

TS-ED Series 105°C, 3000 hours

- Highest ripple current capability for demanding inverter applications
- 2 and 3 pin versions available
- 3000 hour life at 105°C



| Rated Working Voltage: | 200 ~ 250 VDC | 400 ~ 450 VDC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------------|--|---------------|----------------------------------|-----|------|---|----------------------|-------|---|------|------|-------|--|----------------|----|----|---------|-----|----|------|----------------------|-------|------|------|------|-------|-------------|------|------|-----|-----|------|-----|-------------|-----|-----|-----|-----|------|
| Operating Temperature: | -40 ~ +105°C | -25 ~ +105°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nominal Capacitance: | 220~2200 µF | 56 ~ 560µF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance: | ± 20% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor (120Hz, 20°C): | 15% maximum (120Hz, +20°C) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current: | 3√CV (µA) max. after 5 minutes; C = Capacitance in µF, V = WV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ripple Current Multipliers: | <table border="1"> <thead> <tr> <th colspan="6">Ripple Current Frequency Factors</th> <th colspan="5">Ripple Current Ambient Temperature Factors*</th> </tr> <tr> <th>Frequency(Hz):</th> <th>50</th> <th>60</th> <th>100~120</th> <th>500</th> <th>1k</th> <th>10k~</th> <th>Ambient Temperature:</th> <th>105°C</th> <th>85°C</th> <th>70°C</th> <th>60°C</th> <th>≤45°C</th> </tr> </thead> <tbody> <tr> <td>Multiplier:</td> <td>0.71</td> <td>0.78</td> <td>1.0</td> <td>1.2</td> <td>1.25</td> <td>1.4</td> <td>Multiplier:</td> <td>1.0</td> <td>1.7</td> <td>2.0</td> <td>2.2</td> <td>2.35</td> </tr> </tbody> </table> | | Ripple Current Frequency Factors | | | | | | Ripple Current Ambient Temperature Factors* | | | | | Frequency(Hz): | 50 | 60 | 100~120 | 500 | 1k | 10k~ | Ambient Temperature: | 105°C | 85°C | 70°C | 60°C | ≤45°C | Multiplier: | 0.71 | 0.78 | 1.0 | 1.2 | 1.25 | 1.4 | Multiplier: | 1.0 | 1.7 | 2.0 | 2.2 | 2.35 |
| Ripple Current Frequency Factors | | | | | | Ripple Current Ambient Temperature Factors* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Frequency(Hz): | 50 | 60 | 100~120 | 500 | 1k | 10k~ | Ambient Temperature: | 105°C | 85°C | 70°C | 60°C | ≤45°C | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multiplier: | 0.71 | 0.78 | 1.0 | 1.2 | 1.25 | 1.4 | Multiplier: | 1.0 | 1.7 | 2.0 | 2.2 | 2.35 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Endurance: | 3000 hours at +105°C with maximum specified ripple current (see page 6) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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

Part Number System

E E T
Common Code

E D
Series Code

□ □
Voltage Code

□ □ □
Capacitance Code

| Diameter / Terminal Code | | | |
|--------------------------|-------|-------|-------|
| # of pins: | 2 | 2 | 3 |
| pin length: | 6.3mm | 4.0mm | 4.0mm |
| Diameter | 22mm | B | H |
| | 25mm | C | J |
| | 30mm | D | K |
| | 35mm | E | L |

(Please see page 10 for details)

| Insulation Options | |
|--------------------|-----------------------------------|
| A | PVC with top plate |
| | PVC without top plate (no suffix) |
| J | PET sleeve without plate |

