

HRE Series

Features

- ◆ Highly capacitors values and compact size.
- ◆ Two vent construction.
- ◆ 4 sanp-in terminals for printed circuit board mounting.
- ◆ For detail specifications, please refer to Engineering Bulletin No.E113
- ◆ RoHS Compliant

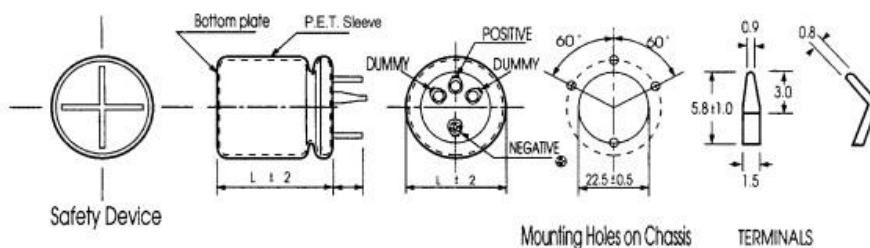
Specifications

Item	Performance Characteristics									
Operating Temperature Range	-40~+85°C	-25~+85°C								
Rate Voltage Range	16~100 VDC	160~450 VDC								
Capacitance Range	4700~82000UF	330~3300UF								
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)	Less than the value under table (%)									
	Φ / VDC	16	25	35	50	63	80	100	160~250	350~450
	Φ35 D.F(%)max	45	40	35	30	25	25	20	15	20
	Φ40 D.F(%)max	50	45	40	35	30	25	20	15	20
Low Temperature Characteristics (120Hz)	Impedance ratio max.									
	Working Voltage(VDC)	16	25	35~100	160~250	400~450				
	Z-25°C / Z+20°C	5	3	3	7	15				
Load Life	Test conditions									
	Duration time	:2000Hrs								
	Ambient temperature	: +85°C								
	Applied voltage	: Rated DC working voltage								
	After test requirement at +20°C									
	Capacitance change	: ≤±20% of the initial measured value								
	Dissipation factor	: ≤175% of the initial specified value								
Leakage current	: ≤The initial specified value									
Shelf Life	Test conditions									
	Duration time	: 1000Hrs								
	Ambient temperature	: +85°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)



HRE series

Case Size

Φ D×L

WV Cap (μF) ΦD	16V				25V			
	35		40		35		40	
	Size	Size	Size	Size	Size	Ripple	Size	Ripple
33000					35×52	5.76		
39000					35×63	6.24	40×52	6.24
47000	35×32	5.88			35×83	7.08	40×63	7.08
56000	35×63	6.48	40×52	6.48			40×83	7.40
68000	35×83	7.20	40×63	7.20			40×83	8.55
82000			40×83	8.16				

WV Cap (μF) ΦD	35V				50V			
	35		40		35		40	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
15000					35×52	4.53		
18000					35×63	5.07	40×52	5.07
22000	35×52	4.98			35×83	5.74	40×63	5.74
27000	35×63	5.82					40×63	6.16
33000	35×83	6.00	40×63	6.38				
39000	35×83	6.91	40×63	7.00				
47000			40×83	7.52				

WV Cap (μF) ΦD	63V				80V			
	35		40		35		40	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
4700					35×52	3.20		
6800					35×52	3.62		
8200					35×63	3.92	40×52	3.92
10000					35×83	4.42	40×63	4.42
12000	35×63	4.65	40×52	4.80			40×83	5.10
15000	35×83	4.90	40×63	5.00			40×83	5.58
18000	35×83	5.86						
22000			40×83	6.00				

WV Cap (μF) ΦD	100V				160V			
	35		40		35		40	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
1800					35×52	2.46		
2200					35×63	2.77	40×52	2.77
2700					35×83	3.00	40×63	3.00
3300							40×83	3.26
5600	35×63	3.64	40×52	3.64				
6800	35×83	3.94	40×63	3.94				
8200			40×83	4.47				

WV Cap (μF) ΦD	220V				250V			
	35		40		35		40	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
390					35×52	1.18		
1000	35×52	2.02			35×63	2.10		
1200	35×52	2.24			35×63	2.24	40×52	2.24
1500	35×63	2.44			35×83	2.37	40×63	2.37
1800	35×83	2.65	40×63	2.65			40×83	2.79
2700			40×83	3.03				

WV Cap (μF) ΦD	400V				450V			
	35		40		35		40	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
330					35×52	1.16		
390					35×63	1.22		
470	35×63	1.36			35×83	1.38	40×52	1.38
560	35×83	1.44	40×52	1.44	35×83	1.50	40×63	1.50
680	35×83	1.59	40×63	1.59			40×83	1.64
820			40×83	1.78				

Ripple Current (mA,rms) at 85 °C 120KHz