

**HRX SERIES**
**Load Life: 125°C 3000 hours, 135°C 2500 hours**

- Miniaturized, High Capacitance, High Ripple Current, Low ESR, High Reliability.
- Suitable for DC Link of low voltage inverter.
- AEC-Q200.

RoHS compliance


**◆SPECIFICATIONS**

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

**◆MULTIPLIER FOR RIPPLE CURRENT**

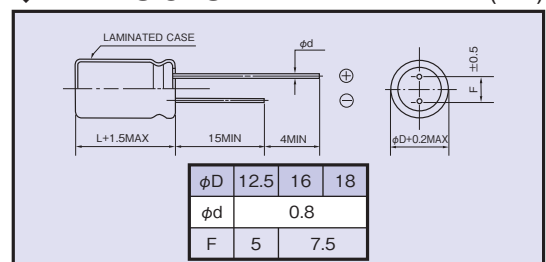
Frequency (Hz)	120	1k	10k	100k≤
Coefficient	0.45	0.80	1.00	1.00

**◆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 ( $\mu\text{F}$ )	Size $\phi\text{D}\times\text{L}$ (mm)	Rated ripple current $I_0$ (mA r.m.s./135°C,100kHz)	Rated ripple current $I_0$ (mA r.m.s./125°C,100kHz)	ESR ( $\Omega/20^\circ\text{C}$ , 100kHz)	MAX ripple current $I_{\text{MAX}}$ (mA r.m.s./135°C,100kHz)	MAX ripple current $I_{\text{MAX}}$ (mA r.m.s./125°C,100kHz)	MAX ripple current $I_{\text{MAX}}$ (mA r.m.s./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
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
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
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  $I_{\text{MAX}}$  :  
Maximum ripple current continuous operation.  
Estimated lifetime complies with our lifetime calculation formula.

