



• Specifications

Items	Characteristics										
Category temperature range	-55 to +145°C										
Rated voltage range	25 to 63Vdc										
Capacitance range	33 to 330μF										
Capacitance tolerance	±20% [M] (at 20°C, 120Hz)										
Leakage current	I=0.01CV or 3μA whichever is greater (at 20°C, after 2 minutes)										
Tangent of loss angle(tanδ)	<table border="1"> <tr> <th>Rated voltage(V)</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> </tr> <tr> <th>Tanδ</th> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.08</td> </tr> </table>	Rated voltage(V)	25	35	50	63	Tanδ	0.14	0.12	0.10	0.08
	Rated voltage(V)	25	35	50	63						
Tanδ	0.14	0.12	0.10	0.08							
(at 20°C, 120Hz)											
ESR	Less than or equal to the value of Standard Ratings (at 20°C, 100kHz)										
Low temperature characteristics (Impedance ratio at 100kHz)	$Z(-25\text{ }^{\circ}\text{C}) / Z(+20\text{ }^{\circ}\text{C}) \leq 1.5$ $Z(-55\text{ }^{\circ}\text{C}) / Z(+20\text{ }^{\circ}\text{C}) \leq 2.0$										
Endurance	145°C, 2,000 hrs(6.3σ : 2,000 hrs), apply the rated ripple current without exceeding the rated voltage										
	Capacitance change	Within±30% of the initial value									
	Tangent of loss angle (tanδ)	≤200% of the initial specified value									
	ESR(mΩ)	≤200% of the initial specified value									
	Leakage current	≤The initial specified value									
Shelf life	After storage for 1,000 hrs at 145°C with no voltage applied and then being stabilized at 20°C, capacitors shall meet the specified values for the endurance characteristics listed above.(with voltage treatment)										
	85°C, 85% RH, 2,000 hrs, rated voltage applied										
Damp Heat (Steady State)	Capacitance change	Within±30% of the initial value									
	Tangent of loss angle (tanδ)	≤200% of the initial specified value									
	ESR(mΩ)	≤200% of the initial specified value									
	Leakage current	≤The initial specified value									

• Part numbering system

Example: HRG series, 25V / 330μF

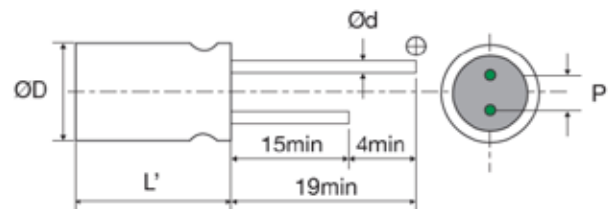
25	HRG	330	M	E	11
Voltage	Series	Capacitance	Tolerance	Diameter	Length

• Marking and Dimensions



• Frequency coefficient for ripple current

Frequency	120Hz	1kHz	10kHz	100kHz
Coefficient	0.15	0.40	0.75	1.00



(unit: mm)

Size	ØD±0.5	L	L'	P±0.5	Ød
8.0×9.5	8.0	9.5	L±1.0	3.5	0.60
10.0×10.5	10.0	10.5		5.0	0.60
10.0×11.5	10.0	11.5		5.0	0.60

• Standard Ratings

Rated Voltage [Vdc]	Rated Capacitance [μF]	Size ØD x L [mm]	ESR (20°C, 100kHz) [mΩ] [max.]	Rated Ripple Current (100kHz) [mA rms]		Part Number
				135°C	145°C	
25	220	8.0 x 9.5	27	1600	700	25HRG220MD10
	330	10.0 x 10.5	20	2000	900	25HRG330ME10
35	150	8.0 x 9.5	27	1600	700	35HRG150MD10
	270	10.0 x 10.5	20	2000	900	35HRG270ME10
50	68	8.0 x 9.5	30	1250	600	50HRG68MD10
	100	10.0 x 10.5	28	1600	800	50HRG100ME10
63	33	8.0 x 9.5	40	1100	600	63HRG33MD10
	56	10.0 x 10.5	30	1400	800	63HRG56ME10
	82	10.0 x 10.5	30	1400	800	63HRG82ME10