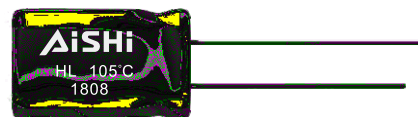


HL series

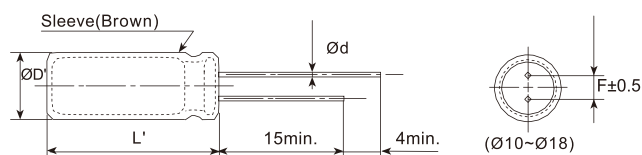
- Long life, downsized, high ripple current; For power supply applications
- Endurance: +105°C 8,000~12,000 hours
- RoHS Compliant



SPECIFICATIONS

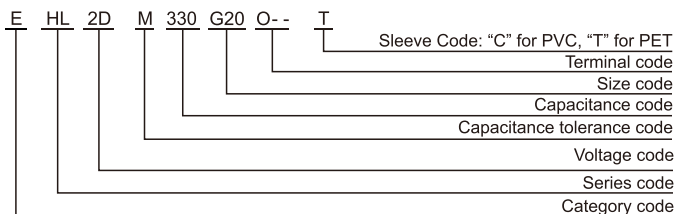
Items	Characteristics								
Category Temperature Range	-40~+105°C(160~400V _{dc})				-25~+105°C(450~500V _{dc})				
Rated Voltage Range	160~500 V _{dc}								
Capacitance Tolerance	±20%(M) (at 20°C, 120Hz)								
Leakage Current		After 1 minute		After 5 minutes		Where, I: Max. leakage current (μA), C: Nominal capacitance (μF), V: Rated voltage (V) (at 20°C)			
	CV≤1000	I≤0.1CV+40μA		I≤0.03CV+15μA					
	CV>1000	I≤0.04CV+100μA		I≤0.02CV+25μA					
Dissipation Factor (tanδ)	Rated Voltage(V _{dc})	160	200	250	350	400	450	500	(at 20°C, 120Hz)
	tanδ (max.)	0.18	0.18	0.18	0.24	0.24	0.24	0.24	
Low Temperature Characteristics (Max. Impedance Ratio)	Rated Voltage(V _{dc})	160	200	250	350	400	450	500	(at 120Hz)
	Z (-25°C)/Z(+20°C)	3	3	3	6	6	6	6	
	Z (-40°C)/Z(+20°C)	8	8	8	10	10	-	-	
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after DC voltage plus the rated ripple current is applied for a specified period of time at 105°C.								
	Capacitance Change	≤±20% of the initial value					Rated Voltage	160 to 450V _{dc}	500V _{dc}
	D.F. (tanδ)	≤200% of the initial specified value					Life time	L≤20: 10,000 hours	Φ10: 8,000 hours
	Leakage Current	≤The initial specified value						L >20: 12,000 hours	Φ≥12.5: 10,000 hours
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.								
	Capacitance Change	≤±20% of the initial value							
	D.F. (tanδ)	≤200% of the initial specified value							
	Leakage Current	≤200% of the initial specified value							

DIMENSIONS[mm]



ØD	10	12.5	16	18
Ød	0.6	0.6	0.8	0.8
F	5.0	5.0	7.5	7.5
ØD'	ØD+0.5max.			
L'	L+2max.			

PART NUMBERING SYSTEM



RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

Freq.(Hz)	120	1k	10k	100k
Cap.(μF)				
<100	1.0	1.75	2.25	2.50
≥100	1.0	1.67	2.05	2.25

