

## 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 <sup>-4</sup> at 10 KHz (C ≤ 1µF) DF Change (Δtgδ): ≤50*10 <sup>-4</sup> 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 <sup>-4</sup> at 10 KHz (C ≤ 1µF) DF Change (Δtgδ): ≤150*10 <sup>-4</sup> 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

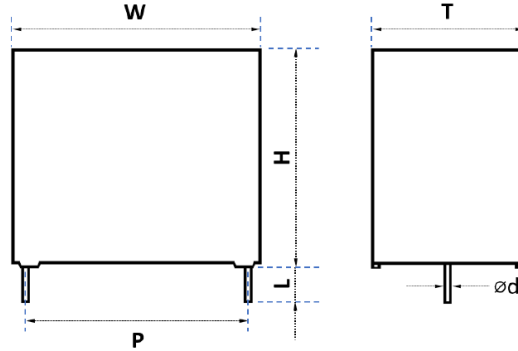
Safety Agency	Standard	File Number
UL	UL 60384-14 CSA-E60384-14	E171988
VDE	IEC 60384-14:2013 IEC 60384-14:2013/ AMD1:2016	40055249
CQC	IEC 60384-14 GB/T6346.14-2015	Pending

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

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## Dimensions



2 pins

## Size Code Table

Size	Dimensions						Pitch		Lead Wire		Lead
	Code	W	Tol. ±	H	Tol. ±	T	Tol. ±	P	Tol. ±	Ød	Tol. ±
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

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## 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					
<b>305 VAC</b>									
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

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