

- Snap Mount
- Large Capacitance
- High CV
- High Ripple
- +105°C Maximum Temperature



The KMH series capacitors are the standard 105°C, large capacitance, snap-in capacitors from United Chemi-Con. The load life for the KMH series is 2,000 hours at 105°C with the rated ripple current applied. The very high CV values and ripple current capabilities make these capacitors ideal for use in power supply filter circuits. The KMH capacitors are available in 2 or 4-pin snap-in styles and 3, 4 or 5-pin straight terminals with or without standoffs.

The standard KMH capacitors are non-solvent proof and are not recommended when halogenated cleaning solvents are used. Refer to the Mini-Glossary for recommended cleaning conditions.

## Summary of Specifications

- PC board 2 or 4-pin snap-in; optional 3, 4 or 5-pin straight terminals.
- Capacitance range: 47 to 220,000µF.
- Voltage range: 6.3 to 450VDC.
- Operating temperature range: -40°C to +105°C for 6.3 to 100V; -25°C to +105°C for 160 to 450V.
- Leakage current: 0.02CV(µA) or 3mA, whichever is smaller, after 5 minutes at +20°C.
- Standard capacitance tolerance: ±20%
- Nominal case size (D×L): 22×20mm to 40×80mm.
- Rated lifetime: 2,000 hours at +105°C with the rated ripple current applied.

# KMH Series

## KMH Specifications

Item	Characteristics																																													
Operating Temperature Range	- 40 to +105°C for 6.3 to 100VDC; - 25 to +105°C for 160 to 450VDC																																													
Rated Voltage Range	6.3 to 450VDC																																													
Capacitance Range	47 to 220,000 $\mu$ F																																													
Capacitance Tolerance	$\pm$ 20% (M) at +20°C, 120Hz																																													
Leakage Current	I = 0.02CV ( $\mu$ A) or 3mA, whichever is smaller, after 5 minutes at +20°C. Where I = Leakage current ( $\mu$ A), C = Nominal capacitance ( $\mu$ F) and V = Rated voltage (V)																																													
Dissipation Factor (Tan $\delta$ )	At +20°C, 120Hz <table border="1"> <thead> <tr> <th>Rated Voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63-100</th> <th>160-250</th> <th>315-450</th> </tr> </thead> <tbody> <tr> <td>Tan <math>\delta</math> (DF) See Note</td> <td>0.60</td> <td>0.50</td> <td>0.40</td> <td>0.30</td> <td>0.25</td> <td>0.20</td> <td>0.15</td> <td>0.10*</td> <td>0.15</td> </tr> </tbody> </table> <p>*0.15 maximum for 35mm and 40mm diameter. Note: For rated voltages <math>\leq</math> 63V, values are not valid for case sizes &gt;35mm in diameter or &gt;50mm in length.</p>	Rated Voltage (V)	6.3	10	16	25	35	50	63-100	160-250	315-450	Tan $\delta$ (DF) See Note	0.60	0.50	0.40	0.30	0.25	0.20	0.15	0.10*	0.15																									
Rated Voltage (V)	6.3	10	16	25	35	50	63-100	160-250	315-450																																					
Tan $\delta$ (DF) See Note	0.60	0.50	0.40	0.30	0.25	0.20	0.15	0.10*	0.15																																					
Low Temperature Characteristics	At 120Hz, impedance (Z) ratio between the -25°C or -40°C value and +20°C value shall not exceed the values given below. <table border="1"> <thead> <tr> <th>Rated Voltage (V)</th> <th>6.3-16</th> <th>25</th> <th>35</th> <th>50, 63</th> <th>80, 100</th> <th>160-400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>Z(-25°C) / Z(+20°C)</td> <td>4</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> <td>4</td> <td>8</td> </tr> <tr> <td>Z(-40°C) / Z(+20°C)</td> <td>15</td> <td>10</td> <td>8</td> <td>6</td> <td>5</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Rated Voltage (V)	6.3-16	25	35	50, 63	80, 100	160-400	450	Z(-25°C) / Z(+20°C)	4	3	3	2	2	4	8	Z(-40°C) / Z(+20°C)	15	10	8	6	5	-	-																					
Rated Voltage (V)	6.3-16	25	35	50, 63	80, 100	160-400	450																																							
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Ripple Current Multipliers <i>Refer to Section 4 of the Mini-Glossary for explanation of Ripple Current Multipliers.</i>	Ambient Temperature (°C) <table border="1"> <thead> <tr> <th>+45°C</th> <th>+60°C</th> <th>+70°C</th> <th>+85°C</th> <th>+105°C</th> </tr> </thead> <tbody> <tr> <td>2.64</td> <td>2.23</td> <td>2.12</td> <td>1.73</td> <td>1.00</td> </tr> </tbody> </table> Frequency (Hz) <table border="1"> <thead> <tr> <th>DC Rated Voltage</th> <th>50Hz</th> <th>120Hz</th> <th>300Hz</th> <th>1kHz</th> <th>10kHz</th> <th>100kHz</th> </tr> </thead> <tbody> <tr> <td>6.3-50V</td> <td>0.95</td> <td>1.00</td> <td>1.03</td> <td>1.05</td> <td>1.08</td> <td>1.08</td> </tr> <tr> <td>63-100V</td> <td>0.92</td> <td>1.00</td> <td>1.07</td> <td>1.13</td> <td>1.19</td> <td>1.20</td> </tr> <tr> <td>160-250V</td> <td>0.81</td> <td>1.00</td> <td>1.17</td> <td>1.32</td> <td>1.45</td> <td>1.50</td> </tr> <tr> <td>315-450V</td> <td>0.77</td> <td>1.00</td> <td>1.16</td> <td>1.30</td> <td>1.41</td> <td>1.43</td> </tr> </tbody> </table>	+45°C	+60°C	+70°C	+85°C	+105°C	2.64	2.23	2.12	1.73	1.00	DC Rated Voltage	50Hz	120Hz	300Hz	1kHz	10kHz	100kHz	6.3-50V	0.95	1.00	1.03	1.05	1.08	1.08	63-100V	0.92	1.00	1.07	1.13	1.19	1.20	160-250V	0.81	1.00	1.17	1.32	1.45	1.50	315-450V	0.77	1.00	1.16	1.30	1.41	1.43
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Load Life	The following specifications shall be satisfied when the capacitors are restored to +20°C after subjecting them to the DC rated voltage for 2,000 hours at +105°C with the rated ripple current applied. The sum of DC voltage and peak AC voltage must not exceed the full rated voltage of the capacitors. Capacitance change: $\leq \pm$ 20% of initial measured value Tan $\delta$ (DF) : $\leq$ 200% of initial specified value Leakage current : $\leq$ initial specified value																																													
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to +20°C after exposing them for 1,000 hours at +105°C without voltage applied. The rated voltage shall be applied to the capacitors for a minimum of 30 minutes, at least 24 hours and not more than 48 hours before the measurements. Capacitance change: $\leq \pm$ 20% of initial measured value Tan $\delta$ (DF) : $\leq$ 150% of initial specified value Leakage current : $\leq$ initial specified value																																													
Others	Satisfies characteristic W of JIS C5141																																													

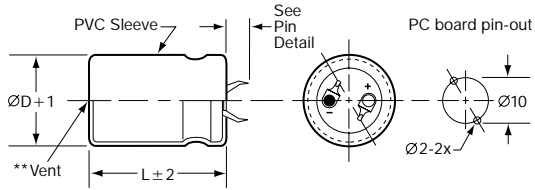
# KMH Series

## Diagram of Dimensions

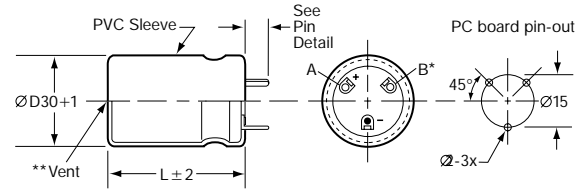
### Snap Mount

Unit: mm

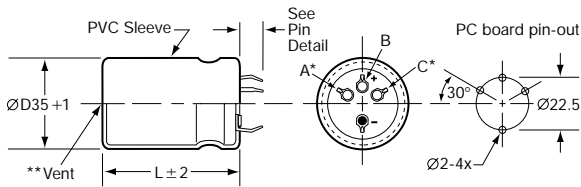
#### Types VN-T2 & VS-T2 $\varnothing 22$ - $\varnothing 35$



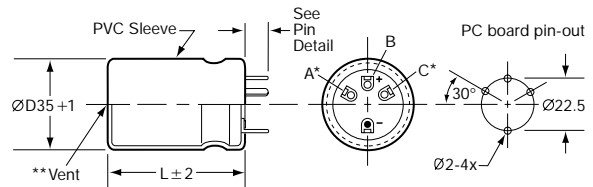
#### Type VR-T3 $\varnothing 30$



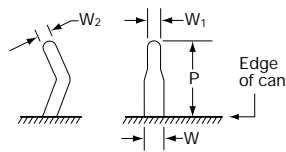
#### Types VN-T4 $\varnothing 35$ & $\varnothing 40$



