

THB 2,000 Hr @ 85 °C, 85% RH, and Vr, AEC-Q200



The MXH series is constructed of Metallized Polypropylene Film encapsulated with self-extinguishing resin in plastic box of material meeting the UL 94V-0 requirements. The series is suitable for harsh environment conditions and is compliant with AEC-Q200 requirements. Applications include “across the line” class X2 and EMI, RFI suppression.

Highlights

- THB 2,000 Hr @ 85 °C, 85% RH, and Vr
- Automotive Grade (AEC-Q200)
- High stability of capacitance
- High operating temperature: 110 °C
- Self-healing property
- Flame-retardant plastic case and resin
- Suitable for harsh environmental conditions

Specifications

| | |
|--|---|
| Capacitance Range | 0.1 µF to 15 µF |
| Capacitance Tolerance | ±10 % (±20% optional) |
| Rated Voltage | 305 Vac, 630 Vdc |
| Operating Temperature Range | -40 °C to +110 °C (+85 °C to 110 °C, voltage derating factor of 1.35% per Deg. C) |
| Life Expectancy | 100,000h at rated voltage and hot spot temperature ≤85 °C |
| Voltage Between Terminals UTT | DC Voltage: 4.3Ur for 60s or $\sqrt{2}(2UR + 1000Vac)$ VDC for 2s, charge current must be 1A max. Withstanding DC voltage (cut-off current 10mA) Rise time 100V/s |
| Voltage Between Terminals and Case UTC | 2UR + 1500Vac, 60s at 20 °C |
| Dissipation Factor | 0.001 @ 1KHz @ 20 °C |
| Insulation Resistance | C ≤0.33µF at 100V; 1 min. > 15000 MΩ C >0.33µF at 100V; 1 min. > 5000 MΩ x µF |
| IEC Climatic Category | 40/110/56 IEC60068-1 |
| Damp Heat, Steady State | +40°C / 93% RH @ rated voltage for 1,344 hrs +24/-0 Capacitance Change Rate: (ΔC/C): ≤±5% DF Change (Δtgδ): ≤80*10 ⁻⁴ at 10 KHz (C ≤ 1µF) DF Change (Δtgδ): ≤50*10 ⁻⁴ at 1 KHz (C > 1µF) IR: ≥ 50% of initial limit |
| THB Rating | +85°C / 85% RH @ rated voltage for 2,000hrs +24/-0 Capacitance Change Rate: (ΔC/C): ≤±10% DF Change (Δtgδ): ≤240*10 ⁻⁴ at 10 KHz (C ≤ 1µF) DF Change (Δtgδ): ≤150*10 ⁻⁴ at 1 KHz (C > 1µF) IR: ≥ 50% of initial limit |
| Storage Conditions | -40 °C to +85 °C ≤24 months from date code, Average RH ≤70% |

RoHS Compliant

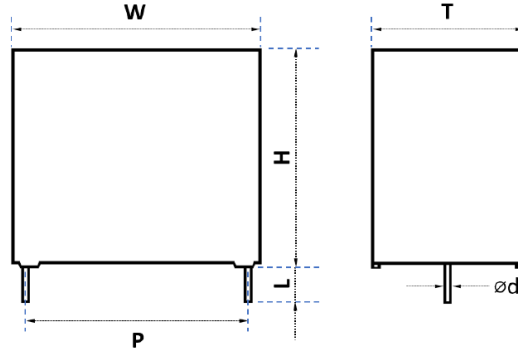
| Safety Agency | Standard | File Number |
|---------------|--|-------------|
| UL | UL 60384-14 CSA-E60384-14 | E171988 |
| VDE | IEC 60384-14:2013 IEC 60384-14:2013/ AMD1:2016 | 40055249 |
| CQC | IEC 60384-14 GB/T6346.14-2015 | Pending |

| Construction Details | |
|----------------------|---|
| Case Material | Plastic UL 94V-0 |
| Resin Material | Dry Resin UL 94V-0 |
| Terminal Material | Pitch ≤27.5mm = Copper Clad Steel Pitch ≥37.5mm = Tinned Copper Wire |

