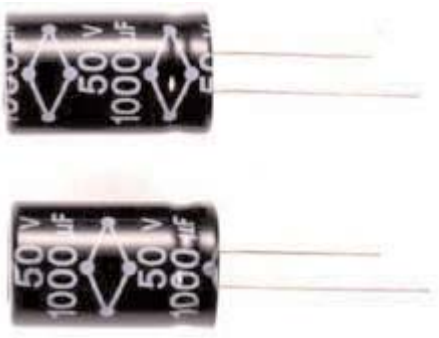
General Purpose Capacitors

RH Series



Features:

- For general purpose.
- Wide CV value range.
- Safely vent construction products, RH series are guaranteed 2,000 hours at 105°C.

Specification Table

<table>
<tr><th>No.</th><th>Item</th><th>Performance</th></tr>
<tr><td>1</td><td>Operating Temperature Range</td><td>-40 to +105°C</td></tr>
<tr><td>2</td><td>Rated Working Voltage Range</td><td>10 - 100 V dc</td></tr>
<tr><td>3</td><td>Nominal Capacitance Range</td><td>0.1 - 15,000 µF</td></tr>
<tr><td>4</td><td>Capacitance Tolerance</td><td>±20% (at +20°C, 120 Hz)</td></tr>
<tr><td>5</td><td>Leakage Current</td><td>I ≤ 0.01 CV or 3 (µA) Max.
Whichever is greater after 3 mins.
I : Leakage Current (µA)
C : Rated Capacitance (µF)
V : Working Voltage (v)</td></tr>
<tr><td>6</td><td>Dissipation Factor
(tan δ)
(120 Hz / +20°C)</td><td>
<table>
<tr><td>Working Voltage (V)</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr>
<tr><td>tan δ Max.</td><td>0.19</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.1</td><td>0.1</td><td>0.07</td></tr>
</table>
Add 0.02 per 1,000 µF for more than 1,000 µF
</td></tr>
<tr><td>7</td><td>Maximum Permissible
Ripple Current</td><td>Refer to standard products table (120 Hz, +105°C) Correction factor for frequency.
<table>
<tr><th colspan="2">Frequency (Hz)
W V (V dc)</th><th>60</th><th>120</th><th>1 K</th><th>10 K</th><th>100 K</th></tr>
<tr><td rowspan="3">6.3 - 50</td><td>0.1 - 330</td><td>0.85</td><td rowspan="6">1</td><td>1.3</td><td>1.4</td><td>1.55</td></tr>
<tr><td>470 - 3,300</td><td rowspan="2">0.95</td><td>1.15</td><td rowspan="2">1.2</td><td>1.25</td></tr>
<tr><td>≥ 4,700</td><td>1.1</td><td>1.2</td></tr>
<tr><td rowspan="3">63 - 100</td><td>0.47 - 33</td><td rowspan="2">0.75</td><td>1.55</td><td>1.65</td><td>1.8</td></tr>
<tr><td>47 - 220</td><td>1.4</td><td>1.6</td><td>1.65</td></tr>
<tr><td>≥ 330</td><td>0.8</td><td>1.3</td><td>1.35</td><td>1.4</td></tr>
<tr><td>≥ 160</td><td>1 - 220</td><td>0.7</td><td>1.3</td><td>1.7</td><td>1.7</td></tr>
</table>
</td></tr>
<tr><td>8</td><td>Characteristics at
Low Temperature
(Stability at 120 Hz)</td><td>
<table>
<tr><td>Working Voltage (V)</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr>
<tr><td>-25°C / +25°C</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td>-40°C / +20°C</td><td>6</td><td>4</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr>
</table>
For capacitance value > 1,000 µF, Add 0.5 per another 1,000 µF for -25°C / +25°C.
Add 1 per another 1,000 µF for -40°C / +20°C.
</td></tr>
</table>

General Purpose Capacitors

RH Series

Specification Table

No.	Item	Performance
9	High Temperature Loading	After 2,000 hours application of DC rated working voltage at +105°C, The capacitor shall meet the following limits: Post test requirements at +20°C. Leakage current: ≤ the initial specified value Capacitance change: ≤ ±20% of initial measured value Dissipation factor (tan δ): ≤ 200% of initial specified value
10	Shelf Life	After storage for 500 hours at +105°C with no voltage applied. Post test requirements at +20°C same limits as high temperature loading.