#### Type VR-T4 $\varnothing 35$

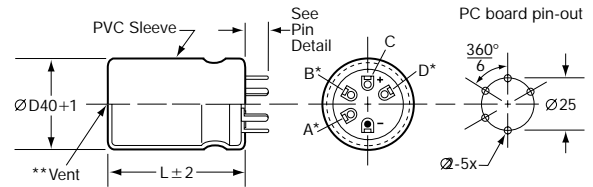


#### VN & VS Pin Dimensions



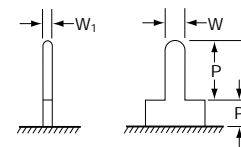
Type	P	W	W <sub>1</sub>	W <sub>2</sub>
VN-T2 $\varnothing 22$ - $\varnothing 35$	$5.8 \pm 1.0$	$1.5 \pm 0.2$	1.0	1.0
VN-T4 $\varnothing 35$ - $\varnothing 40$	$5.8 \pm 1.0$			
VS-T2 $\varnothing 22$ - $\varnothing 30$	$4.0 \pm 0.5$			
VS-T2 $\varnothing 35$	$3.5 \pm 0.5$			

#### Type VR-T5 $\varnothing 40$

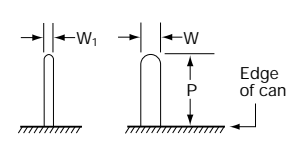


#### VR Pin Dimensions

##### Standoff Pin (Standard)\*\*\*



##### Straight Pin



Type	P	P <sub>1</sub>	W	W <sub>1</sub>
VR (Standoff Pin)	$3.75 \pm 1.0$	2.0 max.	$1.5 \pm 0.1$	0.7
VR (Straight Pin)	$5.50 \pm 1.0$	—		

#### CAUTION

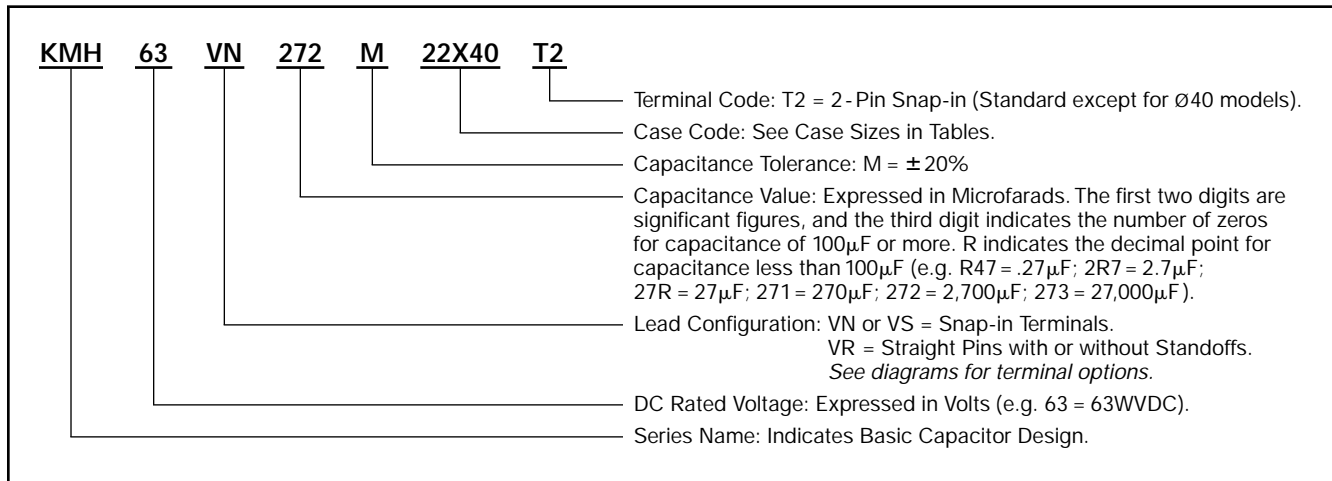
\* Use the blank terminals for mechanical support only. The blank terminals must not be connected to a solder trace on the PC board, but be electrically isolated from the negative or positive terminal.

\*\* Vent may be located either on the bottom or side of the can.

\*\*\* Add an "H" to the end of the part number for standoffs.

# KMH Series

**Part Numbering System for KMH Series** When ordering, always specify complete catalog number for KMH Series.



## Standard Voltage Ratings - VN & VR/Snap Mount

Rated Voltage (WVDC)	Capacitance ( $\mu$ F)	Catalog Part Number	Nominal Case Size* D x L (mm)	Maximum ESR ( $\Omega$ ) at +20°C, 120Hz	Maximum Ripple Current (A rms) at +105°C, 120Hz
6.3 Volts 8 Volts Surge	12,000	KMH6.3VN123M22X25T2	22 x 25	0.083	1.54
	15,000	KMH6.3VN153M22X25T2	22 x 25	0.066	1.72
	18,000	KMH6.3VN183M22X30T2	22 x 30	0.055	1.95
	22,000	KMH6.3VN223M22X35T2	22 x 35	0.045	2.23
	27,000	KMH6.3VN273M22X40T2	22 x 40	0.037	2.54
	33,000	KMH6.3VN333M22X45T2	22 x 45	0.03	2.88
	18,000	KMH6.3VN183M25X25T2	25.4 x 25	0.055	1.96
	22,000	KMH6.3VN223M25X30T2	25.4 x 30	0.045	2.25
	27,000	KMH6.3VN273M25X35T2	25.4 x 35	0.037	2.57
	33,000	KMH6.3VN333M25X40T2	25.4 x 40	0.03	2.93
	39,000	KMH6.3VN393M25X40T2	25.4 x 40	0.026	3.18
	47,000	KMH6.3VN473M25X50T2	25.4 x 50	0.021	3.69
	22,000	KMH6.3VN223M30X25T2	30 x 25	0.045	2.28
	27,000	KMH6.3VN273M30X25T2	30 x 25	0.037	2.52
	33,000	KMH6.3VN333M30X30T2	30 x 30	0.03	2.89
	39,000	KMH6.3VN393M30X35T2	30 x 35	0.026	3.26
	47,000	KMH6.3VN473M30X40T2	30 x 40	0.021	3.69
	56,000	KMH6.3VN563M30X45T2	30 x 45	0.018	4.16
	68,000	KMH6.3VN683M30X50T2	30 x 50	0.015	4.71
	33,000	KMH6.3VN333M35X25T2	35 x 25	0.03	2.93
	39,000	KMH6.3VN393M35X30T2	35 x 30	0.026	3.4
	47,000	KMH6.3VN473M35X30T2	35 x 30	0.021	3.73
	56,000	KMH6.3VN563M35X35T2	35 x 35	0.018	4.12
	68,000	KMH6.3VN683M35X40T2	35 x 40	0.015	4.69
	82,000	KMH6.3VN823M35X45T2	35 x 45	0.012	5.32
	120,000	KMH6.3VN124M35X63T2	35 x 63	0.011	6.9
	180,000	KMH6.3VN184M35X80T2	35 x 80	0.008	9.04
	56,000	KMH6.3VR563M40X25T5H	40 x 25	0.026	3.87
	68,000	KMH6.3VR683M40X30T5H	40 x 30	0.020	4.47
	82,000	KMH6.3VR823M40X35T5H	40 x 35	0.018	5.09
	100,000	KMH6.3VR104M40X40T5H	40 x 40	0.014	5.79
	150,000	KMH6.3VR154M40X50T5H	40 x 50	0.011	7.54
180,000	KMH6.3VR184M40X63T5H	40 x 63	0.009	8.82	
220,000	KMH6.3VR224M40X80T5H	40 x 80	0.008	10.61	

\*The case sizes in table are with no sleeve, refer to diagrams for case sizes with sleeve.

