

General Purpose Radial Capacitor

GPR Series



Features:

- Wide CV value range for general purpose
- Safety vent construction products, GPR series are guaranteed 2,000 hours at 85°C

Item	Performance																																																						
Operating Temperature Range	-40°C to +85°C	-25°C to +85°C																																																					
Rate Working Voltage Range	6.3 to 100V DC	160 to 450V DC																																																					
Nominal Capacitance Range	0.1 to 22,000µF	0.47 to 820µF																																																					
Capacitance Tolerance	±20% (at +20°C, 120Hz)																																																						
Leakage Current	I = 0.01CV or 3 (µA) max.	I ≤ 0.03CV + 30 (µA) max.																																																					
	Whichever is greater after 3 minutes I : Leakage Current (µA) C : Rated Capacitance (µF) V : Working Voltage (V)																																																						
Dissipation Factor (tanδ at 120Hz/+20°C)	<table border="1"> <thead> <tr> <th>Working Voltage</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>tanδ max.</td> <td>0.22</td> <td>0.2</td> <td>0.17</td> <td>0.15</td> <td>0.12</td> <td>0.1</td> <td>0.09</td> <td>0.08</td> <td>0.2</td> <td>0.2</td> <td>0.18</td> <td>0.2</td> <td>0.2</td> <td>0.2</td> </tr> </tbody> </table>														Working Voltage	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	tanδ max.	0.22	0.2	0.17	0.15	0.12	0.1	0.09	0.08	0.2	0.2	0.18	0.2	0.2	0.2											
	Working Voltage	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450																																								
tanδ max.	0.22	0.2	0.17	0.15	0.12	0.1	0.09	0.08	0.2	0.2	0.18	0.2	0.2	0.2																																									
Add 0.02 per 1,000µF for more than 1,000µF																																																							
Ripple Current	Refer to standard products table (120Hz, +85°C). Correction factor for frequency.																																																						
	<table border="1"> <thead> <tr> <th>Frequency (Hz)</th> <th>50/80</th> <th>120</th> <th>1K</th> <th>10K</th> </tr> </thead> <tbody> <tr> <td>Correction factor (Multiplier)</td> <td>0.7</td> <td>1</td> <td>1.3</td> <td>1.7</td> </tr> </tbody> </table>														Frequency (Hz)	50/80	120	1K	10K	Correction factor (Multiplier)	0.7	1	1.3	1.7																															
Frequency (Hz)	50/80	120	1K	10K																																																			
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Characteristics at Low Temperature (stability at 120Hz)	<table border="1"> <thead> <tr> <th>Working Voltage</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>-25°C/+20°C</td> <td>4</td> <td>3</td> <td colspan="4">2</td> <td colspan="3">3</td> <td>5</td> <td>12</td> <td>15</td> </tr> <tr> <td>-40°C/+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td colspan="3">3</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>*</td> <td>-</td> </tr> </tbody> </table>														Working Voltage	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	-25°C/+20°C	4	3	2				3			5	12	15	-40°C/+20°C	8	6	4	3			-	-	-	-	*	-
	Working Voltage	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450																																								
	-25°C/+20°C	4	3	2				3			5	12	15																																										
-40°C/+20°C	8	6	4	3			-	-	-	-	*	-																																											
For Capacitance value >1,000µF, Add 0.5 per another 1,000µF for -25°C/+25°C Add 1 per another 1,000µF for -40°C/+20°C																																																							
High Temperature Loading	After 2,000 hours application of DC rated working voltage at +85°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 (tanδ)							≤ 150% of initial specified value																																															

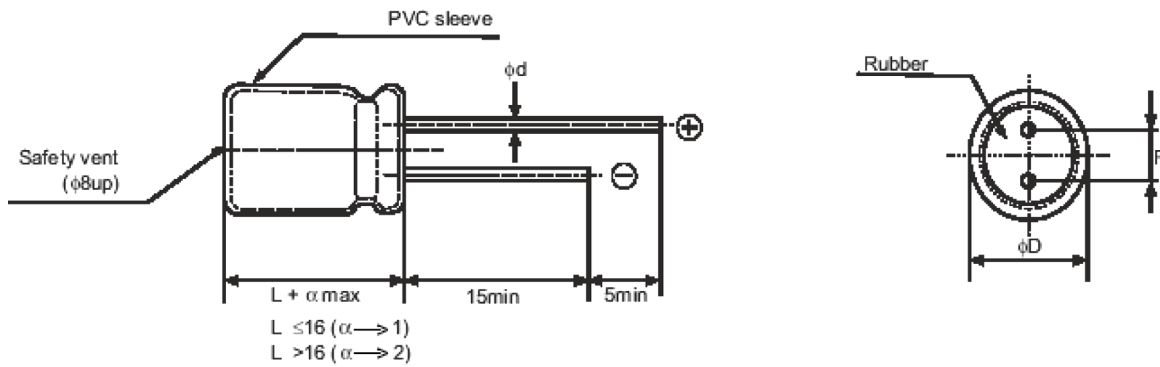


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Specifications

Item	Performance
Shelf Life	After storage for 500 hours at +85°C with no voltage applied. Post test requirements at +20°C. Same limits for high temperature loading