Permissible Ripple Current

(Maximum Ripple Current : mA (rms) (at 105°C 120 Hz)

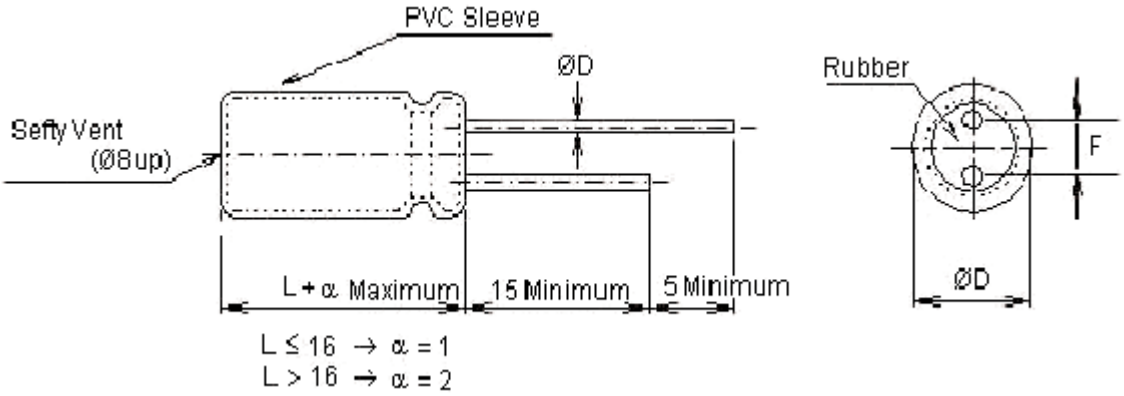
W V (SV) µF	10 (13)	16 (20)	25 (35)	35 (44)	50 (63)	63 (79)	100 (125)
0.1	-	-	-	-	7	-	8
0.22	-	-	-	-		-	
0.33	-	-	-	-		-	
0.47	-	-	-	-	8	-	10
1	-	-	-	-	12	-	15
2.2	-	-	-	-	17	-	23
3.3	-	-	-	-	21	-	29
4.7	-	-	26	28	30	32	34
10	-	35	38	41	46	50	56
22	49	54	57	61	68	82	96
33	60	64	69	75	90	100	140
47	70	99	82	100	110	135	180
100	105	125	135	170	180	223	320
220	175	215	230	300	345	400	570
330	245	260	335	400	460	540	700
470	290	370	440	520	610	700	880
1,000	550	640	770	920	1,080	1,210	-
2,200	860	1,000	1,170	1,340	1,530	-	-
3,300	1,100	1,300	1,460	1,650	1,850	-	-
4,700	1,400	1,600	1,780	1,900	-	-	-
6,800	1,690	1,900	1,950	-	-	-	-
10,000	1,950	2,000	-	-	-	-	-
15,000	2,100	-	-	-	-	-	-

Dimensions : Millimetres

General Purpose Capacitors

RH Series

Diagram of Dimensions



ØD (+ 0.5 Maximum)	10	16
F (±0.5)	5	7.5
Ød (±0.02)	0.6	0.8

Dimensions : Millimetres

Case Size Table ØD × L (mm)

W V (SV) µF	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)	63 (79)	100 (125)
0.1	-	-	-	→	5 × 11	-	5 × 11
0.22	-	-	-	→		-	
0.33	-	-	-	→		-	
0.47	-	-	-	→		-	
1	-	-	-	→		-	
2.2	-	-	-	→		-	
3.3	-	-	-	→		-	
4.7	-	-	-	→		-	
10	-	→	5 × 11	5 × 11		5 × 11	6.3 × 11
22	-	→				6.3 × 11	8 × 11
33	→	5 × 11			6.3 × 11		10 × 13
47	5 × 11			6.3 × 11		8 × 11	10 × 16
100		6.3 × 11	6.3 × 11	8 × 11	8 × 11	10 × 13	13 × 21
220	6.3 × 11	8 × 11	8 × 11	10 × 13	10 × 16	10 × 21	16 × 26
330	8 × 11		10 × 13	10 × 16	10 × 21	13 × 21	
470		10 × 13	10 × 16	10 × 21	13 × 21	13 × 26	16 × 32
1,000	10 × 16	10 × 21	13 × 21	13 × 21	16 × 26	16 × 32	-
2,200	13 × 21	13 × 21	13 × 26	16 × 32	18 × 36	-	-
3,300		13 × 26	16 × 32	18 × 36	18 × 42	-	-