# KMH Series

## Standard Voltage Ratings - VN & VR/Snap Mount

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D x L (mm)	Maximum ESR (Ω) at +20°C, 120Hz	Maximum Ripple Current (A rms) at +105°C, 120Hz
<b>10 Volts</b> 13 Volts Surge	10,000	KMH10VN103M22X25T2	22 × 25	0.083	1.55
	12,000	KMH10VN123M22X30T2	22 × 30	0.069	1.77
	15,000	KMH10VN153M22X30T2	22 × 30	0.055	1.97
	18,000	KMH10VN183M22X35T2	22 × 35	0.046	2.21
	22,000	KMH10VN223M22X40T2	22 × 40	0.038	2.51
	27,000	KMH10VN273M22X50T2	22 × 50	0.031	2.93
	15,000	KMH10VN153M25X25T2	25.4 × 25	0.055	1.96
	18,000	KMH10VN183M25X30T2	25.4 × 30	0.046	2.23
	22,000	KMH10VN223M25X35T2	25.4 × 35	0.038	2.54
	27,000	KMH10VN273M25X40T2	25.4 × 40	0.031	2.9
	33,000	KMH10VN333M25X45T2	25.4 × 45	0.025	3.3
	39,000	KMH10VN393M25X50T2	25.4 × 50	0.021	3.68
	22,000	KMH10VN223M30X25T2	30 × 25	0.038	2.4
	27,000	KMH10VN273M30X30T2	30 × 30	0.031	2.87
	33,000	KMH10VN333M30X35T2	30 × 35	0.025	3.28
	39,000	KMH10VN393M30X40T2	30 × 40	0.021	3.69
	47,000	KMH10VN473M30X45T2	30 × 45	0.018	4.17
	56,000	KMH10VN563M30X50T2	30 × 50	0.015	4.68
	27,000	KMH10VN273M35X25T2	35 × 25	0.031	2.73
	33,000	KMH10VN333M35X30T2	35 × 30	0.025	3.16
	39,000	KMH10VN393M35X30T2	35 × 30	0.021	3.43
	47,000	KMH10VN473M35X35T2	35 × 35	0.018	3.76
	56,000	KMH10VN563M35X40T2	35 × 40	0.015	4.67
	68,000	KMH10VN683M35X50T2	35 × 50	0.012	5.46
	100,000	KMH10VN104M35X63T2	35 × 63	0.011	6.9
	120,000	KMH10VN124M35X80T2	35 × 80	0.009	8.08
	39,000	KMH10VR393M40X25T5H	40 × 25	0.027	3.54
	56,000	KMH10VR563M40X30T5H	40 × 30	0.021	4.44
	68,000	KMH10VR683M40X35T5H	40 × 35	0.018	5.08
	82,000	KMH10VR823M40X40T5H	40 × 40	0.015	5.75
120,000	KMH10VR124M40X50T5H	40 × 50	0.012	7.39	
150,000	KMH10VR154M40X63T5H	40 × 63	0.009	8.82	
180,000	KMH10VR184M40X80T5H	40 × 80	0.008	10.51	
<b>16 Volts</b> 20 Volts Surge	6,800	KMH16VN682M22X25T2	22 × 25	0.098	1.57
	10,000	KMH16VN103M22X30T2	22 × 30	0.066	1.97
	12,000	KMH16VN123M22X35T2	22 × 35	0.055	2.22
	15,000	KMH16VN153M22X40T2	22 × 40	0.044	2.55
	18,000	KMH16VN183M22X45T2	22 × 45	0.037	2.87
	10,000	KMH16VN103M25X25T2	25.4 × 25	0.066	1.97
	12,000	KMH16VN123M25X30T2	25.4 × 30	0.055	2.24
	15,000	KMH16VN153M25X35T2	25.4 × 35	0.044	2.58
	18,000	KMH16VN183M25X40T2	25.4 × 40	0.037	2.92
	22,000	KMH16VN223M25X45T2	25.4 × 45	0.03	3.32
	27,000	KMH16VN273M25X50T2	25.4 × 50	0.025	3.78
	12,000	KMH16VN123M30X25T2	30 × 25	0.055	2.45
	15,000	KMH16VN153M30X25T2	30 × 25	0.044	2.52
	18,000	KMH16VN183M30X30T2	30 × 30	0.037	2.88
	22,000	KMH16VN223M30X35T2	30 × 35	0.03	3.29
	27,000	KMH16VN273M30X40T2	30 × 40	0.025	3.77
	33,000	KMH16VN333M30X45T2	30 × 45	0.02	4.3
	39,000	KMH16VN393M30X50T2	30 × 50	0.017	4.81
	18,000	KMH16VN183M35X25T2	35 × 25	0.037	2.92
	22,000	KMH16VN223M35X25T2	35 × 25	0.03	3.23
	27,000	KMH16VN273M35X30T2	35 × 30	0.025	3.45
	33,000	KMH16VN333M35X35T2	35 × 35	0.02	4.26
	39,000	KMH16VN393M35X40T2	35 × 40	0.017	4.79
47,000	KMH16VN473M35X45T2	35 × 45	0.014	5.43	

\* The case sizes in table are with no sleeve, refer to diagrams for case sizes with sleeve.

# KMH Series

## Standard Voltage Ratings - VN & VR / Snap Mount

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D × L (mm)	Maximum ESR (Ω) at +20°C, 120Hz	Maximum Ripple Current (A rms) at +105°C, 120Hz
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<b>16 Volts 20 Volts Surge</b>	68,000	KMH16VN683M35X63T2	35 × 63	0.012	6.36
	100,000	KMH16VN104M35X80T2	35 × 80	0.009	8.25
	33,000	KMH16VR333M40X25T5H	40 × 25	0.027	3.64
	39,000	KMH16VR393M40X30T5H	40 × 30	0.021	4.15
	47,000	KMH16VR473M40X35T5H	40 × 35	0.018	4.72
	56,000	KMH16VR563M40X40T5H	40 × 40	0.015	5.31
	82,000	KMH16VR823M40X50T5H	40 × 50	0.012	6.83
	100,000	KMH16VR104M40X63T5H	40 × 63	0.010	8.05
	150,000	KMH16VR154M40X80T5H	40 × 80	0.008	10.73

<b>25 Volts 32 Volts Surge</b>	4,700	KMH25VN472M22X25T2	22 × 25	0.106	1.5
	5,600	KMH25VN562M22X25T2	22 × 25	0.089	1.63
	6,800	KMH25VN682M22X30T2	22 × 30	0.073	1.86
	8,200	KMH25VN822M22X35T2	22 × 35	0.061	2.11
	10,000	KMH25VN103M22X40T2	22 × 40	0.05	2.39
	12,000	KMH25VN123M22X45T2	22 × 45	0.041	2.69
	6,800	KMH25VN682M25X25T2	25.4 × 25	0.073	1.87
	8,200	KMH25VN822M25X30T2	25.4 × 30	0.061	2.12
	10,000	KMH25VN103M25X35T2	25.4 × 35	0.05	2.42
	12,000	KMH25VN123M25X40T2	25.4 × 40	0.041	2.74
	15,000	KMH25VN153M25X45T2	25.4 × 45	0.033	3.15
	18,000	KMH25VN183M25X50T2	25.4 × 50	0.028	3.54
	8,200	KMH25VN822M30X25T2	30 × 25	0.061	2.15
	10,000	KMH25VN103M30X25T2	30 × 25	0.05	2.37
	12,000	KMH25VN123M30X30T2	30 × 30	0.041	2.7
	15,000	KMH25VN153M30X35T2	30 × 35	0.033	3.13
	18,000	KMH25VN183M30X40T2	30 × 40	0.028	3.54
	22,000	KMH25VN223M30X45T2	30 × 45	0.023	4.04
	12,000	KMH25VN123M35X25T2	35 × 25	0.041	2.74
	15,000	KMH25VN153M35X30T2	35 × 30	0.033	3.27
	18,000	KMH25VN183M35X30T2	35 × 30	0.028	3.58
	22,000	KMH25VN223M35X35T2	35 × 35	0.023	3.64
	27,000	KMH25VN273M35X45T2	35 × 45	0.018	4.73
	33,000	KMH25VN333M35X50T2	35 × 50	0.015	5.39
	47,000	KMH25VN473M35X63T2	35 × 63	0.012	6.11
	68,000	KMH25VN683M35X80T2	35 × 80	0.009	7.86
	18,000	KMH25VR183M40X25T5H	40 × 25	0.029	3.11
	27,000	KMH25VR273M40X30T5H	40 × 30	0.021	3.98
	33,000	KMH25VR333M40X35T5H	40 × 35	0.018	4.57
	39,000	KMH25VR393M40X40T5H	40 × 40	0.015	5.12
	47,000	KMH25VR473M40X50T5H	40 × 50	0.013	5.97
	68,000	KMH25VR683M40X63T5H	40 × 63	0.010	7.67
82,000	KMH25VR823M40X80T5H	40 × 80	0.008	9.16	

<b>35 Volts 44 Volts Surge</b>	3,300	KMH35VN332M22X25T2	22 × 25	0.126	1.4
	3,900	KMH35VN392M22X30T2	22 × 30	0.106	1.57
	4,700	KMH35VN472M22X30T2	22 × 30	0.088	1.72
	5,600	KMH35VN562M22X35T2	22 × 35	0.074	1.95
	6,800	KMH35VN682M22X40T2	22 × 40	0.061	2.2
	8,200	KMH35VN822M22X50T2	22 × 50	0.051	2.55
	4,700	KMH35VN472M25X25T2	25.4 × 25	0.088	1.8
	5,600	KMH35VN562M25X30T2	25.4 × 30	0.074	1.96
	6,800	KMH35VN682M25X35T2	25.4 × 35	0.061	2.23
	8,200	KMH35VN822M25X40T2	25.4 × 40	0.051	2.53
	10,000	KMH35VN103M25X45T2	25.4 × 45	0.041	2.87
	12,000	KMH35VN123M25X50T2	25.4 × 50	0.035	3.24
	5,600	KMH35VN562M30X25T2	30 × 25	0.074	1.99
	6,800	KMH35VN682M30X25T2	30 × 25	0.061	2.19
	8,200	KMH35VN822M30X30T2	30 × 30	0.051	2.75

\* The case sizes in table are with no sleeve, refer to diagrams for case sizes with sleeve.