TS-ED Standard Ratings (part numbers shown with 6.3mm length terminal and top vinyl plate)

| Cap. (µF) | Size (mm) D x L | Max 105°C R.C. (A _{ms}) | | 20°C ESR (Ω, max.) | | Panasonic Part Number | Cap. (µF) | Size (mm) D x L | Max 105°C R.C. (A _{ms}) | | 20°C ESR (Ω, max.) | | Panasonic Part Number | |
|---------------------------------------|-----------------|-----------------------------------|--------|--------------------|--------------|-----------------------|---|---------------------------------------|-----------------------------------|--------|--------------------|--------------|-----------------------|--------------|
| | | 120Hz | 10kHz~ | 120Hz | 20kHz | | | | 120Hz | 10kHz~ | 120Hz | 20kHz | | |
| 200 VDC Working, 250 VDC Surge | | | | | | | 250 VDC Working, 300 VDC Surge (continued) | | | | | | | |
| 270 | 22 x 25 | 1.42 | 2.03 | 0.553 | 0.249 | EETED2D271BA | 390 | 22 x 40 | 1.72 | 2.45 | 0.383 | 0.172 | EETED2E391BA | |
| 330 | 22 x 30 | 1.56 | 2.23 | 0.452 | 0.203 | EETED2D331BA | 25 x 30 | 1.71 | 2.44 | 0.383 | 0.172 | EETED2E391CA | | |
| 390 | 22 x 30 | 1.71 | 2.44 | 0.383 | 0.172 | EETED2D391BA | 30 x 25 | 1.71 | 2.44 | 0.383 | 0.172 | EETED2E391DA | | |
| | 25 x 25 | 1.71 | 2.44 | 0.383 | 0.172 | EETED2D391CA | 470 | 22 x 45 | 1.85 | 2.64 | 0.317 | 0.143 | EETED2E471BA | |
| 470 | 22 x 35 | 1.85 | 2.64 | 0.317 | 0.143 | EETED2D471BA | | 25 x 35 | 1.85 | 2.64 | 0.317 | 0.143 | EETED2E471CA | |
| | 25 x 30 | 1.85 | 2.64 | 0.317 | 0.143 | EETED2D471CA | | 30 x 30 | 1.85 | 2.64 | 0.317 | 0.143 | EETED2E471DA | |
| 560 | 22 x 40 | 2.14 | 3.05 | 0.266 | 0.120 | EETED2D561BA | 560 | 25 x 40 | 2.14 | 3.05 | 0.266 | 0.120 | EETED2E561CA | |
| | 25 x 30 | 2.14 | 3.05 | 0.266 | 0.120 | EETED2D561CA | | 30 x 30 | 2.14 | 3.05 | 0.266 | 0.120 | EETED2E561DA | |
| | 30 x 25 | 2.14 | 3.05 | 0.266 | 0.120 | EETED2D561DA | | 680 | 35 x 25 | 2.14 | 3.05 | 0.266 | 0.133 | EETED2E561EA |
| 680 | 22 x 45 | 2.42 | 3.45 | 0.219 | 0.099 | EETED2D681BA | 25 x 45 | | 2.42 | 3.45 | 0.219 | 0.099 | EETED2E681CA | |
| | 25 x 35 | 2.42 | 3.45 | 0.219 | 0.099 | EETED2D681CA | 30 x 35 | | 2.42 | 3.45 | 0.219 | 0.099 | EETED2E681DA | |
| | 30 x 30 | 2.42 | 3.45 | 0.219 | 0.099 | EETED2D681DA | 35 x 30 | 2.42 | 3.45 | 0.219 | 0.110 | EETED2E681EA | | |