TYPE MXH, X2, EMI, RFI Suppression Capacitors, Harsh Environment

THB 2,000 Hr @ 85 °C, 85% RH, and Vr, AEC-Q200

Dimensions



2 pins

Size Code Table

| Size Code | Dimensions | | | | | | Pitch | | Lead Wire | | Lead |
|-----------|------------|--------|------|--------|------|--------|-------|--------|-----------|--------|-----------|
| | W | Tol. ± | H | Tol. ± | T | Tol. ± | P | Tol. ± | Ød | Tol. ± | Tol ±0.05 |
| E10 | 18 | 0.5 | 11 | 0.5 | 5 | 0.5 | 15 | 0.5 | 0.6 | 0.05 | 5 |
| E11 | 18 | 0.5 | 12 | 0.5 | 6 | 0.5 | 15 | 0.5 | 0.6 | 0.05 | 5 |
| E13 | 18 | 0.5 | 13.5 | 0.5 | 7.5 | 0.5 | 15 | 0.5 | 0.8 | 0.05 | 5 |
| E14 | 18 | 0.5 | 14.5 | 0.5 | 8.5 | 0.5 | 15 | 0.5 | 0.8 | 0.05 | 5 |
| E20 | 18 | 0.5 | 16 | 0.5 | 10 | 0.5 | 15 | 0.5 | 0.8 | 0.05 | 5 |
| E21 | 18 | 0.5 | 19 | 0.5 | 11 | 0.5 | 15 | 0.5 | 0.8 | 0.05 | 5 |
| G11 | 26 | 0.5 | 16.5 | 0.5 | 7 | 0.5 | 22.5 | 0.5 | 0.8 | 0.05 | 5 |
| G20 | 26 | 0.5 | 19 | 0.5 | 10 | 0.5 | 22.5 | 0.5 | 0.8 | 0.05 | 5 |
| G22 | 26 | 0.5 | 22 | 0.5 | 12 | 0.5 | 22.5 | 0.5 | 0.8 | 0.05 | 5 |
| G23 | 26 | 0.5 | 23 | 0.5 | 13 | 0.5 | 22.5 | 0.5 | 0.8 | 0.05 | 5 |
| G24 | 26 | 0.5 | 29.5 | 0.5 | 14.5 | 0.5 | 22.5 | 0.5 | 0.8 | 0.05 | 5 |
| H11 | 32 | 0.8 | 18 | 0.8 | 9 | 0.8 | 27.5 | 0.5 | 0.8 | 0.05 | 5 |
| H20 | 32 | 0.8 | 20 | 0.8 | 11 | 0.8 | 27.5 | 0.5 | 0.8 | 0.05 | 5 |
| H22 | 32 | 0.8 | 24.5 | 0.8 | 13 | 0.8 | 27.5 | 0.5 | 0.8 | 0.05 | 5 |
| H23 | 32 | 0.8 | 24 | 0.8 | 14 | 0.8 | 27.5 | 0.5 | 0.8 | 0.05 | 5 |
| H27 | 32 | 0.8 | 28 | 0.8 | 18 | 0.8 | 27.5 | 0.5 | 0.8 | 0.05 | 5 |
| H28 | 32 | 0.8 | 33 | 0.8 | 18 | 0.8 | 27.5 | 0.5 | 0.8 | 0.05 | 5 |
| H30 | 32 | 0.8 | 37 | 0.8 | 22 | 0.8 | 27.5 | 0.5 | 0.8 | 0.05 | 5 |
| N31 | 42 | 1 | 37 | 1 | 22 | 1 | 37.5 | 0.5 | 1 | 0.05 | 5 |
| N30 | 42 | 1 | 40 | 1 | 20 | 1 | 37.5 | 0.5 | 1 | 0.05 | 5 |
| N32 | 42 | 1 | 44 | 1 | 24 | 1 | 37.5 | 0.5 | 1 | 0.05 | 5 |
| N40 | 42 | 1 | 45 | 1 | 30 | 1 | 37.5 | 0.5 | 1 | 0.05 | 5 |