# KMH Series

## Standard Voltage Ratings - VN & VR/Snap Mount

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D × L (mm)	Maximum ESR (Ω) at +20°C, 120Hz	Maximum Ripple Current (A rms) at +105°C, 120Hz
<b>35 Volts 44 Volts Surge</b>	10,000	KMH35VN103M30X35T2	30 × 35	0.041	2.9
	12,000	KMH35VN123M30X40T2	30 × 40	0.035	3.23
	15,000	KMH35VN153M30X45T2	30 × 45	0.028	3.72
	8,200	KMH35VN822M35X25T2	35 × 25	0.051	2.75
	10,000	KMH35VN103M35X30T2	35 × 30	0.041	2.91
	12,000	KMH35VN123M35X30T2	35 × 30	0.035	2.99
	15,000	KMH35VN153M35X35T2	35 × 35	0.028	3.67
	18,000	KMH35VN183M35X40T2	35 × 40	0.023	4.37
	22,000	KMH35VN223M35X50T2	35 × 50	0.019	4.92
	33,000	KMH35VN333M35X63T2	35 × 63	0.012	5.60
	39,000	KMH35VN393M35X80T2	35 × 80	0.010	6.52
	12,000	KMH35VR123M40X25T5H	40 × 25	0.030	2.78
	18,000	KMH35VR183M40X30T5H	40 × 30	0.022	3.56
	22,000	KMH35VR223M40X35T5H	40 × 35	0.019	4.09
	27,000	KMH35VR273M40X40T5H	40 × 40	0.016	4.66
	33,000	KMH35VR333M40X50T5H	40 × 50	0.013	5.48
	47,000	KMH35VR473M40X63T5H	40 × 63	0.010	6.98
56,000	KMH35VR563M40X80T5H	40 × 80	0.008	8.29	
<b>50 Volts 63 Volts Surge</b>	1,800	KMH50VN182M22X25T2	22 × 25	0.184	1.33
	2,700	KMH50VN272M22X30T2	22 × 30	0.123	1.69
	3,300	KMH50VN332M22X35T2	22 × 35	0.10	1.93
	3,900	KMH50VN392M22X40T2	22 × 40	0.085	2.16
	4,700	KMH50VN472M22X45T2	22 × 45	0.071	2.43
	5,600	KMH50VN562M22X50T2	22 × 50	0.059	2.75
	2,700	KMH50VN272M25X25T2	25.4 × 25	0.123	1.7
	3,300	KMH50VN332M25X30T2	25.4 × 30	0.10	1.85
	3,900	KMH50VN392M25X35T2	25.4 × 35	0.085	2.18
	4,700	KMH50VN472M25X35T2	25.4 × 35	0.071	2.39
	5,600	KMH50VN562M25X40T2	25.4 × 40	0.059	2.7
	6,800	KMH50VN682M25X50T2	25.4 × 50	0.049	3.3
	3,900	KMH50VN392M30X25T2	30 × 25	0.085	1.95
	4,700	KMH50VN472M30X30T2	30 × 30	0.071	2.25
	5,600	KMH50VN562M30X35T2	30 × 35	0.059	2.76
	6,800	KMH50VN682M30X40T2	30 × 40	0.049	3.3
	8,200	KMH50VN822M30X45T2	30 × 45	0.04	3.6
	10,000	KMH50VN103M30X50T2	30 × 50	0.033	4.04
	4,700	KMH50VN472M35X25T2	35 × 25	0.071	2.48
	5,600	KMH50VN562M35X25T2	35 × 25	0.059	2.7
	6,800	KMH50VN682M35X30T2	35 × 30	0.049	3.25
	8,200	KMH50VN822M35X35T2	35 × 35	0.04	3.55
	10,000	KMH50VN103M35X40T2	35 × 40	0.033	4.03
	12,000	KMH50VN123M35X45T2	35 × 45	0.028	4.55
	18,000	KMH50VN183M35X63T2	35 × 63	0.014	4.63
	27,000	KMH50VN273M35X80T2	35 × 80	0.011	6.06
	8,200	KMH50VR822M40X25T5H	40 × 25	0.035	2.57
10,000	KMH50VR103M40X30T5H	40 × 30	0.027	2.97	
12,000	KMH50VR123M40X35T5H	40 × 35	0.023	3.37	
15,000	KMH50VR153M40X40T5H	40 × 40	0.019	3.89	
22,000	KMH50VR223M40X50T5H	40 × 50	0.015	5.0	
27,000	KMH50VR273M40X63T5H	40 × 63	0.012	5.92	
39,000	KMH50VR393M40X80T5H	40 × 80	0.009	7.74	
<b>63 Volts 79 Volts Surge</b>	1,200	KMH63VN122M22X25T2	22 × 25	0.207	1.19
	1,500	KMH63VN152M22X25T2	22 × 25	0.166	1.33
	1,800	KMH63VN182M22X30T2	22 × 30	0.138	1.51
	2,200	KMH63VN222M22X35T2	22 × 35	0.113	1.73
	2,700	KMH63VN272M22X40T2	22 × 40	0.092	1.97
	3,300	KMH63VN332M22X50T2	22 × 50	0.075	2.29

\* The case sizes in table are with no sleeve, refer to diagrams for case sizes with sleeve.

# KMH Series

## Standard Voltage Ratings - VN & VR / Snap Mount

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D × L (mm)	Maximum ESR (Ω) at +20°C, 120Hz	Maximum Ripple Current (A rms) at +105°C, 120Hz
<b>63 Volts</b> 79 Volts Surge	1,800	KMH63VN182M25X25T2	25.4 × 25	0.138	1.52
	2,200	KMH63VN222M25X30T2	25.4 × 30	0.113	1.74
	2,700	KMH63VN272M25X35T2	25.4 × 35	0.092	1.99
	3,300	KMH63VN332M25X40T2	25.4 × 40	0.075	2.27
	3,900	KMH63VN392M25X45T2	25.4 × 45	0.064	2.54
	4,700	KMH63VN472M25X50T2	25.4 × 50	0.053	2.86
	2,700	KMH63VN272M30X25T2	30 × 25	0.092	1.76
	3,300	KMH63VN332M30X30T2	30 × 30	0.075	2.24
	3,900	KMH63VN392M30X35T2	30 × 35	0.064	2.55
	4,700	KMH63VN472M30X40T2	30 × 40	0.053	2.86
	5,600	KMH63VN562M30X45T2	30 × 45	0.044	3.22
	6,800	KMH63VN682M30X50T2	30 × 50	0.037	3.65
	3,300	KMH63VN332M35X25T2	35 × 25	0.075	2.06
	3,900	KMH63VN392M35X25T2	35 × 25	0.064	2.24
	4,700	KMH63VN472M35X30T2	35 × 30	0.053	2.79
	5,600	KMH63VN562M35X35T2	35 × 35	0.044	3.19
	6,800	KMH63VN682M35X40T2	35 × 40	0.037	3.64
	8,200	KMH63VN822M35X45T2	35 × 45	0.03	3.9
	10,000	KMH63VN103M35X50T2	35 × 50	0.025	4.4
	15,000	KMH63VN153M35X63T2	35 × 63	0.014	4.88
	18,000	KMH63VN183M35X80T2	35 × 80	0.012	5.72
	5,600	KMH63VR562M40X25T5H	40 × 25	0.038	2.45
	8,200	KMH63VR822M40X30T5H	40 × 30	0.028	3.1
	10,000	KMH63VR103M40X35T5H	40 × 35	0.026	3.56
	12,000	KMH63VR123M40X40T5H	40 × 40	0.020	4.01
	15,000	KMH63VR153M40X50T5H	40 × 50	0.016	4.77
	18,000	KMH63VR183M40X63T5H	40 × 63	0.013	5.58
27,000	KMH63VR273M40X80T5H	40 × 80	0.010	7.43	
<b>80 Volts</b> 100 Volts Surge	820	KMH80VN821M22X25T2	22 × 25	0.303	1.11
	1,000	KMH80VN102M22X25T2	22 × 25	0.249	1.22
	1,200	KMH80VN122M22X30T2	22 × 30	0.207	1.38
	1,500	KMH80VN152M22X35T2	22 × 35	0.166	1.59
	1,800	KMH80VN182M22X40T2	22 × 40	0.138	1.8
	2,200	KMH80VN222M22X45T2	22 × 45	0.113	2.04
	1,200	KMH80VN122M25X25T2	25.4 × 25	0.207	1.39
	1,500	KMH80VN152M25X30T2	25.4 × 30	0.166	1.61
	1,800	KMH80VN182M25X30T2	25.4 × 30	0.138	1.76
	2,200	KMH80VN222M25X35T2	25.4 × 35	0.113	2.01
	2,700	KMH80VN272M25X45T2	25.4 × 45	0.092	2.36
	3,300	KMH80VN332M25X50T2	25.4 × 50	0.075	2.68
	1,800	KMH80VN182M30X25T2	30 × 25	0.138	1.65
	2,200	KMH80VN222M30X30T2	30 × 30	0.113	2.05
	2,700	KMH80VN272M30X35T2	30 × 35	0.092	2.35
	3,300	KMH80VN332M30X40T2	30 × 40	0.075	2.68
	3,900	KMH80VN392M30X45T2	30 × 45	0.064	3.0
	4,700	KMH80VN472M30X50T2	30 × 50	0.053	3.39
	2,200	KMH80VN222M35X25T2	35 × 25	0.113	2.07
	2,700	KMH80VN272M35X25T2	35 × 25	0.092	2.29
	3,300	KMH80VN332M35X30T2	35 × 30	0.075	2.45
	3,900	KMH80VN392M35X35T2	35 × 35	0.064	2.98
	4,700	KMH80VN472M35X40T2	35 × 40	0.053	3.38
	5,600	KMH80VN562M35X45T2	35 × 45	0.044	3.8
	6,800	KMH80VN682M35X50T2	35 × 50	0.037	3.9
	8,200	KMH80VN822M35X63T2	35 × 63	0.030	4.42
	12,000	KMH80VN123M35X80T2	35 × 80	0.021	5.72
3,900	KMH80VR392M40X25T5H	40 × 25	0.064	2.5	
4,700	KMH80VR472M40X30T5H	40 × 30	0.053	2.88	

\*The case sizes in table are with no sleeve, refer to diagrams for case sizes with sleeve.

