

HRX SERIES

UPGRADE

Load Life: 125°C 3000 hours, 135°C 2500 hours

◆FEATURES

- Miniaturized, High Capacitance, High Ripple Current, Low ESR, High Reliability.
- Suitable for DC Link of low voltage inverter.
- RoHS compliance.



◆SPECIFICATIONS

Items	Characteristics																			
Category Temperature Range	-40~+135℃ (150℃)																			
Rated Voltage Range	25~70Vdc																			
Capacitance Tolerance	±20% (20℃,120Hz)																			
Leakage Current(MAX)	I=0.03CV or 4μA whichever is greater. (After 1 minutes) I=Leakage Current(μA) C=Capacitance(μF) V=Rated Voltage(Vdc)																			
(tanδ) Dissipation Factor(MAX)	<table><tr><td>Rated Voltage (Vdc)</td><td>25</td><td>35</td><td>50</td><td>70</td></tr><tr><td>tanδ</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.10</td></tr></table> (20℃,120Hz) When capacitance is over 1000μF, tanδ shall be added 0.02 to the listed value with increase of every 1000μF.					Rated Voltage (Vdc)	25	35	50	70	tanδ	0.14	0.12	0.10	0.10					
Rated Voltage (Vdc)	25	35	50	70																
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Endurance	After applying rated voltage with rated ripple current for specified time at each temperature, the capacitors shall meet the following requirements. <table><tr><td>Capacitance Change</td><td>Within ±30% of the initial value.</td></tr><tr><td>Dissipation Factor</td><td>Not more than 300% of the specified value.</td></tr><tr><td>Leakage Current</td><td>Not more than the specified value.</td></tr></table> <table><tr><td>Temperature</td><td>Life Time (hrs)</td></tr><tr><td>125℃</td><td>3000</td></tr><tr><td>135℃</td><td>2500 (70V:2000)</td></tr></table>					Capacitance Change	Within ±30% of the initial value.	Dissipation Factor	Not more than 300% of the specified value.	Leakage Current	Not more than the specified value.	Temperature	Life Time (hrs)	125℃	3000	135℃	2500 (70V:2000)			
Capacitance Change	Within ±30% of the initial value.																			
Dissipation Factor	Not more than 300% of the specified value.																			
Leakage Current	Not more than the specified value.																			
Temperature	Life Time (hrs)																			
125℃	3000																			
135℃	2500 (70V:2000)																			
Over temperature proof	After applying rated voltage for 500 hours at 150℃, the capacitors shall meet the following requirements. <table><tr><td>Capacitance Change</td><td>Within ±30% of the initial value.</td></tr><tr><td>Dissipation Factor</td><td>Not more than 300% of the specified value.</td></tr><tr><td>Leakage Current</td><td>Not more than the specified value.</td></tr></table>					Capacitance Change	Within ±30% of the initial value.	Dissipation Factor	Not more than 300% of the specified value.	Leakage Current	Not more than the specified value.									
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Low Temperature Stability Impedance Ratio(MAX)	<table><tr><td>Rated Voltage (Vdc)</td><td>25</td><td>35</td><td>50</td><td>70</td></tr><tr><td>Z(-25℃)/Z(20℃)</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(-40℃)/Z(20℃)</td><td>3</td><td>3</td><td>3</td><td>3</td></tr></table> (120Hz)					Rated Voltage (Vdc)	25	35	50	70	Z(-25℃)/Z(20℃)	2	2	2	2	Z(-40℃)/Z(20℃)	3	3	3	3
Rated Voltage (Vdc)	25	35	50	70																
Z(-25℃)/Z(20℃)	2	2	2	2																
Z(-40℃)/Z(20℃)	3	3	3	3																

◆MULTIPLIER FOR RIPPLE CURRENT

Frequency (Hz)	120	1k	10k	100k≤
Coefficient	0.45	0.80	1.00	1.00

◆OPTION

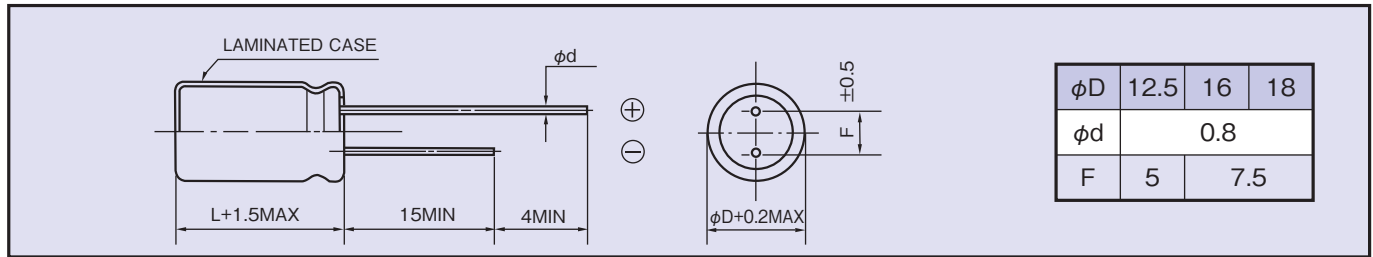
Standard item is blank.