DØ (+0.5 max.)	5	6.3	8	10	13	16	18	22	25
F (± 0.5)	2	2.5	3	5	5	7.5	7.5	10	12
dØ (± 0.02)	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8	0.8

Case Size Table

ØDiameter × Length (mm)

WV(SV) µF	6.3 (8)	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					→			
1.0					→			
2.2					→			
3.3					→			
4.7					→			
10			→	5 × 11	5 × 11	6.3 × 11	5 × 11	6.3 × 11
22		→	5 × 11				6.3 × 11	8 × 11
33		→			5 × 11	6.3 × 11		
47		→	5 × 11				6.3 × 11	8 × 11
100		5 × 11		6.3 × 11	6.3 × 11	8 × 11		
220		6.3 × 11	6.3 × 11	8 × 11	10 × 13	10 × 16	10 × 21	10 × 21
330			8 × 11	10 × 13	10 × 16	10 × 21	10 × 21	13 × 21



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Case Size Table

ØDiameter × Length (mm)

WV(SV) µF	6.3 (8)	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)	63 (79)	100 (125)
470	6.3 × 11	8 × 11	8 × 11	10 × 16	10 × 16	13 × 21	13 × 26	16 × 32
1,000	8 × 11	10 × 13	10 × 16	10 × 21	13 × 21	16 × 26	16 × 32	18 × 42
2,200	10 × 21	10 × 21	13 × 21	13 × 26	16 × 26	16 × 36	18 × 36	25 × 50
3,300	13 × 21	13 × 21	13 × 26	16 × 26	16 × 36	18 × 36	22 × 42	
4,700	13 × 26	13 × 26	16 × 26	16 × 36	18 × 36	22 × 41	25 × 50	
6,800	16 × 26	16 × 26	16 × 36	18 × 36	22 × 41	25 × 50	30 × 46	
8,200	16 × 32	18 × 36	18 × 42	22 × 46	22 × 50	30 × 46		
10,000		18 × 32	18 × 36	22 × 41	25 × 50			
15,000	18 × 36	18 × 36	22 × 50	25 × 50				
22,000	22 × 40	22 × 50	25 × 50	30 × 46				

Case Size Table

ØDiameter × Length (mm)

WV(SV) µF	160 (200)	200 (250)	250 (300)	350 (400)	400 (450)	450 (500)
0.47	6.3 × 11	6.3 × 11	6.3 × 11	8 × 11	8 × 11	8 × 11
1.0						10 × 13
2.2						10 × 16
3.3			10 × 13	10 × 16		
4.7				10 × 18		
10	8 × 11	10 × 13	10 × 16	10 × 21	13 × 21	13 × 21
22	10 × 16	10 × 21	13 × 21	13 × 21	13 × 26	16 × 26
33	10 × 21	13 × 21		13 × 26	16 × 26	16 × 32
47	13 × 21		13 × 26	16 × 26	16 × 32	18 × 36
100	13 × 26	16 × 26	16 × 32	18 × 36	18 × 36	
150	16 × 36	18 × 42	22 × 36	22 × 41	22 × 50	
220				22 × 50		
330	18 × 42	22 × 41	22 × 46			
470	22 × 41	22 × 46	25 × 46			
560	22 × 46	22 × 50	25 × 50			
680	22 × 50	25 × 50				
820	25 × 50					



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Case Size Table

ØDiameter × Length (mm)