# KMH Series

## Standard Voltage Ratings - VN & VR/Snap Mount

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D × L (mm)	Maximum ESR (Ω) at +20°C, 120Hz	Maximum Ripple Current (A rms) at +105°C, 120Hz
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<b>80 Volts 100 Volts Surge</b>	5,600	KMH80VR562M40X35T5H	40 × 35	0.044	3.26
	6,800	KMH80VR682M40X40T5H	40 × 40	0.037	3.7
	10,000	KMH80VR103M40X50T5H	40 × 50	0.025	4.77
	12,000	KMH80VR123M40X63T5H	40 × 63	0.021	5.58
	18,000	KMH80VR183M40X80T5H	40 × 80	0.014	7.43

<b>100 Volts 125 Volts Surge</b>	560	KMH100VN561M22X25T2	22 × 25	0.444	1.05
	820	KMH100VN821M22X30T2	22 × 30	0.303	1.32
	1,000	KMH100VN102M22X35T2	22 × 35	0.249	1.5
	1,200	KMH100VN122M22X40T2	22 × 40	0.207	1.69
	1,500	KMH100VN152M22X45T2	22 × 45	0.166	1.94
	820	KMH100VN821M25X25T2	25.4 × 25	0.303	1.33
	1,000	KMH100VN102M25X30T2	25.4 × 30	0.249	1.51
	1,200	KMH100VN122M25X35T2	25.4 × 35	0.207	1.71
	1,500	KMH100VN152M25X40T2	25.4 × 40	0.166	1.98
	1,800	KMH100VN182M25X45T2	25.4 × 45	0.138	2.23
	2,200	KMH100VN222M25X50T2	25.4 × 50	0.113	2.53
	1,200	KMH100VN122M30X25T2	30 × 25	0.207	1.68
	1,500	KMH100VN152M30X30T2	30 × 30	0.166	1.95
	1,800	KMH100VN182M30X35T2	30 × 35	0.138	2.5
	2,200	KMH100VN222M30X40T2	30 × 40	0.113	2.7
	2,700	KMH100VN272M30X45T2	30 × 45	0.092	2.88
	3,300	KMH100VN332M30X50T2	30 × 50	0.075	3.28
	1,500	KMH100VN152M35X25T2	35 × 25	0.166	1.98
	1,800	KMH100VN182M35X25T2	35 × 25	0.138	2.17
	2,200	KMH100VN222M35X30T2	35 × 30	0.113	2.5
	2,700	KMH100VN272M35X35T2	35 × 35	0.092	2.86
	3,300	KMH100VN332M35X40T2	35 × 40	0.075	3.27
	3,900	KMH100VN392M35X45T2	35 × 45	0.064	3.67
	4,700	KMH100VN472M35X50T2	35 × 50	0.053	3.8
	5,600	KMH100VN562M35X63T2	35 × 63	0.044	4.08
	6,800	KMH100VN682M35X80T2	35 × 80	0.037	4.81
	2,200	KMH100VR222M40X25T5H	40 × 25	0.113	2.1
	2,700	KMH100VR272M40X30T5H	40 × 30	0.092	2.44
	3,300	KMH100VR332M40X35T5H	40 × 35	0.075	2.8
	4,700	KMH100VR472M40X40T5H	40 × 40	0.053	3.44
	5,600	KMH100VR562M40X50T5H	40 × 50	0.044	3.99
	8,200	KMH100VR822M40X63T5H	40 × 63	0.030	5.16
	10,000	KMH100VR103M40X80T5H	40 × 80	0.025	6.19

<b>160 Volts 200 Volts Surge</b>	220	KMH160VN221M22X20T2	22 × 20	0.753	0.8
	270	KMH160VN271M22X25T2	22 × 25	0.614	1.09
	330	KMH160VN331M22X25T2	22 × 25	0.502	1.2
	390	KMH160VN391M22X30T2	22 × 30	0.425	1.3
	470	KMH160VN471M22X35T2	22 × 35	0.353	1.4
	560	KMH160VN561M22X40T2	22 × 40	0.296	1.5
	680	KMH160VN681M22X45T2	22 × 45	0.244	1.71
	820	KMH160VN821M22X50T2	22 × 50	0.202	1.93
	330	KMH160VN331M25X20T2	25.4 × 20	0.502	1.02
	390	KMH160VN391M25X25T2	25.4 × 25	0.425	1.28
	470	KMH160VN471M25X25T2	25.4 × 25	0.353	1.41
	560	KMH160VN561M25X30T2	25.4 × 30	0.296	1.51
	680	KMH160VN681M25X35T2	25.4 × 35	0.244	1.7
	820	KMH160VN821M25X40T2	25.4 × 40	0.202	2.01
	1,000	KMH160VN102M25X45T2	25.4 × 45	0.166	2.2
	1,200	KMH160VN122M25X50T2	25.4 × 50	0.138	2.45
	390	KMH160VN391M30X20T2	30 × 20	0.425	1.17
	470	KMH160VN471M30X20T2	30 × 20	0.353	1.28
	560	KMH160VN561M30X25T2	30 × 25	0.296	1.56

\* The case sizes in table are with no sleeve, refer to diagrams for case sizes with sleeve.

# KMH Series

## Standard Voltage Ratings - VN & VR / Snap Mount

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D × L (mm)	Maximum ESR (Ω) at +20°C, 120Hz	Maximum Ripple Current (A rms) at +105°C, 120Hz
160 Volts 200 Volts Surge	680	KMH160VN681M30X25T2	30 × 25	0.244	1.72
	820	KMH160VN821M30X30T2	30 × 30	0.202	2.0
	1,000	KMH160VN102M30X35T2	30 × 35	0.166	2.22
	1,200	KMH160VN122M30X40T2	30 × 40	0.138	2.44
	1,500	KMH160VN152M30X45T2	30 × 45	0.111	2.82
	1,800	KMH160VN182M30X50T2	30 × 50	0.092	3.31
	560	KMH160VN561M35X20T2	35 × 20	0.444	1.54
	680	KMH160VN681M35X20T2	35 × 20	0.366	1.7
	820	KMH160VN821M35X25T2	35 × 25	0.303	1.91
	1,000	KMH160VN102M35X25T2	35 × 25	0.249	2.11
	1,200	KMH160VN122M35X30T2	35 × 30	0.207	2.44
	1,500	KMH160VN152M35X35T2	35 × 35	0.166	2.5
	1,800	KMH160VN182M35X45T2	35 × 45	0.138	3.31
	2,200	KMH160VN222M35X50T2	35 × 50	0.113	3.77
	3,300	KMH160VN332M35X63T2	35 × 63	0.075	3.96
	3,900	KMH160VN392M35X80T2	35 × 80	0.064	4.61
	1,200	KMH160VR122M40X25T5H	40 × 25	0.207	1.96
	1,800	KMH160VR182M40X30T5H	40 × 30	0.138	2.52
	2,200	KMH160VR222M40X35T5H	40 × 35	0.113	2.89
	2,700	KMH160VR272M40X40T5H	40 × 40	0.092	3.3
3,300	KMH160VR332M40X50T5H	40 × 50	0.075	3.87	
4,700	KMH160VR472M40X63T5H	40 × 63	0.053	4.94	
5,600	KMH160VR562M40X80T5H	40 × 80	0.044	5.86	
180 Volts 225 Volts Surge	180	KMH180VN181M22X20T2	22 × 20	0.921	0.73
	220	KMH180VN221M22X20T2	22 × 20	0.753	0.8
	270	KMH180VN271M22X25T2	22 × 25	0.614	0.96
	330	KMH180VN331M22X25T2	22 × 25	0.502	1.06
	390	KMH180VN391M22X30T2	22 × 30	0.425	1.3
	470	KMH180VN471M22X35T2	22 × 35	0.353	1.35
	560	KMH180VN561M22X40T2	22 × 40	0.296	1.51
	680	KMH180VN681M22X45T2	22 × 45	0.244	1.71
	820	KMH180VN821M22X50T2	22 × 50	0.202	1.97
	270	KMH180VN271M25X20T2	25.4 × 20	0.614	0.92
	330	KMH180VN331M25X25T2	25.4 × 25	0.502	1.2
	390	KMH180VN391M25X25T2	25.4 × 25	0.425	1.3
	470	KMH180VN471M25X30T2	25.4 × 30	0.353	1.4
	560	KMH180VN561M25X35T2	25.4 × 35	0.296	1.53
	680	KMH180VN681M25X40T2	25.4 × 40	0.244	1.74
	820	KMH180VN821M25X45T2	25.4 × 45	0.202	1.97
	1,000	KMH180VN102M25X50T2	25.4 × 50	0.166	2.23
	390	KMH180VN391M30X20T2	30 × 20	0.425	1.17
	470	KMH180VN471M30X25T2	30 × 25	0.353	1.38
	560	KMH180VN561M30X25T2	30 × 25	0.296	1.51
	680	KMH180VN681M30X30T2	30 × 30	0.244	1.72
	820	KMH180VN821M30X35T2	30 × 35	0.202	2.0
	1,000	KMH180VN102M30X40T2	30 × 40	0.166	2.24
	1,200	KMH180VN122M30X45T2	30 × 45	0.138	2.52
	1,500	KMH180VN152M30X50T2	30 × 50	0.111	2.89
	470	KMH180VN471M35X20T2	35 × 20	0.529	1.41
	560	KMH180VN561M35X20T2	35 × 20	0.444	1.53
	680	KMH180VN681M35X25T2	35 × 25	0.366	1.74
	820	KMH180VN821M35X25T2	35 × 25	0.303	1.91
	1,000	KMH180VN102M35X30T2	35 × 30	0.249	2.26
	1,200	KMH180VN122M35X35T2	35 × 35	0.207	2.5
	1,500	KMH180VN152M35X40T2	35 × 40	0.166	2.89
1,800	KMH180VN182M35X40T2	35 × 40	0.138	3.17	
2,200	KMH180VN222M35X50T2	35 × 50	0.113	3.6	

\*The case sizes in table are with no sleeve, refer to diagrams for case sizes with sleeve.