◆PART NUMBER

 HRX M D×L
 Rated Voltage Series Capacitance Capacitance Tolerance Option Lead Forming Case Size

◆DIMENSIONS

(mm)


◆STANDARD SIZE

Rated Voltage (Vdc)	Capacitance (μF)	Size $\phi D \times L$ (mm)	Rated ripple current I_o (mA rms/ 135°C, 100kHz)	Rated ripple current I_o (mA rms/ 125°C, 100kHz)	ESR ($\Omega/20^\circ\text{C}$, 100kHz)	MAX ripple current I_{MAX} (mA rms/ 135°C, 100kHz)	MAX ripple current I_{MAX} (mA rms/ 125°C, 100kHz)	MAX ripple current I_{MAX} (mA rms/ 105°C, 100kHz)
25	1600	12.5×20	1020	1830	0.070	1770	2290	3080
	2000	12.5×23	1650	2350	0.057	2070	2670	3580
	2200	12.5×25	1980	2660	0.051	2260	2910	3910
	2700	16×20	1270	2300	0.047	2220	2870	3850
	3300	16×23	2060	2940	0.038	2580	3330	4470
	3600	18×20	1390	2510	0.044	2430	3130	4210
	3900	16×25	2470	3320	0.034	2810	3630	4870
	4300	18×23	2250	3200	0.036	2820	3640	4880
	5100	18×25	2690	3620	0.032	3060	3960	5310
35	1100	12.5×20	1020	1830	0.070	1770	2290	3080
	1300	12.5×23	1650	2350	0.057	2070	2670	3580
	1600	12.5×25	1980	2660	0.051	2260	2910	3910
	1800	16×20	1270	2300	0.047	2220	2870	3850
	2400	16×23	2060	2940	0.038	2580	3330	4470
	2400	18×20	1390	2510	0.044	2430	3130	4210
	2700	16×25	2470	3320	0.034	2810	3630	4870
	3000	18×23	2250	3200	0.036	2820	3640	4880
	3300	18×25	2690	3620	0.032	3060	3960	5310
50	510	12.5×20	1040	1880	0.066	1820	2350	3160
	620	12.5×23	1700	2420	0.054	2120	2740	3680
	680	12.5×25	2040	2740	0.048	2320	2990	4020
	820	16×20	1290	2330	0.045	2250	2910	3910
	1100	16×23	2090	2980	0.037	2620	3380	4540
	1100	18×20	1400	2520	0.043	2440	3160	4240
	1200	16×25	2500	3360	0.033	2850	3680	4940
	1300	18×23	2270	3230	0.035	2830	3660	4910
	1600	18×25	2710	3650	0.031	3090	3990	5350

Rated ripple current I_o : Ripple current continuous operation within endurance lifetime.

Maximum ripple current I_{MAX} : Maximum ripple current continuous operation. Estimated lifetime complies with our lifetime calculation formula.

◆STANDARD SIZE

Rated Voltage (Vdc)	Capacitance (μ F)	Size ϕ D×L (mm)	Rated ripple current I_0 (mA rms/ 135°C, 100kHz)	Rated ripple current I_0 (mA rms/ 125°C, 100kHz)	ESR (Ω /20°C, 100kHz)	MAX ripple current I_{MAX} (mA rms/ 135°C, 100kHz)	MAX ripple current I_{MAX} (mA rms/ 125°C, 100kHz)	MAX ripple current I_{MAX} (mA rms/ 105°C, 100kHz)
70	240	12.5×20	880	1360	0.084	1540	1990	2680
	330	12.5×23	1440	1830	0.068	1800	2320	3120
	360	12.5×25	1730	2100	0.061	1960	2540	3410
	430	16×20	1170	1800	0.056	2050	2650	3550
	560	16×23	1900	2420	0.046	2380	3070	4120
	560	18×20	1280	1970	0.052	2240	2890	3880
	620	16×25	2280	2770	0.041	2590	3350	4490
	680	18×23	2080	2640	0.043	2600	3360	4510
	820	18×25	2490	3030	0.038	2830	3660	4910

Rated ripple current I_0 : Ripple current continuous operation within endurance lifetime.

Maximum ripple current I_{MAX} : Maximum ripple current continuous operation. Estimated lifetime complies with our lifetime calculation formula.