WV(SV) µF	6.3 (8)	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)	63 (79)	100 (125)	160 (200)	200 (250)	250 (300)	350 (400)	400 (450)	450 (500)
0.1 to 0.47						8		10	10	10	10	11	12	12
1.0						13		16	16	16	18	18	18	19
2.2						21		27	28	29	31	28	28	29
3.3						30		40	35	36	40	35	35	35
4.7				30	35	40	40	45	41	45	49	40	45	50
10			45	45	50	60	65	75	70	72	81	70	70	75
22		60	60	70	80	90	110	130	120	126	144	110	110	110
33	65	75	85	95	105	120	140	170	170	160	171	140	140	150
47	80	90	100	120	135	150	180	230	220	193	210	170	190	220
100	130	140	170	180	220	250	280	380	350	330	320	420	520	
150	170	220	240	310	350	400	450	550	660	720	730	740	750	
220	220	240	280	320	380	430	490	680	690	700	810	820		
330	260	320	360	420	480	540	680	800	800	970	1110			
470	380	400	460	540	620	750	880	1000	1080	1220	1430			
560	440	500	580	670	770	880	1050	1170	1240	1400	1630			
680	500	570	660	760	870	1000	1160	1330	1430	1650				
820	560	640	740	850	970	1130	1300	1500	1690					
1,000	580	660	760	900	1040	1260	1400	1970						
2,200	1000	1050	1250	1460	1700	1900	2460	3390						
3,300	1200	1340	1620	1800	2060	2180	3270							
4,700	1650	1720	1960	2150	2280	3380	3800							
6,800	1750	2060	2250	2400	3490	4110	4500							
8,200	2150	2520	2870	3420	3780	4150								
10,000	2260	2640	2980	3710	4170	4300								
15,000	2760	3120	3890	4270										
22,000	3000	4010	4410	4500										

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Specifications Table

Dimensions : Millimetres

Capacitance	Voltage	Dimensions	Part Number
10	16	5 × 11	MCGPR16V106M5X11
22			MCGPR16V226M5X11
470			MCGPR16V476M5X11
100		6.3 × 12	MCGPR16V107M6.3X11
220		6 × 12	MCGPR16V227M6.3X11
330		8 × 12	MCGPR16V337M8X11
470			MCGPR16V477M8X11
1000		10 × 17	MCGPR16V108M10X16
2200		13 × 21	MCGPR16V228M13X21
4700		16 × 26	MCGPR16V478M16X26
10		25	5 × 11
22	MCGPR25V226M5X11		
47	MCGPR25V476M5X11		
100	6.3 × 12		MCGPR25V107M6.3X11
220	8 × 12		MCGPR25V227M8X11
470	10 × 17		MCGPR25V477M10X16
1000	10 × 21		MCGPR25V108M10X21
4.7	35		5 × 11
10		MCGPR35V106M5X11	
22		MCGPR35V226M5X11	
33		6.3 × 12	MCGPR35V336M5X11
47			MCFPR35V476M6.3X11
100		8 × 12	MCGPR35V107M8X11
220		10 × 13	MCGPR35V227M10X13
330		10 × 16	MCFPR35V337M10X16
470		10 × 21	MCFPR35V477M10X21
1000		13 × 22	MCGPR35V108M13X21
2200		16 × 32	MCGPR35V228M16X32
0.47		50	5 × 11
1	MCGPR50V105M5X11		
2.2	MCGPR50V225M5X11		
4.7	MCGPR50V475M5X11		
10	MCGPR50V106M5X11		
22	MCGPR50V226M5X11		



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Specifications Table

Capacitance	Voltage	Dimensions	Part Number	
47	50	6 × 12	MCGPR50V476M6.3X11	
100		8 × 11	MCGPR50V107M8X11	
220		10 × 17	MCGPR50V227M10X16	
470		13 × 21	MCGPR50V477M13X21	
1,000		16 × 26	MCGPR50V108M16X26	
1	63	5 × 11	MCGPR63V105M5X11	
2.2			MCGPR63V225M5X11	
4.7			MCGPR63V475M5X11	
10			MCGPR63V106M5X11	
22		6.3 × 11	MCGPR63V226M6.3X11	
47		8 × 11	MCGPR63V476M8X11	
100		10 × 13	MCGPR63V10710X13	
220		10 × 21	MCGPR63V227M13X21	
470		13 × 26	MCGPR63V477M13X26	
1,000		16 × 32	MCGPR63V108M16X32	
1		100	5 × 11	MCGPR100V105M5X11
10			6.3 × 11	MCGPR100V106M6.3X11
22			8 × 11	MCGPR100V226M8X11
47	10 × 16		MCGPR100V476M10X16	
100	13 × 21		MCGPR100V107M13X21	
220	16 × 26		MCGPR100V227M16X26	
470	16 × 32		MCGPR100V477M16X32	

Dimensions : Millimetres

Part Number Table

Description	Part Number
Capacitor, Electrolytic, 35V, 470UF	MCGPR35V477M10X21-RH

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