# KMH Series

## Standard Voltage Ratings - VN & VR/Snap Mount

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D x L (mm)	Maximum ESR (Ω) at +20°C, 120Hz	Maximum Ripple Current (A rms) at +105°C, 120Hz
<b>180 Volts</b> 225 Volts Surge	2,700	KMH180VN272M35X63T2	35 × 63	0.092	4.01
	3,300	KMH180VN332M35X80T2	35 × 80	0.075	4.74
	1,000	KMH180VR102M40X25T5H	40 × 25	0.249	2.01
	1,500	KMH180VR152M40X30T5H	40 × 30	0.166	2.57
	1,800	KMH180VR182M40X35T5H	40 × 35	0.138	2.92
	2,200	KMH180VR222M40X40T5H	40 × 40	0.113	3.33
	2,700	KMH180VR272M40X50T5H	40 × 50	0.092	3.92
	3,900	KMH180VR392M40X63T5H	40 × 63	0.064	5.03
4,700	KMH180VR472M40X80T5H	40 × 80	0.053	6.01	
<b>200 Volts</b> 250 Volts Surge	150	KMH200VN151M22X20T2	22 × 20	1.105	0.66
	180	KMH200VN181M22X20T2	22 × 20	0.921	0.72
	220	KMH200VN221M22X25T2	22 × 25	0.753	0.79
	270	KMH200VN271M22X25T2	22 × 25	0.614	0.87
	330	KMH200VN331M22X30T2	22 × 30	0.502	1.2
	390	KMH200VN391M22X35T2	22 × 35	0.425	1.31
	470	KMH200VN471M22X40T2	22 × 40	0.353	1.4
	560	KMH200VN561M22X45T2	22 × 45	0.296	1.56
	680	KMH200VN681M22X50T2	22 × 50	0.244	1.74
	220	KMH200VN221M25X20T2	25.4 × 20	0.753	0.83
	270	KMH200VN271M25X25T2	25.4 × 25	0.614	1.09
	330	KMH200VN331M25X25T2	25.4 × 25	0.502	1.21
	390	KMH200VN391M25X25T2	25.4 × 25	0.425	1.31
	470	KMH200VN471M25X30T2	25.4 × 30	0.353	1.41
	560	KMH200VN561M25X35T2	25.4 × 35	0.296	1.53
	680	KMH200VN681M25X40T2	25.4 × 40	0.244	1.74
	820	KMH200VN821M25X50T2	25.4 × 50	0.202	2.04
	330	KMH200VN331M30X20T2	30 × 20	0.502	1.08
	390	KMH200VN391M30X25T2	30 × 25	0.425	1.37
	470	KMH200VN471M30X25T2	30 × 25	0.353	1.5
	560	KMH200VN561M30X25T2	30 × 25	0.296	1.63
	680	KMH200VN681M30X30T2	30 × 30	0.244	1.74
	820	KMH200VN821M30X35T2	30 × 35	0.202	2.0
	1,000	KMH200VN102M30X45T2	30 × 45	0.166	2.3
	1,200	KMH200VN122M30X50T2	30 × 50	0.138	2.6
	470	KMH200VN471M35X20T2	35 × 20	0.529	1.41
	560	KMH200VN561M35X25T2	35 × 25	0.444	1.56
	680	KMH200VN681M35X25T2	35 × 25	0.366	1.72
	820	KMH200VN821M35X30T2	35 × 30	0.303	2.04
	1,000	KMH200VN102M35X35T2	35 × 35	0.249	2.3
	1,200	KMH200VN122M35X40T2	35 × 40	0.207	2.65
	1,500	KMH200VN152M35X45T2	35 × 45	0.166	3.08
1,800	KMH200VN182M35X50T2	35 × 50	0.138	3.47	
2,200	KMH200VN222M35X63T2	35 × 63	0.113	3.62	
3,300	KMH200VN332M35X80T2	35 × 80	0.075	4.74	
1,000	KMH200VR102M40X25T5H	40 × 25	0.249	2.01	
1,200	KMH200VR122M40X30T5H	40 × 30	0.207	2.3	
1,500	KMH200VR152M40X35T5H	40 × 35	0.166	2.67	
1,800	KMH200VR182M40X40T5H	40 × 40	0.138	3.01	
2,700	KMH200VR272M40X50T5H	40 × 50	0.092	3.92	
3,300	KMH200VR332M40X63T5H	40 × 63	0.075	4.63	
4,700	KMH200VR472M40X80T5H	40 × 80	0.053	6.01	
<b>250 Volts</b> 300 Volts Surge	120	KMH250VN121M22X20T2	22 × 20	1.381	0.59
	150	KMH250VN151M22X25T2	22 × 25	1.105	0.71
	180	KMH250VN181M22X25T2	22 × 25	0.921	0.78
	220	KMH250VN221M22X30T2	22 × 30	0.753	0.95
	270	KMH250VN271M22X35T2	22 × 35	0.614	1.14
	330	KMH250VN331M22X40T2	22 × 40	0.502	1.26

\* The case sizes in table are with no sleeve, refer to diagrams for case sizes with sleeve.

# KMH Series

## Standard Voltage Ratings - VN & VR / Snap Mount

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D × L (mm)	Maximum ESR (Ω) at +20°C, 120Hz	Maximum Ripple Current (A rms) at +105°C, 120Hz
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<b>250 Volts 300 Volts Surge</b>	390	KMH250VN391M22X45T2	22 × 45	0.425	1.49
	470	KMH250VN471M22X50T2	22 × 50	0.353	1.57
	180	KMH250VN181M25X20T2	25.4 × 20	0.921	0.75
	220	KMH250VN221M25X25T2	25.4 × 25	0.753	0.95
	270	KMH250VN271M25X25T2	25.4 × 25	0.614	1.05
	330	KMH250VN331M25X30T2	25.4 × 30	0.502	1.2
	390	KMH250VN391M25X35T2	25.4 × 35	0.425	1.49
	470	KMH250VN471M25X40T2	25.4 × 40	0.353	1.57
	560	KMH250VN561M25X45T2	25.4 × 45	0.296	1.79
	680	KMH250VN681M25X50T2	25.4 × 50	0.244	1.84
	220	KMH250VN221M30X20T2	30 × 20	0.753	0.88
	270	KMH250VN271M30X20T2	30 × 20	0.614	0.97
	330	KMH250VN331M30X25T2	30 × 25	0.502	1.26
	390	KMH250VN391M30X25T2	30 × 25	0.425	1.37
	470	KMH250VN471M30X30T2	30 × 30	0.353	1.57
	560	KMH250VN561M30X35T2	30 × 35	0.296	1.79
	680	KMH250VN681M30X40T2	30 × 40	0.244	2.0
	820	KMH250VN821M30X45T2	30 × 45	0.202	2.16
	330	KMH250VN331M35X20T2	35 × 20	0.753	1.18
	390	KMH250VN391M35X25T2	35 × 25	0.638	1.43
	470	KMH250VN471M35X25T2	35 × 25	0.529	1.57
	560	KMH250VN561M35X30T2	35 × 30	0.444	1.79
	680	KMH250VN681M35X30T2	35 × 30	0.366	1.97
	820	KMH250VN821M35X35T2	35 × 35	0.303	1.98
	1,000	KMH250VN102M35X40T2	35 × 40	0.249	2.3
	1,200	KMH250VN122M35X45T2	35 × 45	0.207	2.43
	1,800	KMH250VN182M35X63T2	35 × 63	0.138	3.27
	2,200	KMH250VN222M35X80T2	35 × 80	0.113	3.87
	680	KMH250VR681M40X25T5H	40 × 25	0.366	1.65
	1,000	KMH250VR102M40X30T5H	40 × 30	0.249	2.1
1,200	KMH250VR122M40X35T5H	40 × 35	0.207	2.39	
1,500	KMH250VR152M40X40T5H	40 × 40	0.166	2.75	
1,800	KMH250VR182M40X50T5H	40 × 50	0.138	3.2	
2,200	KMH250VR222M40X63T5H	40 × 63	0.113	3.78	
3,300	KMH250VR332M40X80T5H	40 × 80	0.075	5.03	