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

HL series

■ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (mA _{rms} /105°C, 120Hz)	Part Number
160(2C)	33	10×16	0.18	210	EHL2CM330G16OT
	47	10×20	0.18	300	EHL2CM470G20OT
	56	10×20	0.18	318	EHL2CM560G20OT
	68	10×25	0.18	345	EHL2CM680G25OT
	82	10×25	0.18	416	EHL2CM820G25OT
		10×30	0.18	448	EHL2CM820G30OT
	100	12.5×20	0.18	575	EHL2CM101W20OT
	120	10×35	0.18	572	EHL2CM121G35OT
	150	10×40	0.18	668	EHL2CM151G40OT
		10×45	0.18	696	EHL2CM151G45OT
		12.5×25	0.18	767	EHL2CM151W25OT
	180	10×50	0.18	788	EHL2CM181G50OT
		12.5×30	0.18	885	EHL2CM181W30OT
		16×20	0.18	858	EHL2CM181L20OT
	220	12.5×35	0.18	1044	EHL2CM221W35OT
		16×25	0.18	1022	EHL2CM221L25OT
		18×20	0.18	992	EHL2CM221M20OT
	270	12.5×40	0.18	1196	EHL2CM271W40OT
		12.5×45	0.18	1230	EHL2CM271W45OT
	330	12.5×50	0.18	1404	EHL2CM331W50OT
		16×30	0.18	1355	EHL2CM331L30OT
		18×25	0.18	1292	EHL2CM331M25OT
	390	16×35	0.18	1505	EHL2CM391L35OT
	470	16×40	0.18	1708	EHL2CM471L40OT
		16×45	0.18	1730	EHL2CM471L45OT
		18×30	0.18	1665	EHL2CM471M30OT
	560	18×35	0.18	1722	EHL2CM471M35OT
		16×50	0.18	1924	EHL2CM561L50OT
		18×40	0.18	1910	EHL2CM561M40OT
	680	18×45	0.18	2135	EHL2CM681M45OT
		18×50	0.18	2148	EHL2CM681M50OT
200(2D)	33	10×20	0.18	255	EHL2DM330G20OT
	39	10×20	0.18	268	EHL2DM390G20OT
	47	10×20	0.18	302	EHL2DM470G20OT
	56	10×25	0.18	346	EHL2DM560G25OT
	68	10×30	0.18	406	EHL2DM680G30OT
	82	12.5×20	0.18	522	EHL2DM820W20OT
	100	10×35	0.18	520	EHL2DM101G35OT
		12.5×25	0.18	628	EHL2DM101W25OT
	120	10×40	0.18	595	EHL2DM121G40OT
		10×45	0.18	624	EHL2DM121G45OT
		12.5×30	0.18	728	EHL2DM121W30OT
		16×20	0.18	698	EHL2DM121L20OT
	150	10×50	0.18	720	EHL2DM151G50OT
		12.5×35	0.18	862	EHL2DM151W35OT
	180	16×25	0.18	928	EHL2DM181L25OT
		18×20	0.18	895	EHL2DM181M20OT
		12.5×40	0.18	1078	EHL2DM221W40OT
	220	12.5×45	0.18	1116	EHL2DM221W45OT
		18×25	0.18	1050	EHL2DM221M25OT
		12.5×50	0.18	1268	EHL2DM271W50OT
	270	16×30	0.18	1225	EHL2DM271L30OT
		16×35	0.18	1252	EHL2DM271L35OT
	330	16×40	0.18	1428	EHL2DM331L40OT
		18×30	0.18	1402	EHL2DM331M30OT
	390	16×45	0.18	1575	EHL2DM391L45OT
		18×35	0.18	1570	EHL2DM391M35OT
	470	16×50	0.18	1762	EHL2DM471L50OT
		18×40	0.18	1748	EHL2DM471M40OT
		18×45	0.18	1775	EHL2DM471M45OT
	560	18×50	0.18	1952	EHL2DM561M50OT

