

XH SERIES ▪ ULTRA FLAT, 1.4MM HEIGHT MULTILAYER TYPE

KEY FEATURES



- **MLPC - MULTILAYER CONDUCTIVE POLYMER** ▪ SMD type
- Endurance: 105°C ▪ 2 000 hours
- Ultra-low ESR and highest ripple current
- No voltage derating
- No dry-out effect guarantees extremely long life



SPECIFICATIONS

| Items | | Performance Characteristics |
|--|--------------|--|
| Operating Temperature Range | | -55 ~ +105°C |
| Rated Voltage Range | V_R | 2 ~ 25V DC |
| Surge Voltage | V_S | $V_S = 1.25 \cdot V_R$ (2 ~ 16VDC); $V_S = 1.15 \cdot V_R$ (20 ~ 25VDC) |
| Capacitance Range | C_R | 22 ~ 330μF |
| Cap. Tolerance | ΔC | ±20% (120Hz ▪ 20°C) |
| Leakage Current (20°C ▪ V_R applied) | I_{LEAK} | $\leq 0.1 \cdot C_R \cdot V_R$ (μA) [≤ 6.3 VDC]; $\leq 0.3 \cdot C_R \cdot V_R$ (μA) [> 6.3 VDC] After 2 minutes |
| Dissipation Factor % (20°C ▪ 120Hz) | $\tan\delta$ | Not to exceed the values shown in standard ratings |
| Equivalent Series Resistance (20°C ▪ 100kHz) | ESR | Not to exceed the values shown in standard ratings |

| Lifetime Test | | |
|--|----------------|---|
| Endurance 105°C (V_R applied) | Test | 2 000 hours |
| | $\Delta C/C_R$ | Within ±20% of the initial value |
| | $\tan\delta$ | < 2 times of the initial limit |
| | ESR | Less than 200% of the specified value |
| | I_{Leak} | < 3 times of the initial limit ≤ 6.3 VDC |
| | | Within the initial limit > 6.3 VDC |
| Moisture Resistance stored at 60°C (RH 90 ~ 95%) | Test | 500 hours |
| | $\Delta C/C_R$ | Within +70 to -20% of the initial value |
| | $\tan\delta$ | < 2 times of the initial limit |
| | ESR | Less than 200% of the specified value |
| | I_{Leak} | < 3 times of the initial limit ≤ 6.3 VDC |
| | | Within the initial limit > 6.3 VDC |

MULTIPLIER K_I for RIPPLE CURRENT vs. SURFACE TEMPERATURE T_S

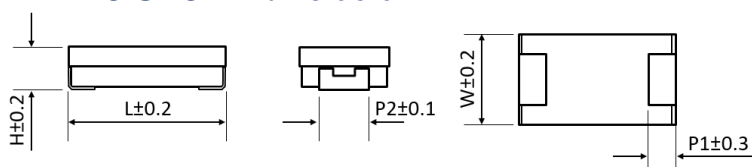
| Temperature T_S | | $T_S \leq 45^\circ\text{C}$ | $45^\circ\text{C} \leq T_S < 85^\circ\text{C}$ | $85^\circ\text{C} \leq T_S \leq 105^\circ\text{C}$ |
|-------------------|-----------------------------------|-----------------------------|--|--|
| K_I | $V_R: 2\text{V} \sim 6.3\text{V}$ | 1 | 0.7 | 0.25 |
| K_I | $V_R: 8\text{V} \sim 25\text{V}$ | 1 | 0.8 | 0.5 |

STANDARD RATINGS

Part number shows blister tape on plastic reel

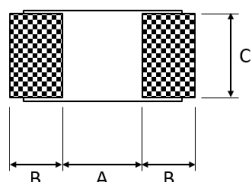
| V _R (V) | C _R (μF) | L (mm) | W (mm) | H (mm) | I _{LEAK} (μA, 2min) | tanδ +20°C ▪ 120Hz (%) | Max. ESR +20°C ▪ 100kHz (mΩ) | Max. I _R +45°C ▪ 100kHz (mA rms) | CapXon Part Number |
|-----------------------|------------------------|-----------|-----------|-----------|------------------------------------|---------------------------------|---------------------------------------|--|--------------------|
| 2 | 330 | 7.3 | 4.3 | 1.4 | 66 | 6 | 9 | 6300 | XH331M0027014P090 |
| | | | | | | | 6 | 7500 | XH331M0027014P060 |
| 2.5 | 330 | 7.3 | 4.3 | 1.4 | 83 | 6 | 9 | 6300 | XH331M2R57014P090 |
| | | | | | | | 6 | 7500 | XH331M2R57014P060 |
| 6.3 | 68 | 7.3 | 4.3 | 1.4 | 43 | 6 | 15 | 5100 | XH680M6R37014P150 |
| | | | | | | | 12 | 5600 | XH680M6R37014P120 |
| | 100 | | | | 63 | 6 | 15 | 5100 | XH101M6R37014P150 |
| | | | | | | | 12 | 5600 | XH101M6R37014P120 |
| 16 | 47 | 7.3 | 4.3 | 1.4 | 225 | 6 | 40 | 3200 | XH470M0167014P400 |
| 25 | 22 | 7.3 | 4.3 | 1.4 | 165 | 6 | 40 | 3200 | XH220M0257014P400 |

