

# TXH Series

- Endurance with ripple current : 10,000 hours at 105°C
- Non solvent resistant type
- RoHS2 Compliant

TXH

Longer life  
LXM

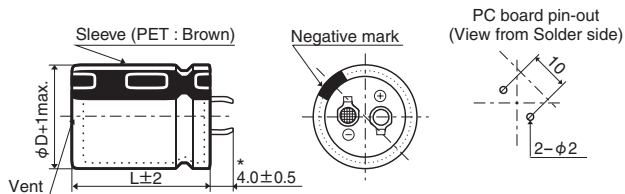


## SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                                                                                                                       |                                      |      |                 |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|-----------------|
| Category                                               |                                                                                                                                                                                                                                                                                       |                                      |      |                 |
| Temperature Range                                      | -25 to +105℃                                                                                                                                                                                                                                                                          |                                      |      |                 |
| Rated Voltage Range                                    | 200 to 450V <sub>dc</sub>                                                                                                                                                                                                                                                             |                                      |      |                 |
| Capacitance Tolerance                                  | ±20% (M) (at 20℃, 120Hz)                                                                                                                                                                                                                                                              |                                      |      |                 |
| Leakage Current                                        | I ≤ 3√CV<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃ after 5 minutes)                                                                                                                                                        |                                      |      |                 |
| Dissipation Factor (tan δ)                             | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                                                                      | 200 to 400V                          | 450V | (at 20℃, 120Hz) |
|                                                        | tan δ (Max.)                                                                                                                                                                                                                                                                          | 0.15                                 | 0.20 |                 |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                                                                      | 200 to 400V                          | 450V | (at 120Hz)      |
|                                                        | Z (-25℃)/Z (+20℃)                                                                                                                                                                                                                                                                     | 4                                    | 8    |                 |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 10,000 hours at 105℃.                                        |                                      |      |                 |
|                                                        | Capacitance change                                                                                                                                                                                                                                                                    | ≤ ±20% of the initial value          |      |                 |
|                                                        | D.F. (tan δ)                                                                                                                                                                                                                                                                          | ≤200% of the initial specified value |      |                 |
|                                                        | Leakage current                                                                                                                                                                                                                                                                       | ≤The initial specified value         |      |                 |
| Shelf Life                                             | The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4. |                                      |      |                 |
|                                                        | Capacitance change                                                                                                                                                                                                                                                                    | ≤ ±15% of the initial value          |      |                 |
|                                                        | D.F. (tan δ)                                                                                                                                                                                                                                                                          | ≤150% of the initial specified value |      |                 |
|                                                        | Leakage current                                                                                                                                                                                                                                                                       | ≤The initial specified value         |      |                 |

## DIMENSIONS [mm]

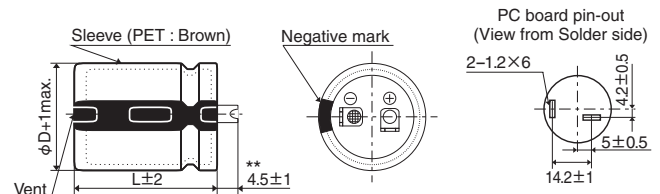
- Terminal Code : VS (φ30 to φ40) : Standard



\* φD=40mm : 3.5±0.5mm

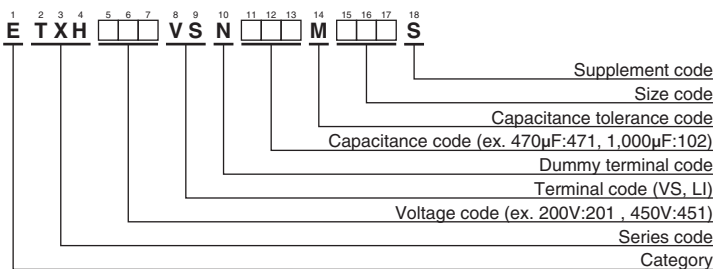
The standard design has no plastic disc.

- Terminal Code : LI (φ35, φ40)



\*\* φD=40mm : 4.0±1

## PART NUMBERING SYSTEM



Please refer to "Product code guide (snap-in type)"

