

HRF Series

Features

- ◆ Premium industrial grade.
- ◆ Long life 2000 Hrs at +105°C with ripple current applied.
- ◆ Expected life:75000 hrs at +65°C with ripple current applied.
- ◆ Various case sizes and vent construction.
- ◆ For detail specifications,please refer to Engineering Bulletin No.E114
- ◆ RoHS Compliant

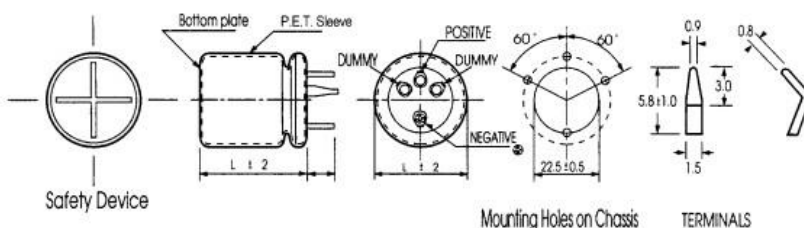
Specifications

Item	Performance Characteristics										
Operating Temperature Range	-25~+105°C										
Rate Voltage Range	160~400 VDC										
Capacitance Range	82~1200UF										
Capacitance Tolerance	±20% (120Hz, +20°C)										
Leakage current (+20°C,max.)	I≤0.02 CV (μA) After 5 minutes with rated working voltage applied.										
Dissipation factor (tgδ,at 20°C,120Hz)	15% max.										
Low Temperature Characteristics (120Hz)	Impedance ratio max. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th style="background-color: #e0ffff;">Working Voltage(VDC)</th> <th>160</th> <th>200</th> <th>250</th> <th>400</th> </tr> </thead> <tbody> <tr> <td style="background-color: #e0ffff;">Z-25°C / Z+20°C</td> <td>4</td> <td>4</td> <td>4</td> <td>8</td> </tr> </tbody> </table>	Working Voltage(VDC)	160	200	250	400	Z-25°C / Z+20°C	4	4	4	8
Working Voltage(VDC)	160	200	250	400							
Z-25°C / Z+20°C	4	4	4	8							
Load Life	Test conditions Duration time :2000Hrs Ambient temperature : +105°C Applied voltage : Rated DC working voltage After test requirement at +20°C Capacitance change : ≤±20% of the initial measured value Dissipation factor : ≤200% of the initial specified value Leakage current : ≤The initial specified value										
Shelf Life	Test conditions Duration time : 1000Hrs Ambient temperature : +105°C Applied voltage : None After test requirement at +20°C : Same limits as Load life Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes										

Multiplier for Ripple Current vs. Frequency

CAP(UF)\Frequency(HZ)	50(60)	120	400	1K	10K	50K-100K
10<CAP≤100	0.8	1	1.23	1.36	1.48	1.53
100<CAP≤1000	0.8	1	1.16	1.25	1.35	1.38
1000<CAP	0.8	1	1.11	1.17	1.25	1.28

Diagram of Dimensions:(unit:mm)



HRF series

Case Size

Φ D×L

Cap (μF) wv ΦD	160V				200V			
	30		35		30		35	
	Size	Size	Size	Size	Size	Ripple	Size	Ripple
220					30×26	1.15		
270					30×26	1.22		
330	30×26	1.39			30×31	1.33		
390	30×26	1.47			30×31	1.47	35×27	1.47
470	30×31	1.64			30×36	1.54	35×32	1.54
560	30×31	1.76			30×41	1.69	35×32	1.69
680	30×36	1.98	35×32	1.98	30×46	1.90	35×37	1.90
820	30×41	2.36	35×32	2.36	30×51	2.24	35×2	2.24
1000	30×51	2.60	35×37	2.60				
1200	30×56	2.73						

Cap (μF) wv ΦD	250V				400V			
	35		40		35		40	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
82					30×26	0.73		
100					30×31	0.82		
120					30×36	0.87	35×27	0.87
150					30×41	1.00	35×32	1.00
180	30×26	0.98			30×46	1.06	35×37	1.06
220	30×31	1.10			30×51	1.18	35×42	1.18
270	30×31	1.22						
330	30×36	1.36	35×32	1.36				
390	30×41	1.47	35×32	1.47				
470	30×41	1.58	35×37	1.58				
560	30×51	1.76	35×42	1.76				

Ripple Current (A,rms) at 105°C 100KHz