



Specifications

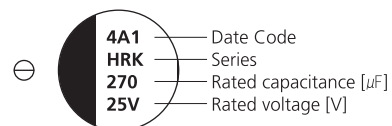
Items	Characteristics																	
Category temperature range	-55 to +125℃																	
Rated voltage range	25 to 80Vdc																	
Capacitance range	22 to 680μF																	
Capacitance tolerance	±20% [M] (at 20℃, 120Hz)																	
Leakage current	I=0.01CV or 3μA whichever is greater (at 20℃, after 2 minutes)																	
Tangent of loss angle(tanδ)	<table><tr><td>Rated voltage(V)</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td></tr><tr><td>Tanδ</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.08</td><td>0.08</td></tr></table>						Rated voltage(V)	25	35	50	63	80	Tanδ	0.14	0.12	0.10	0.08	0.08
	Rated voltage(V)	25	35	50	63	80												
Tanδ	0.14	0.12	0.10	0.08	0.08													
(at 20℃, 120Hz)																		
ESR	Less than or equal to the value of Standard Ratings (at 20℃, 100kHz)																	
Low temperature characteristics (Impedance ratio at 100kHz)	Z (-25 ℃) / Z (+20 ℃) ≤ 1.5 Z (-55 ℃) / Z (+20 ℃) ≤ 2.0																	
Endurance	125℃, 4,000 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 125℃ with no voltage applied and then being stabilized at 20℃, capacitors shall meet the specified values for the endurance characteristics listed above.(with voltage treatment)																	
Damp Heat (Steady State)	85℃, 85% RH, 2,000 hrs, rated voltage applied																	
	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: HRK series, 25V / 270μF

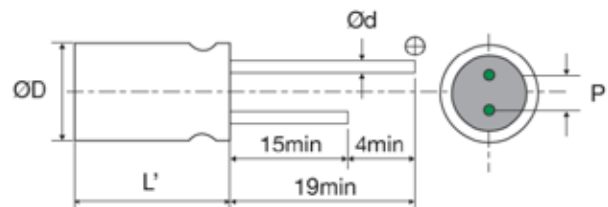
25	HRK	270	M	D	10
Voltage	Series	Capacitance	Tolerance	Diameter	Length

Marking and Dimensions



Frequency coefficient for ripple current

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



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
10.0×16.0	10.0	16.0		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 (125°C, 100kHz) [mA _{rms}]	Part Number
25	150	8.0 x 9.5	27	1600	25HRK150MD10
	220	8.0 x 9.5	27	1600	25HRK220MD10
	270	8.0 x 9.5	27	2000	25HRK270MD10
	330	8.0 x 9.5	27	2000	25HRK330MD10
	470	10.0 x 10.5	20	2800	25HRK470ME10
	560	10.0 x 10.5	20	2800	25HRK560ME10
	680	10.0 x 10.5	20	5700	25HRK680ME10
35	100	8.0 x 9.5	27	1600	35HRK100MD10
	150	8.0 x 9.5	27	1600	35HRK150MD10
	180	8.0 x 9.5	27	2000	35HRK180MD10
	220	8.0 x 9.5	27	2000	35HRK220MD10
	220	10.0 x 10.5	20	2000	35HRK220ME10
	270	10.0 x 10.5	20	2000	35HRK270ME10
	330	10.0 x 10.5	20	2800	35HRK330ME10
	390	10.0 x 10.5	20	2800	35HRK390ME10
	680	10.0 x 16.0	11	5200	35HRK680ME16
50	33	8.0 x 9.5	40	1100	50HRK33MD10
	47	8.0 x 9.5	40	1100	50HRK47MD10
	56	10.0 x 10.5	30	1400	50HRK56ME10
	68	10.0 x 10.5	30	1400	50HRK68ME10
	82	10.0 x 10.5	30	1400	50HRK82ME10
	150	10.0 x 11.5	19	3900	63HRK15z0ME11
	220	10.0 x 16.0	13	5100	63HRK220ME16
63	100	10.0 x 11.5	22	3700	63HRK100ME11
	150	10.0 x 16.0	15	4900	63HRK150ME16
	180	10.0 x 16.0	15	4900	63HRK180ME16
80	22	8.0 x 9.5	45	1050	80HRK22MD10
	33	10.0 x 10.5	36	1360	80HRK33ME10
	47	10.0 x 10.5	36	1360	80HRK47ME10
	68	10.0 x 11.5	32	3500	80HRK68ME11
	100	10.0 x 16.0	15	4400	80HRK100ME16