 | 11.2 | 2.5 | 0.6 |
|  | 4.7 | ECEA63T4R7 | 2.0 | 0.10 | 40 | 6.3 | 11.2 | 2.5 | 0.6 |
|  | 10 | ECEA63T10 | 2.0 | 0.10 | 70 | 8 | 11.5 | 3.5 | 0.6 |
|  | 22 | ECEA63T22 | 2.7 | 0.10 | 120 | 10 | 16 | 5 | 0.6 |
|  | 33 | ECEA63T33 | 4.1 | 0.10 | 160 | 10 | 16 | 5 | 0.6 |
|  | 47 | ECEA63T47 | 5.9 | 0.10 | 200 | 10 | 20 | 5 | 0.6 |
|  | 100 | ECEA63T100 | 12.6 | 0.10 | 360 | 12.5 | 25 | 5 | 0.6 |
|  | 220 | ECEA63T220 | 27.7 | 0.10 | 600 | 16 | 31.5 | 7.5 | 0.8 |

[^0]Whenever a doubt about safety arises from this product, please inform us immediately for technical consultation without fail.


[^0]:    Design, Specifications are subject to change without notice. Ask factory for technical specifications before purchase and or use.