| 820 | 22 x 50 | 2.63 | 3.76 | 0.182 | 0.082 | EETED2D821BA | 820 | 30 x 40 | 2.63 | 3.76 | 0.182 | 0.082 | EETED2E821DA | |
| | 25 x 40 | 2.63 | 3.76 | 0.182 | 0.082 | EETED2D821CA | | 35 x 35 | 2.63 | 3.76 | 0.182 | 0.091 | EETED2E821EA | |
| | 30 x 30 | 2.63 | 3.76 | 0.182 | 0.082 | EETED2D821DA | 1000 | 30 x 50 | 2.84 | 4.06 | 0.149 | 0.067 | EETED2E102DA | |
| 35 x 25 | 2.63 | 3.76 | 0.182 | 0.091 | EETED2D821EA | 35 x 40 | | 2.84 | 4.06 | 0.149 | 0.067 | EETED2E102EA | | |
| 1000 | 25 x 45 | 2.84 | 4.06 | 0.149 | 0.067 | EETED2D102CA | 1200 | 35 x 45 | 3.13 | 4.47 | 0.124 | 0.062 | EETED2E122EA | |
| | 30 x 35 | 2.84 | 4.06 | 0.149 | 0.067 | EETED2D102DA | | 1500 | 35 x 50 | 3.56 | 5.08 | 0.099 | 0.050 | EETED2E152EA |
| | 35 x 30 | 2.84 | 4.06 | 0.149 | 0.067 | EETED2D102EA | | 400 VDC Working, 450 VDC Surge | | | | | | |
| 1200 | 30 x 40 | 3.13 | 4.47 | 0.124 | 0.062 | EETED2D122DA | 82 | 22 x 25 | 0.80 | 1.14 | 1.617 | 0.728 | EETED2G820BA | |
| | 35 x 35 | 3.13 | 4.47 | 0.124 | 0.062 | EETED2D122EA | 100 | 22 x 30 | 0.91 | 1.30 | 1.326 | 0.597 | EETED2G101BA | |
| 1500 | 30 x 50 | 3.56 | 5.08 | 0.099 | 0.050 | EETED2D152DA | | 25 x 25 | 0.91 | 1.30 | 1.326 | 0.597 | EETED2G101CA | |
| | 35 x 40 | 3.56 | 5.08 | 0.099 | 0.050 | EETED2D152EA | 120 | 22 x 35 | 1.02 | 1.46 | 1.105 | 0.497 | EETED2G121BA | |
| 1800 | 35 x 45 | 3.84 | 5.48 | 0.083 | 0.041 | EETED2D182EA | | 25 x 30 | 1.02 | 1.46 | 1.105 | 0.497 | EETED2G121CA | |
| | 2200 | 35 x 50 | 4.12 | 5.89 | 0.068 | 0.033 | EETED2D222EA | 150 | 22 x 40 | 1.07 | 1.53 | 0.884 | 0.398 | EETED2G151BA |
| 250 VDC Working, 300 VDC Surge | | | | | | 25 x 30 | 1.07 | | 1.53 | 0.884 | 0.398 | EETED2G151CA | | |
| 220 | | 22 x 30 | 1.28 | 1.83 | 0.678 | 0.305 | EETED2E221BA | | 30 x 25 | 1.07 | 1.53 | 0.884 | 0.398 | EETED2G151DA |
| 270 | 22 x 30 | 1.42 | 2.03 | 0.553 | 0.249 | EETED2E271BA | 180 | 22 x 45 | 1.12 | 1.60 | 0.737 | 0.332 | EETED2G181BA | |
| | 25 x 25 | 1.42 | 2.03 | 0.553 | 0.249 | EETED2E271CA | | 25 x 35 | 1.12 | 1.60 | 0.737 | 0.332 | EETED2G181CA | |
| 330 | 22 x 35 | 1.64 | 2.34 | 0.452 | 0.203 | EETED2E331BA | 30 x 30 | 1.12 | 1.60 | 0.737 | 0.332 | EETED2G181DA | | |
| | 25 x 30 | 1.56 | 2.23 | 0.452 | 0.203 | EETED2E331CA | 220 | 22 x 50 | 1.42 | 2.03 | 0.603 | 0.271 | EETED2G221BA | |