◆STANDARD RATINGS

| WV<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Case size<br>φD×L(mm) | tan δ | Rated ripple<br>current<br>(Arms/<br>105°C, 120Hz) | Part No.           | WV<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Case size<br>φD×L(mm) | tan δ | Rated ripple<br>current<br>(Arms/<br>105°C, 120Hz) | Part No.           |
|--------------------------|-------------|-----------------------|-------|----------------------------------------------------|--------------------|--------------------------|-------------|-----------------------|-------|----------------------------------------------------|--------------------|
| 200                      | 560         | 30 × 30               | 0.15  | 1.50                                               | ETXH201VSN561MR30S | 400                      | 220         | 30 × 35               | 0.15  | 1.00                                               | ETXH401VSN221MR35S |
|                          | 680         | 30 × 35               | 0.15  | 1.70                                               | ETXH201VSN681MR35S |                          | 270         | 30 × 40               | 0.15  | 1.15                                               | ETXH401VSN271MR40S |
|                          | 820         | 30 × 40               | 0.15  | 2.00                                               | ETXH201VSN821MR40S |                          | 270         | 35 × 30               | 0.15  | 1.13                                               | ETXH401VSN271MA30S |
|                          | 820         | 35 × 30               | 0.15  | 2.00                                               | ETXH201VSN821MA30S |                          | 330         | 30 × 45               | 0.15  | 1.29                                               | ETXH401VSN331MR45S |
|                          | 1,000       | 30 × 45               | 0.15  | 2.20                                               | ETXH201VSN102MR45S |                          | 330         | 35 × 35               | 0.15  | 1.26                                               | ETXH401VSN331MA35S |
|                          | 1,000       | 35 × 35               | 0.15  | 2.20                                               | ETXH201VSN102MA35S |                          | 330         | 40 × 30               | 0.15  | 1.28                                               | ETXH401VSN331MB30S |
|                          | 1,000       | 40 × 30               | 0.15  | 2.17                                               | ETXH201VSN102MB30S |                          | 390         | 30 × 50               | 0.15  | 1.44                                               | ETXH401VSN391MR50S |
|                          | 1,200       | 35 × 40               | 0.15  | 2.40                                               | ETXH201VSN122MA40S |                          | 390         | 35 × 40               | 0.15  | 1.43                                               | ETXH401VSN391MA40S |
|                          | 1,200       | 40 × 35               | 0.15  | 2.45                                               | ETXH201VSN122MB35S |                          | 470         | 35 × 45               | 0.15  | 1.60                                               | ETXH401VSN471MA45S |
|                          | 1,500       | 35 × 50               | 0.15  | 2.81                                               | ETXH201VSN152MA50S |                          | 470         | 40 × 35               | 0.15  | 1.58                                               | ETXH401VSN471MB35S |
|                          | 1,500       | 40 × 40               | 0.15  | 2.79                                               | ETXH201VSN152MB40S |                          | 560         | 35 × 50               | 0.15  | 1.79                                               | ETXH401VSN561MA50S |
|                          | 1,800       | 40 × 50               | 0.15  | 3.24                                               | ETXH201VSN182MB50S |                          | 560         | 40 × 40               | 0.15  | 1.78                                               | ETXH401VSN561MB40S |
| 250                      | 390         | 30 × 30               | 0.15  | 1.30                                               | ETXH251VSN391MR30S | 450                      | 680         | 40 × 50               | 0.15  | 2.05                                               | ETXH401VSN681MB50S |
|                          | 470         | 30 × 35               | 0.15  | 1.42                                               | ETXH251VSN471MR35S |                          | 820         | 40 × 60               | 0.15  | 2.36                                               | ETXH401VSN821MB60S |
|                          | 560         | 35 × 30               | 0.15  | 1.58                                               | ETXH251VSN561MA30S |                          | 220         | 30 × 40               | 0.20  | 1.04                                               | ETXH451VSN221MR40S |
|                          | 680         | 30 × 45               | 0.15  | 1.80                                               | ETXH251VSN681MR45S |                          | 220         | 35 × 30               | 0.20  | 1.02                                               | ETXH451VSN221MA30S |
|                          | 680         | 35 × 35               | 0.15  | 1.76                                               | ETXH251VSN681MA35S |                          | 270         | 30 × 45               | 0.20  | 1.19                                               | ETXH451VSN271MR45S |
|                          | 820         | 30 × 50               | 0.15  | 2.03                                               | ETXH251VSN821MR50S |                          | 270         | 35 × 35               | 0.20  | 1.16                                               | ETXH451VSN271MA35S |
|                          | 820         | 35 × 40               | 0.15  | 2.01                                               | ETXH251VSN821MA40S |                          | 330         | 30 × 50               | 0.20  | 1.33                                               | ETXH451VSN331MR50S |
|                          | 820         | 40 × 30               | 0.15  | 1.96                                               | ETXH251VSN821MB30S |                          | 330         | 35 × 40               | 0.20  | 1.32                                               | ETXH451VSN331MA40S |
|                          | 1,000       | 35 × 45               | 0.15  | 2.30                                               | ETXH251VSN102MA45S |                          | 390         | 35 × 45               | 0.20  | 1.48                                               | ETXH451VSN391MA45S |
|                          | 1,000       | 40 × 35               | 0.15  | 2.27                                               | ETXH251VSN102MB35S |                          | 470         | 35 × 50               | 0.20  | 1.64                                               | ETXH451VSN471MA50S |
|                          | 1,200       | 35 × 50               | 0.15  | 2.55                                               | ETXH251VSN122MA50S |                          | 560         | 40 × 60               | 0.20  | 1.98                                               | ETXH451VSN561MB60S |
|                          | 1,200       | 40 × 40               | 0.15  | 2.53                                               | ETXH251VSN122MB40S |                          |             |                       |       |                                                    |                    |
|                          | 1,500       | 40 × 50               | 0.15  | 2.96                                               | ETXH251VSN152MB50S |                          |             |                       |       |                                                    |                    |
|                          | 1,800       | 40 × 60               | 0.15  | 3.39                                               | ETXH251VSN182MB60S |                          |             |                       |       |                                                    |                    |

◆RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

| Frequency(Hz)           | 50   | 120  | 300  | 1k   | 10k  | 50k  |
|-------------------------|------|------|------|------|------|------|
| 200, 250V <sub>dc</sub> | 0.81 | 1.00 | 1.17 | 1.32 | 1.45 | 1.50 |
| 400, 450V <sub>dc</sub> | 0.77 | 1.00 | 1.16 | 1.30 | 1.41 | 1.43 |

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

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| <a href="#"><u>ETXH401VSN271MA30S</u></a> | <a href="#"><u>ETXH401VSN681MB50S</u></a> | <a href="#"><u>ETXH251VSN102MB35S</u></a> | <a href="#"><u>ETXH451VSN471MA50S</u></a> |
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