DIMENSIONS ▪ All dimensions in mm



| L | W | H | P1 | P2 |
|-----|-----|-----|-----|-----|
| 7.3 | 4.3 | 1.4 | 1.3 | 2.4 |

PAD LAYOUT ▪ All dimensions in mm



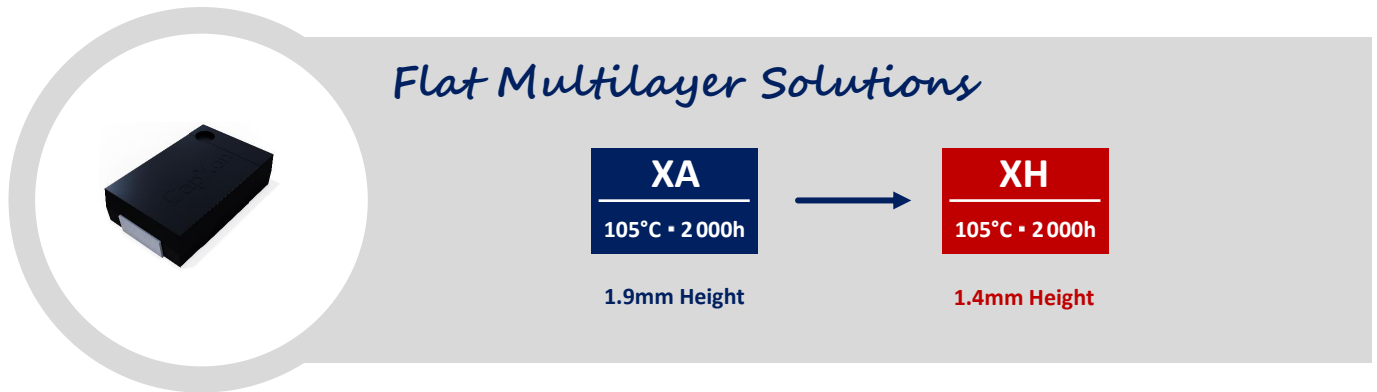
| A | B | C |
|-----|-----|---|
| 3.8 | 2.5 | 4 |

PRECAUTIONS, GUIDELINES AND PACKAGING INFORMATION

Unless otherwise agreed in individual specifications, all products are subject to our “General Precautions and Guidelines” as well as our “Packaging Information”. Please refer to the following links in the table.

| | | | |
|--|---------------------------------------|---------------------------|-----------------------------------|
| | | | |
| General Precautions & Guidelines | Packaging Information | 3D Models | Reliability Tests |

GROUP CHART



DISCLAIMER

All product related data (e.g. specification, statements and general information) are subject to change without any notice. It is necessary that the customer observes all product related technical / application information and handling instructions.

CapXon products are designed and manufactured according to severe quality and safety standards. Under no circumstance, CapXon warrants that any CapXon product is suitable for the purposes intended for your application, even CapXon knows the application. It is customer's duty and obligation to check and make sure that CapXon products are suitable for the purposes intended and select the correct and proper CapXon product. Customers are requested to perform a sufficient validation and reliability evaluation to assure needed safety level and reliability performance by suitable designs and to apply proper safeguards (e.g. redundancies, protective circuits).

Particular operating conditions (ambient temperature, ripple current, voltage, thermal resistance, etc.) as well as storage, production or assembly may affect the performance and the lifetime of the capacitor. Please consult CapXon for lifetime estimation, failure mode considerations or worst-case scenarios according to the product technology, product tolerances / deviations or change of the characteristics of the capacitor due to shipment, storage, handling, production and usage.

For aerospace or military application, life-saving, life-sustaining, safety critical applications or any application where failure may cause severe personal injury or death, please consult us before design-in the capacitor in your application.

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For further information, please visit our website www.capxongroup.com or contact CapXon directly.