TS-ED Standard Ratings (continued)

| Cap. (μ F) | Size (mm) D x L | Max 105°C R.C. (A_{rms}) | | 20°C ESR (Ω , max.) | | Panasonic Part Number |
|---|--------------------|------------------------------|--------|-----------------------------|-------|--------------------------|
| | | 120Hz | 10kHz~ | 120Hz | 20kHz | |
| 400 VDC Working, 450 VDC Surge (continued) | | | | | | |
| 220 | 25 x 40 | 1.42 | 2.03 | 0.603 | 0.271 | EETED2G221CA |
| | 30 x 30 | 1.42 | 2.03 | 0.603 | 0.271 | EETED2G221DA |
| | 35 x 25 | 1.42 | 2.03 | 0.603 | 0.271 | EETED2G221EA |
| 270 | 25 x 45 | 1.56 | 2.23 | 0.491 | 0.221 | EETED2G271CA |
| | 30 x 35 | 1.56 | 2.23 | 0.491 | 0.221 | EETED2G271DA |
| | 35 x 30 | 1.56 | 2.23 | 0.491 | 0.221 | EETED2G271EA |
| 330 | 30 x 40 | 1.71 | 2.44 | 0.402 | 0.181 | EETED2G331DA |
| | 35 x 30 | 1.71 | 2.44 | 0.402 | 0.181 | EETED2G331EA |
| 390 | 30 x 45 | 1.85 | 2.64 | 0.340 | 0.153 | EETED2G391DA |
| | 35 x 35 | 1.85 | 2.64 | 0.340 | 0.153 | EETED2G391EA |
| 470 | 35 x 40 | 2.01 | 2.87 | 0.282 | 0.127 | EETED2G471EA |
| 560 | 35 x 45 | 2.35 | 3.36 | 0.237 | 0.107 | EETED2G561EA |
| 420 VDC Working, 470 VDC Surge | | | | | | |
| 68 | 22 x 25 | 1.08 | 0.95 | 1.950 | 0.878 | EETED2S680BA |
| 82 | 22 x 30 | 1.14 | 1.08 | 1.617 | 0.728 | EETED2S820BA |
| | 25 x 25 | 1.14 | 1.08 | 1.617 | 0.728 | EETED2S820CA |
| 100 | 22 x 30 | 1.30 | 1.14 | 1.326 | 0.597 | EETED2S101BA |
| | 25 x 25 | 1.30 | 1.14 | 1.326 | 0.597 | EETED2S101CA |
| 120 | 22 x 35 | 1.46 | 1.30 | 1.105 | 0.497 | EETED2S121BA |
| | 25 x 30 | 1.46 | 1.30 | 1.105 | 0.497 | EETED2S121CA |
| 150 | 22 x 40 | 1.53 | 1.46 | 0.884 | 0.398 | EETED2S151BA |
| | 25 x 35 | 1.53 | 1.46 | 0.884 | 0.398 | EETED2S151CA |
| | 30 x 25 | 1.53 | 1.46 | 0.884 | 0.398 | EETED2S151DA |
| 180 | 22 x 45 | 1.60 | 1.53 | 0.737 | 0.332 | EETED2S181BA |
| | 25 x 40 | 1.60 | 1.53 | 0.737 | 0.332 | EETED2S181CA |
| | 30 x 30 | 1.60 | 1.53 | 0.737 | 0.332 | EETED2S181DA |
| | 35 x 25 | 1.60 | 1.53 | 0.737 | 0.332 | EETED2S181EA |
| 220 | 25 x 45 | 2.03 | 1.60 | 0.603 | 0.271 | EETED2S221CA |
| | 30 x 35 | 2.03 | 1.60 | 0.603 | 0.271 | EETED2S221DA |
| | 35 x 30 | 2.03 | 1.60 | 0.603 | 0.271 | EETED2S221EA |