Part Numbering System

MXH Series

MXH

104 Capacitance

EIA Cap Code
104 = 0.1 µF
125 = 1.2 µF
156 = 15 µF

K Tolerance

K = ±10% Standard

305 Voltage

305 = 305 Vac

E10 Case

See Size Code Table

THB 2,000 Hr @ 85 °C, 85% RH, and Vr, AEC-Q200

Ratings

| Part Number | Cap (µF) | W mm | Dimensions | | P mm | Peak Current A | Surge Current A | dv/dt V/us | Lead Wire mm |
|----------------|----------|---------|------------|---------|---------|----------------------|-----------------------|---------------|--------------------|
| | | | H mm | T mm | | | | | |
| 305 VAC | | | | | | | | | |
| MXH104K305E10 | 0.1 | 18 | 11 | 5 | 15 | 40 | 120 | 400 | 0.6 |
| MXH154K305E11 | 0.15 | 18 | 12 | 6 | 15 | 60 | 180 | 400 | 0.6 |
| MXH224K305E13 | 0.22 | 18 | 13.5 | 7.5 | 15 | 88 | 264 | 400 | 0.8 |
| MXH224K305E14 | 0.22 | 18 | 14.5 | 8.5 | 15 | 88 | 264 | 400 | 0.8 |
| MXH224K305G11 | 0.22 | 26 | 16.5 | 7 | 22.5 | 44 | 132 | 200 | 0.8 |
| MXH274K305E14 | 0.27 | 18 | 14.5 | 8.5 | 15 | 108 | 324 | 400 | 0.8 |
| MXH334K305E14 | 0.33 | 18 | 14.5 | 8.5 | 15 | 132 | 396 | 400 | 0.8 |
| MXH334K305G11 | 0.33 | 26 | 16.5 | 7 | 22.5 | 66 | 198 | 200 | 0.8 |
| MXH474K305E20 | 0.47 | 18 | 16 | 10 | 15 | 188 | 564 | 400 | 0.8 |
| MXH474K305G11 | 0.47 | 26 | 16.5 | 7 | 22.5 | 94 | 282 | 200 | 0.8 |
| MXH564K305E21 | 0.56 | 18 | 19 | 11 | 15 | 224 | 672 | 400 | 0.8 |
| MXH564K305G20 | 0.56 | 26 | 19 | 10 | 22.5 | 112 | 336 | 200 | 0.8 |
| MXH684K305E21 | 0.68 | 18 | 19 | 11 | 15 | 272 | 816 | 400 | 0.8 |
| MXH684K305G20 | 0.68 | 26 | 19 | 10 | 22.5 | 136 | 408 | 200 | 0.8 |
| MXH684K305H11 | 0.68 | 32 | 18 | 9 | 27.5 | 102 | 306 | 150 | 0.8 |
| MXH824K305H11 | 0.82 | 32 | 18 | 9 | 27.5 | 123 | 369 | 150 | 0.8 |
| MXH105K305G20 | 1 | 26 | 19 | 10 | 22.5 | 200 | 600 | 200 | 0.8 |
| MXH105K305H20 | 1 | 32 | 20 | 11 | 27.5 | 150 | 450 | 150 | 0.8 |
| MXH125K305G22 | 1.2 | 26 | 22 | 12 | 22.5 | 240 | 720 | 200 | 0.8 |
| MXH155K305G23 | 1.5 | 26 | 23 | 13 | 22.5 | 300 | 900 | 200 | 0.8 |
| MXH155K305H22 | 1.5 | 32 | 24.5 | 13 | 27.5 | 225 | 675 | 150 | 0.8 |
| MXH185K305G24 | 1.8 | 26 | 29.5 | 14.5 | 22.5 | 360 | 1080 | 200 | 0.8 |
| MXH185K305H22 | 1.8 | 32 | 24.5 | 13 | 27.5 | 270 | 810 | 150 | 0.8 |
| MXH225K305G24 | 2.2 | 26 | 29.5 | 14.5 | 22.5 | 440 | 1320 | 200 | 0.8 |
| MXH225K305H23 | 2.2 | 32 | 24 | 14 | 27.5 | 330 | 990 | 150 | 0.8 |
| MXH275K305H27 | 2.7 | 32 | 28 | 18 | 27.5 | 405 | 1215 | 150 | 0.8 |
| MXH335K305H28 | 3.3 | 32 | 33 | 18 | 27.5 | 495 | 1485 | 150 | 0.8 |
| MXH395K305H28 | 3.9 | 32 | 33 | 18 | 27.5 | 585 | 1755 | 150 | 0.8 |
| MXH475K305H30 | 4.7 | 32 | 37 | 22 | 27.5 | 705 | 2115 | 150 | 0.8 |
| MXH685K305N31 | 6.8 | 42 | 37 | 22 | 37.5 | 680 | 2040 | 100 | 1 |
| MXH685K305N30 | 6.8 | 42 | 40 | 20 | 37.5 | 680 | 2040 | 100 | 1 |
| MXH106K305N32 | 10 | 42 | 44 | 24 | 37.5 | 1000 | 3000 | 100 | 1 |
| MXH126K305N40 | 12 | 42 | 45 | 30 | 37.5 | 1200 | 3600 | 100 | 1 |
| MXH156K305N40 | 15 | 42 | 45 | 30 | 37.5 | 1500 | 4500 | 100 | 1 |

Notice and Disclaimer: All product drawings, descriptions, specifications, statements, information and data (collectively, the "Information") in this datasheet or other publication are subject to change. The customer is responsible for checking, confirming and verifying the extent to which the Information contained in this datasheet or other publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without any guarantee, warranty, representation or responsibility of any kind, expressed or implied. Statements of suitability for certain applications are based on the knowledge that the Cornell Dubilier company providing such statements ("Cornell Dubilier") has of operating conditions that such Cornell Dubilier company regards as typical for such applications, but are not intended to constitute any guarantee, warranty or representation regarding any such matter – and Cornell Dubilier specifically and expressly disclaims any guarantee, warranty or representation concerning the suitability for a specific customer application, use, storage, transportation, or operating environment. The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by Cornell Dubilier with reference to the use of any Cornell Dubilier products is given gratis (unless otherwise specified by Cornell Dubilier), and Cornell Dubilier assumes no obligation or liability for the advice given or results obtained. Although Cornell Dubilier strives to apply the most stringent quality and safety standards regarding the design and manufacturing of its products, in light of the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies or other appropriate protective measures) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage. Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated in such warnings, cautions and notes, or that other safety measures may not be required.