Dimensions : Millimetres

General Purpose Capacitors

RH Series

Case Size Table ØD × L (mm)

W V (SV) µF	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)	63 (79)	100 (125)
4,700	16 × 26	16 × 32	18 × 36	18 × 42	-	-	-
6,800	16 × 32	18 × 36	18 × 42	-	-	-	-
10,000	18 × 36	18 × 42	-	-	-	-	-
15,000	18 × 42	-	-	-	-	-	-

Dimensions : Millimetres

- All blank voltage on sleeve marking is the same voltage as ¡§ → ¡¨ point to.

Part Number Table

Description	Part Number
CAPACITOR, 10UF, 10V	MCRH10V476M5X11
CAPACITOR, 100UF, 10V	MCRH10V107M5X11
CAPACITOR, 220UF, 10V	MCRH10V227M6.3X11
CAPACITOR, 330UF, 10V	MCRH10V337M8X11
CAPACITOR, 470UF, 10V	MCRH10V477M8X11
CAPACITOR, 1000UF, 10V	MCRH10V108M10X16
CAPACITOR, 2200UF, 10V	MCRH10V228M13X21
CAPACITOR, 3300UF, 10V	MCRH10V338M13X21
CAPACITOR, 4700UF, 10V	MCRH10V478M16X26
CAPACITOR, 10UF, 16V	MCRH16V106M5X11
CAPACITOR, 22UF, 16V	MCRH16V226M5X11
CAPACITOR, 33UF, 16V	MCRH16V336M5X11
CAPACITOR, 47UF, 16V	MCRH16V476M5X11
CAPACITOR, 100UF, 16V	MCRH16V107M6.3X11
CAPACITOR, 220UF, 16V	MCRH16V227M8X11
CAPACITOR, 330UF, 16V	MCRH16V337M8X11
CAPACITOR, 470UF, 16V	MCRH16V477M10X13
CAPACITOR, 1000UF, 16V	MCRH16V108M10X21
CAPACITOR, 2200UF, 16V	MCRH16V228M13X21
CAPACITOR, 3300UF, 16V	MCRH16V338M13X26
CAPACITOR, 4700UF, 16V	MCRH16V478M16X32
CAPACITOR, 10UF, 25V	MCRH25V106M5X11
CAPACITOR, 22UF, 25V	MCRH25V226M5X11
CAPACITOR, 33UF, 25V	MCRH25V336M5X11
CAPACITOR, 47UF, 25V	MCRH25V476M5X11

Description	Part Number
CAPACITOR, 100UF, 25V	MCRH25V107M6.3X11
CAPACITOR, 220UF, 25V	MCRH25V227M8X11
CAPACITOR, 330UF, 25V	MCRH25V337M10X13
CAPACITOR, 470UF, 25V	MCRH25V477M10X16
CAPACITOR, 1000UF, 25V	MCRH25V108M13X21
CAPACITOR, 2200UF, 25V	MCRH25V228M13X26
CAPACITOR, 3300UF, 25V	MCRH25V338M16X32
CAPACITOR, 4700UF, 25V	MCRH25V478M16X36
CAPACITOR, 4.7UF, 35V	MCRH35V475M5X11
CAPACITOR, 10UF, 35V	MCRH35V106M5X11
CAPACITOR, 22UF, 35V	MCRH35V226M5X11
CAPACITOR, 33UF, 35V	MCRH35V336M5X11
CAPACITOR, 47UF, 35V	MCRH35V476M6.3X11
CAPACITOR, 100UF, 35V	MCRH35V107M8X11
CAPACITOR, 220UF, 35V	MCRH35V227M10X13
CAPACITOR, 330UF, 35V	MCRH35V337M10X16
CAPACITOR, 470UF, 35V	MCRH35V477M10X21
CAPACITOR, 1000UF, 35V	MCRH35V108M13X21
CAPACITOR, 2200UF, 35V	MCRH35V228M16X32
CAPACITOR, 3300UF, 35V	MCRH35V338M18X36
CAPACITOR, 4700UF, 35V	MCRH35V478M18X36
CAPACITOR, 0.1uF, 50V	MCRH50V104M5X11
CAPACITOR, 0.22uF, 50V	MCRH50V224M5X11
CAPACITOR, 0.33uF, 50V	MCRH50V334M5X11
CAPACITOR, 0.47uF, 50V	MCRH50V474M5X11