| 270 | 25 x 50 | 2.40 | 2.03 | 0.491 | 0.221 | EETED2S271CA |
| | 30 x 40 | 2.40 | 2.03 | 0.491 | 0.221 | EETED2S271DA |
| | 35 x 30 | 2.40 | 2.03 | 0.491 | 0.221 | EETED2S271EA |
| 330 | 30 x 45 | 2.54 | 2.45 | 0.402 | 0.181 | EETED2S331DA |
| | 35 x 35 | 2.54 | 2.45 | 0.402 | 0.181 | EETED2S331EA |
| 390 | 30 x 50 | 2.73 | 2.64 | 0.340 | 0.153 | EETED2S391DA |
| | 35 x 40 | 2.73 | 2.64 | 0.340 | 0.153 | EETED2S391EA |
| 470 | 35 x 45 | 3.18 | 2.82 | 0.282 | 0.127 | EETED2S471EA |
| 450 VDC Working, 500 VDC Surge | | | | | | |
| 56 | 22 x 25 | 0.67 | 0.95 | 2.368 | 1.066 | EETED2W560BA |
| 68 | 22 x 30 | 0.76 | 1.08 | 1.950 | 0.878 | EETED2W680BA |
| | 25 x 25 | 0.76 | 1.08 | 1.950 | 0.878 | EETED2W680CA |
| 82 | 22 x 30 | 0.80 | 1.14 | 1.617 | 0.728 | EETED2W820BA |
| | 25 x 25 | 0.80 | 1.14 | 1.617 | 0.728 | EETED2W820CA |
| 100 | 22 x 35 | 0.91 | 1.30 | 1.326 | 0.597 | EETED2W101BA |
| | 25 x 30 | 0.91 | 1.30 | 1.326 | 0.597 | EETED2W101CA |
| 120 | 22 x 40 | 1.02 | 1.46 | 1.105 | 0.497 | EETED2W121BA |
| | 25 x 35 | 1.02 | 1.46 | 1.105 | 0.497 | EETED2W121CA |
| | 30 x 25 | 1.02 | 1.46 | 1.105 | 0.497 | EETED2W121DA |
| 150 | 22 x 45 | 1.07 | 1.53 | 0.884 | 0.398 | EETED2W151BA |
| | 25 x 40 | 1.07 | 1.53 | 0.884 | 0.398 | EETED2W151CA |
| | 30 x 30 | 1.07 | 1.53 | 0.884 | 0.398 | EETED2W151DA |
| | 35 x 25 | 1.07 | 1.53 | 0.884 | 0.398 | EETED2W151EA |
| 180 | 22 x 50 | 1.12 | 1.60 | 0.737 | 0.332 | EETED2W181BA |
| | 25 x 40 | 1.12 | 1.60 | 0.737 | 0.332 | EETED2W181CA |
| | 30 x 30 | 1.12 | 1.60 | 0.737 | 0.332 | EETED2W181DA |
| | 35 x 25 | 1.12 | 1.60 | 0.737 | 0.332 | EETED2W181EA |
| 220 | 25 x 45 | 1.42 | 2.03 | 0.603 | 0.271 | EETED2W221CA |
| | 30 x 35 | 1.42 | 2.03 | 0.603 | 0.271 | EETED2W221DA |
| | 35 x 30 | 1.42 | 2.03 | 0.603 | 0.271 | EETED2W221EA |
| 270 | 30 x 40 | 1.72 | 2.45 | 0.491 | 0.221 | EETED2W271DA |
| | 35 x 35 | 1.72 | 2.45 | 0.491 | 0.221 | EETED2W271EA |
| 330 | 30 x 50 | 1.85 | 2.64 | 0.402 | 0.181 | EETED2W331DA |
| | 35 x 40 | 1.85 | 2.64 | 0.402 | 0.181 | EETED2W331EA |
| 390 | 35 x 40 | 1.97 | 2.82 | 0.340 | 0.153 | EETED2W391EA |
| 470 | 35 x 50 | 2.47 | 3.53 | 0.282 | 0.127 | EETED2W471EA |