<b>315 Volts 365 Volts Surge</b>	68	KMH315VN68RM22X20T2	22 × 20	3.656	0.44
	82	KMH315VN82RM22X25T2	22 × 25	3.032	0.64
	100	KMH315VN101M22X30T2	22 × 30	2.486	0.68
	120	KMH315VN121M22X30T2	22 × 30	2.072	0.75
	150	KMH315VN151M22X35T2	22 × 35	1.658	0.82
	180	KMH315VN181M22X40T2	22 × 40	1.381	0.91
	220	KMH315VN221M22X45T2	22 × 45	1.13	1.02
	270	KMH315VN271M22X50T2	22 × 50	0.921	1.16
	100	KMH315VN101M25X20T2	25.4 × 20	2.486	0.56
	120	KMH315VN121M25X25T2	25.4 × 25	2.072	0.76
	150	KMH315VN151M25X30T2	25.4 × 30	1.658	0.8
	180	KMH315VN181M25X30T2	25.4 × 30	1.381	0.88
	220	KMH315VN221M25X35T2	25.4 × 35	1.13	1.02
	270	KMH315VN271M25X40T2	25.4 × 40	0.921	1.15
	330	KMH315VN331M25X50T2	25.4 × 50	0.753	1.33
	120	KMH315VN121M30X20T2	30 × 20	2.072	0.65
	150	KMH315VN151M30X25T2	30 × 25	1.658	0.82
	180	KMH315VN181M30X25T2	30 × 25	1.381	0.9
	220	KMH315VN221M30X30T2	30 × 30	1.13	1.02
	270	KMH315VN271M30X35T2	30 × 35	0.921	1.17
	330	KMH315VN331M30X35T2	30 × 35	0.753	1.3
	390	KMH315VN391M30X40T2	30 × 40	0.638	1.46
470	KMH315VN471M30X50T2	30 × 50	0.529	1.7	

\*The case sizes in table are with no sleeve, refer to diagrams for case sizes with sleeve.

# KMH Series

## Standard Voltage Ratings - VN & VR/Snap Mount

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D x L (mm)	Maximum ESR (Ω) at +20°C, 120Hz	Maximum Ripple Current (A rms) at +105°C, 120Hz
315 Volts 365 Volts Surge	180	KMH315VN181M35X20T2	35 × 20	1.381	0.83
	220	KMH315VN221M35X25T2	35 × 25	1.13	1.03
	270	KMH315VN271M35X25T2	35 × 25	0.921	1.15
	330	KMH315VN331M35X30T2	35 × 30	0.753	1.32
	390	KMH315VN391M35X35T2	35 × 35	0.638	1.47
	470	KMH315VN471M35X40T2	35 × 40	0.529	1.69
	560	KMH315VN561M35X45T2	35 × 45	0.444	1.9
	680	KMH315VN681M35X50T2	35 × 50	0.366	2.15
	1,000	KMH315VN102M35X63T2	35 × 63	0.249	2.82
	1,200	KMH315VN122M35X80T2	35 × 80	0.207	3.3
	330	KMH315VR331M40X25T5H	40 × 25	0.753	1.33
	470	KMH315VR471M40X30T5H	40 × 30	0.529	1.66
	560	KMH315VR561M40X35T5H	40 × 35	0.444	1.88
	680	KMH315VR681M40X40T5H	40 × 40	0.366	2.14
	1,000	KMH315VR102M40X50T5H	40 × 50	0.249	2.75
	1,500	KMH315VR152M40X63T5H	40 × 63	0.166	3.6
	1,800	KMH315VR182M40X80T5H	40 × 80	0.138	4.29
350 Volts 400 Volts Surge	56	KMH350VN56RM22X20T2	22 × 20	4.44	0.4
	68	KMH350VN68RM22X25T2	22 × 25	3.656	0.51
	82	KMH350VN82RM22X25T2	22 × 25	3.032	0.56
	100	KMH350VN101M22X30T2	22 × 30	2.486	0.69
	120	KMH350VN121M22X35T2	22 × 35	2.072	0.75
	150	KMH350VN151M22X40T2	22 × 40	1.658	0.82
	180	KMH350VN181M22X45T2	22 × 45	1.381	0.92
	220	KMH350VN221M22X50T2	22 × 50	1.13	1.05
	82	KMH350VN82RM25X20T2	25.4 × 20	3.032	0.51
	100	KMH350VN101M25X25T2	25.4 × 25	2.486	0.69
	120	KMH350VN121M25X25T2	25.4 × 25	2.072	0.75
	150	KMH350VN151M25X30T2	25.4 × 30	1.658	0.83
	180	KMH350VN181M25X35T2	25.4 × 35	1.381	0.92
	220	KMH350VN221M25X40T2	25.4 × 40	1.13	1.04
	270	KMH350VN271M25X45T2	25.4 × 45	0.921	1.18
	100	KMH350VN101M30X20T2	30 × 20	2.486	0.59
	120	KMH350VN121M30X20T2	30 × 20	2.072	0.64
	150	KMH350VN151M30X25T2	30 × 25	1.658	0.83
	180	KMH350VN181M30X25T2	30 × 25	1.381	0.91
	220	KMH350VN221M30X30T2	30 × 30	1.13	1.02
	270	KMH350VN271M30X35T2	30 × 35	0.921	1.17
	330	KMH350VN331M30X40T2	30 × 40	0.753	1.34
	390	KMH350VN391M30X45T2	30 × 45	0.638	1.51
	150	KMH350VN151M35X20T2	35 × 20	1.658	0.76
	180	KMH350VN181M35X25T2	35 × 25	1.381	0.94
	220	KMH350VN221M35X25T2	35 × 25	1.13	1.04
	270	KMH350VN271M35X30T2	35 × 30	0.921	1.2
	330	KMH350VN331M35X30T2	35 × 30	0.753	1.33
	390	KMH350VN391M35X35T2	35 × 35	0.638	1.47
	470	KMH350VN471M35X40T2	35 × 40	0.529	1.69
	560	KMH350VN561M35X45T2	35 × 45	0.444	1.9
	1,000	KMH350VN102M35X63T2	35 × 63	0.249	2.82
	1,200	KMH350VN122M35X80T2	35 × 80	0.207	3.3
330	KMH350VR331M40X25T5H	40 × 25	0.753	1.33	
470	KMH350VR471M40X30T5H	40 × 30	0.529	1.66	
560	KMH350VR561M40X35T5H	40 × 35	0.444	1.88	
680	KMH350VR681M40X40T5H	40 × 40	0.366	2.14	
1,000	KMH350VR102M40X50T5H	40 × 50	0.249	2.75	
1,200	KMH350VR122M40X63T5H	40 × 63	0.207	3.22	
1,800	KMH350VR182M40X80T5H	40 × 80	0.138	4.29	

\* The case sizes in table are with no sleeve, refer to diagrams for case sizes with sleeve.

# KMH Series

## Standard Voltage Ratings - VN & VR / Snap Mount

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D × L (mm)	Maximum ESR (Ω) at +20°C, 120Hz	Maximum Ripple Current (A rms) at +105°C, 120Hz
400 Volts 450 Volts Surge	47	KMH400VN47RM22X20T2	22 × 20	5.29	0.37
	56	KMH400VN56RM22X20T2	22 × 20	4.44	0.4
	68	KMH400VN68RM22X25T2	22 × 25	3.656	0.51
	82	KMH400VN82RM22X30T2	22 × 30	3.032	0.58
	100	KMH400VN101M22X30T2	22 × 30	2.486	0.64
	120	KMH400VN121M22X35T2	22 × 35	2.072	0.72
	150	KMH400VN151M22X40T2	22 × 40	1.658	0.82
	180	KMH400VN181M22X50T2	22 × 50	1.381	0.95
	68	KMH400VN68RM25X20T2	25.4 × 20	3.656	0.46
	82	KMH400VN82RM25X25T2	25.4 × 25	3.032	0.64
	100	KMH400VN101M25X25T2	25.4 × 25	2.486	0.67
	120	KMH400VN121M25X30T2	25.4 × 30	2.072	0.72
	150	KMH400VN151M25X35T2	25.4 × 35	1.658	0.84
	180	KMH400VN181M25X40T2	25.4 × 40	1.381	0.94
	220	KMH400VN221M25X45T2	25.4 × 45	1.13	1.07
	270	KMH400VN271M25X50T2	25.4 × 50	0.921	1.21
	100	KMH400VN101M30X20T2	30 × 20	2.486	0.59
	120	KMH400VN121M30X25T2	30 × 25	2.072	0.76
	150	KMH400VN151M30X25T2	30 × 25	1.658	0.84
	180	KMH400VN181M30X30T2	30 × 30	1.381	0.92
	220	KMH400VN221M30X35T2	30 × 35	1.13	1.06
	270	KMH400VN271M30X40T2	30 × 40	0.921	1.21
	330	KMH400VN331M30X45T2	30 × 45	0.753	1.39
	390	KMH400VN391M30X50T2	30 × 50	0.638	1.55
	150	KMH400VN151M35X20T2	35 × 20	1.658	0.76
	180	KMH400VN181M35X25T2	35 × 25	1.381	0.94
	220	KMH400VN221M35X30T2	35 × 30	1.13	1.08
	270	KMH400VN271M35X30T2	35 × 30	0.921	1.2
	330	KMH400VN331M35X35T2	35 × 35	0.753	1.35
	390	KMH400VN391M35X40T2	35 × 40	0.638	1.54
	470	KMH400VN471M35X45T2	35 × 45	0.529	1.74
	820	KMH400VN821M35X63T2	35 × 63	0.303	2.55
	1,000	KMH400VN102M35X80T2	35 × 80	0.249	3.01
	270	KMH400VR271M40X25T5H	40 × 25	0.921	1.2
390	KMH400VR391M40X30T5H	40 × 30	0.638	1.51	
470	KMH400VR471M40X35T5H	40 × 35	0.529	1.72	
560	KMH400VR561M40X40T5H	40 × 40	0.444	1.94	
820	KMH400VR821M40X50T5H	40 × 50	0.303	2.49	
1,200	KMH400VR122M40X63T5H	40 × 63	0.207	3.22	
1,500	KMH400VR152M40X80T5H	40 × 80	0.166	3.92	