General Purpose Capacitors

RH Series

Part Number Table

Description	Part Number
CAPACITOR, 1uF, 50V	MCRH50V105M5X11
CAPACITOR, 2.2uF, 50V	MCRH50V225M5X11
CAPACITOR, 3.3uF, 50V	MCRH50V335M5X11
CAPACITOR, 4.7uF, 50V	MCRH50V475M5X11
CAPACITOR, 10uF, 50V	MCRH50V106M5X11
CAPACITOR, 22uF, 50V	MCRH50V226M5X11
CAPACITOR, 33uF, 50V	MCRH50V336M6.3X11
CAPACITOR, 47uF, 50V	MCRH50V476M6.3X11
CAPACITOR, 100uF, 50V	MCRH50V107M8X11
CAPACITOR, 220uF, 50V	MCRH50V227M10X16
CAPACITOR, 330uF, 50V	MCRH50V337M10X20
CAPACITOR, 470uF, 50V	MCRH50V477M13X21
CAPACITOR, 1000uF, 50V	MCRH50V108M16X26
CAPACITOR, 1UF, 63V	MCRH63V105M5X11
CAPACITOR, 2.2UF, 63V	MCRH63V225M5X11
CAPACITOR, 4.7UF, 63V	MCRH63V475M5X11
CAPACITOR, 10UF, 63V	MCRH63V106M5X11
CAPACITOR, 22UF, 63V	MCRH63V226M6.3X11
CAPACITOR, 33UF, 63V	MCRH63V336M6.3X11
CAPACITOR, 47UF, 63V	MCRH63V476M8X11
CAPACITOR, 100UF, 63V	MCRH63V107M10X13
CAPACITOR, 220UF, 63V	MCRH63V227M10X21
CAPACITOR, 330UF, 63V	MCRH63V337M13X21
CAPACITOR, 470UF, 63V	MCRH63V477M13X26
CAPACITOR, 1000UF, 63V	MCRH63V108M16X32
CAPACITOR, 0.1UF, 100V	MCRH100V104M5X11
CAPACITOR, 0.22UF, 100V	MCRH100V224M5X11
CAPACITOR, 0.33UF, 100V	MCRH100V334M5X11
CAPACITOR, 0.47UF, 100V	MCRH100V474M5X11

Description	Part Number
CAPACITOR, 1UF, 100V	MCRH100V105M5X11
CAPACITOR, 2.2UF, 100V	MCRH100V225M5X11
CAPACITOR, 3.3UF, 100V	MCRH100V335M5X11
CAPACITOR, 4.7UF, 100V	MCRH100V475M5X11
CAPACITOR, 10UF, 100V	MCRH100V106M6.3X11
CAPACITOR, 22UF, 100V	MCRH100V226M8X11
CAPACITOR, 33UF, 100V	MCRH100V336M8X11
CAPACITOR, 47UF, 100V	MCRH100V476M10X16
CAPACITOR, 100UF, 100V	MCRH100V107M13X21
CAPACITOR, 220UF, 100V	MCRH100V227M16X26
CAPACITOR, 330UF, 100V	MCRH100V337M16X26
CAPACITOR, 470UF, 100V	MCRH100V477M16X32

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