450 Volts 500 Volts Surge	56	KMH450VN56RM22X25T2	22 × 25	4.44	0.4
	68	KMH450VN68RM22X30T2	22 × 30	3.656	0.5
	82	KMH450VN82RM22X35T2	22 × 35	3.032	0.56
	100	KMH450VN101M22X40T2	22 × 40	2.486	0.64
	120	KMH450VN121M22X45T2	22 × 45	2.072	0.72
	150	KMH450VN151M22X50T2	22 × 50	1.658	0.79
	68	KMH450VN68RM25X25T2	25.4 × 25	3.656	0.5
	82	KMH450VN82RM25X25T2	25.4 × 25	3.032	0.55
	100	KMH450VN101M25X30T2	25.4 × 30	2.486	0.57
	120	KMH450VN121M25X35T2	25.4 × 35	2.072	0.71
	150	KMH450VN151M25X40T2	25.4 × 40	1.658	0.75
	180	KMH450VN181M25X45T2	25.4 × 45	1.381	0.84
	220	KMH450VN221M25X50T2	25.4 × 50	1.13	0.98
	100	KMH450VN101M30X25T2	30 × 25	2.486	0.64
	120	KMH450VN121M30X25T2	30 × 25	2.072	0.7
	150	KMH450VN151M30X30T2	30 × 30	1.658	0.74
	180	KMH450VN181M30X35T2	30 × 35	1.381	0.87
	220	KMH450VN221M30X40T2	30 × 40	1.13	0.98

\*The case sizes in table are with no sleeve, refer to diagrams for case sizes with sleeve.

KMH  
SNAP MOUNT - 105°C

# KMH Series

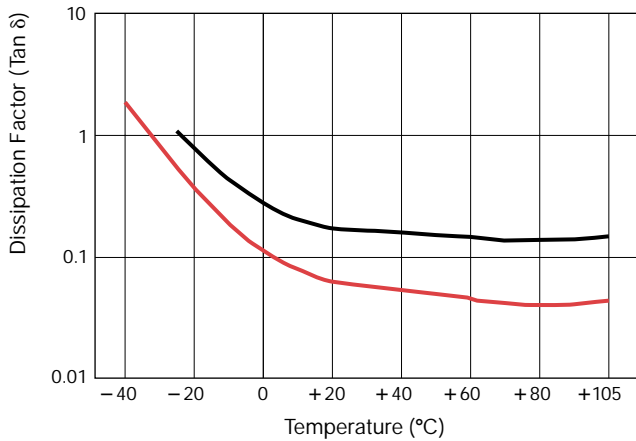
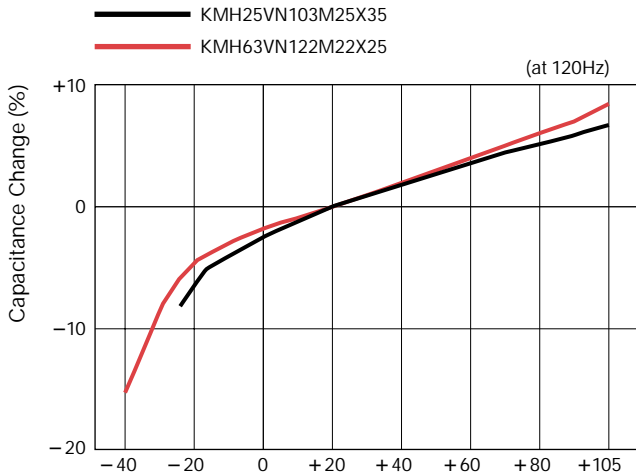
## Standard Voltage Ratings - VN & VR/Snap Mount

Rated Voltage (WVDC)	Capacitance (μF)	Catalog Part Number	Nominal Case Size* D × L (mm)	Maximum ESR (Ω) at +20°C, 120Hz	Maximum Ripple Current (A rms) at +105°C, 120Hz
450 Volts 500 Volts Surge	270	KMH450VN271M30X45T2	30 × 45	0.921	1.15
	330	KMH450VN331M30X50T2	30 × 50	0.753	1.38
	150	KMH450VN151M35X25T2	35 × 25	1.658	0.75
	180	KMH450VN181M35X30T2	35 × 30	1.381	0.9
	220	KMH450VN221M35X30T2	35 × 30	1.13	1.0
	270	KMH450VN271M35X35T2	35 × 35	0.921	1.17
	330	KMH450VN331M35X40T2	35 × 40	0.753	1.38
	390	KMH450VN391M35X45T2	35 × 45	0.638	1.55
	470	KMH450VN471M35X50T2	35 × 50	0.529	1.72
	560	KMH450VN561M35X63T2	35 × 63	0.444	2.11
	820	KMH450VN821M35X80T2	35 × 80	0.303	2.73
	220	KMH450VR221M40X25T5H	40 × 25	1.13	1.09
	270	KMH450VR271M40X30T5H	40 × 30	0.921	1.26
	390	KMH450VR391M40X35T5H	40 × 35	0.638	1.57
	470	KMH450VR471M40X40T5H	40 × 40	0.529	1.78
	560	KMH450VR561M40X50T5H	40 × 50	0.444	2.06
	820	KMH450VR821M40X63T5H	40 × 63	0.303	2.66
	1,200	KMH450VR122M40X80T5H	40 × 80	0.207	3.5

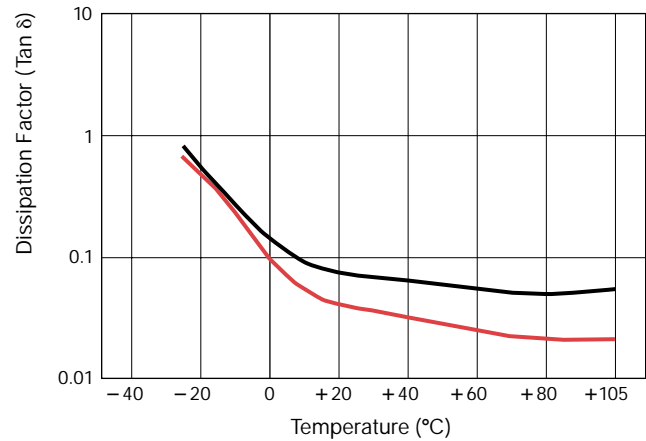
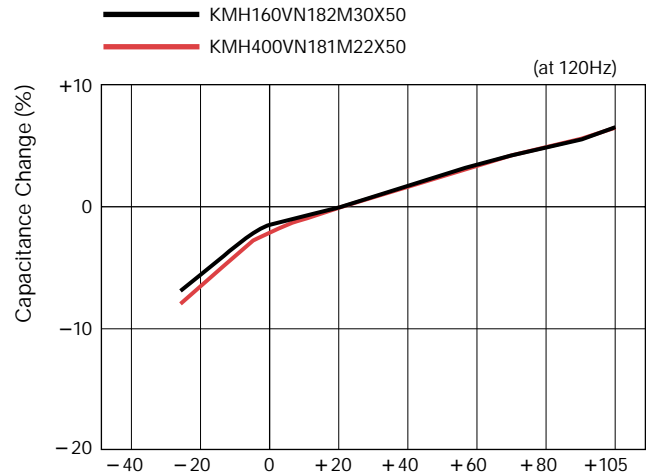
\*The case sizes in table are with no sleeve, refer to diagrams for case sizes with sleeve.

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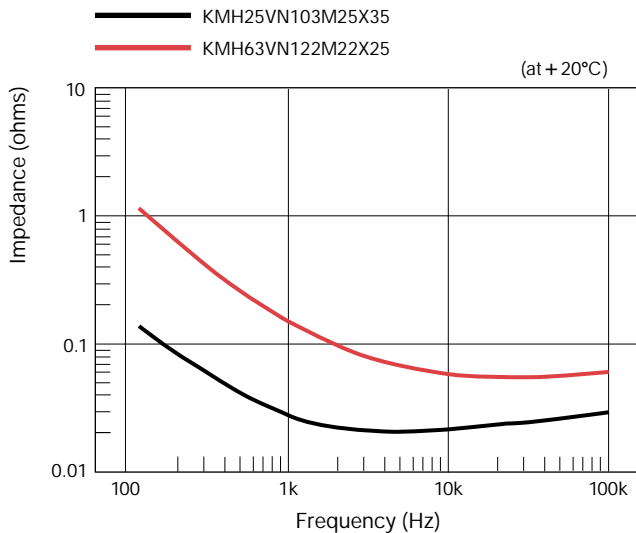
## Temperature Characteristics



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## Impedance - Frequency Characteristics



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