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (mA _{rms} /105°C, 120Hz)	Part Number
250(2E)	27	10×20	0.18	205	EHL2EM270G20OT
	33	10×20	0.18	242	EHL2EM330G20OT
	47	10×25	0.18	316	EHL2EM470G25OT
		10×30	0.18	342	EHL2EM470G30OT
	56	12.5×20	0.18	430	EHL2EM560W20OT
	68	10×35	0.18	432	EHL2EM680G35OT
		10×40	0.18	495	EHL2EM820G40OT
		10×45	0.18	518	EHL2EM820G45OT
		12.5×25	0.18	565	EHL2EM820W25OT
	82	12.5×30	0.18	575	EHL2EM820W30OT
		10×50	0.18	586	EHL2EM101G50OT
		12.5×30	0.18	662	EHL2EM101W30OT
		16×20	0.18	638	EHL2EM101L20OT
	100	12.5×35	0.18	770	EHL2EM121W35OT
		16×25	0.18	758	EHL2EM121L25OT
		18×20	0.18	732	EHL2EM121M20OT
	150	12.5×40	0.18	892	EHL2EM151W40OT
		12.5×45	0.18	922	EHL2EM151W45OT
	180	12.5×50	0.18	1040	EHL2EM181W50OT
		16×30	0.18	995	EHL2EM181L30OT
		18×25	0.18	955	EHL2EM181M25OT
	220	16×35	0.18	1130	EHL2EM221L35OT
		18×30	0.18	1138	EHL2EM221M30OT
	270	16×40	0.18	1290	EHL2EM271L40OT
		16×45	0.18	1315	EHL2EM271L45OT
		18×35	0.18	1300	EHL2EM271M35OT
	330	16×50	0.18	1480	EHL2EM331L50OT
		18×40	0.18	1466	EHL2EM331M40OT
		18×45	0.18	1488	EHL2EM331M45OT
	390	18×50	0.18	1630	EHL2EM391M50OT
350(2V)	15	10×16	0.24	150	EHL2VM150G16OT
	18	10×20	0.24	165	EHL2VM180G20OT
	22	10×20	0.24	200	EHL2VM220G20OT
	27	10×25	0.24	242	EHL2VM270G25OT
		10×30	0.24	256	EHL2VM270G30OT
	33	12.5×20	0.24	332	EHL2VM330W20OT
	39	10×35	0.24	326	EHL2VM390G35OT
	47	10×40	0.24	376	EHL2VM470G40OT
		12.5×25	0.24	425	EHL2VM470W25OT
	56	10×45	0.24	426	EHL2VM560G45OT
		12.5×30	0.24	498	EHL2VM560W30OT
		16×20	0.24	476	EHL2VM560L20OT
		10×50	0.24	486	EHL2VM680G50OT
	68	12.5×35	0.24	583	EHL2VM680W35OT
		18×20	0.24	550	EHL2VM680M20OT
	82	12.5×40	0.24	658	EHL2VM820W40OT
		16×25	0.24	628	EHL2VM820L25OT
		12.5×45	0.24	752	EHL2VM101W45OT
	100	12.5×50	0.24	772	EHL2VM101W50OT
		16×30	0.24	744	EHL2VM101L30OT
		18×25	0.24	710	EHL2VM101M25OT
	120	16×35	0.24	832	EHL2VM121L35OT
		16×40	0.24	964	EHL2VM151L40OT
	150	16×45	0.24	978	EHL2VM151L45OT
		18×30	0.24	944	EHL2VM151M30OT
	180	16×50	0.24	1095	EHL2VM181L50OT
		18×35	0.24	1065	EHL2VM181M35OT
		18×40	0.24	1086	EHL2VM181M40OT
	220	18×45	0.24	1215	EHL2VM221M45OT
		18×50	0.24	1222	EHL2VM221M50OT

Radial Type

HL series

■ STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (mA _{rms} /105°C, 120Hz)	Part Number
400(2G)	12	10×16	0.24	135	EHL2GM120G16OT
	15	10×20	0.24	155	EHL2GM150G20OT
	18	10×20	0.24	180	EHL2GM180G20OT
	22	10×25	0.24	216	EHL2GM220G25OT
	27	10×30	0.24	256	EHL2GM270G30OT
		12.5×20	0.24	300	EHL2GM270W20OT
	33	10×35	0.24	300	EHL2GM330G35OT
		10×40	0.24	342	EHL2GM390G40OT
	39	10×45	0.24	358	EHL2GM390G45OT
		12.5×25	0.24	390	EHL2GM390W25OT
	47	12.5×30	0.24	456	EHL2GM470W30OT
		16×20	0.24	438	EHL2GM470L20OT
	56	10×50	0.24	440	EHL2GM560G50OT
		12.5×35	0.24	528	EHL2GM560W35OT
		18×20	0.24	502	EHL2GM560M20OT
	68	12.5×40	0.24	600	EHL2GM680W40OT
		16×25	0.24	572	EHL2GM680L25OT
	82	12.5×45	0.24	684	EHL2GM820W45OT
		12.5×50	0.24	700	EHL2GM820W50OT
		16×30	0.24	672	EHL2GM820L30OT
		18×25	0.24	644	EHL2GM820M25OT
	100	16×35	0.24	760	EHL2GM101L35OT
		16×40	0.24	864	EHL2GM101L40OT
	120	16×45	0.24	880	EHL2GM121L45OT
		18×30	0.24	842	EHL2GM121M30OT
		18×35	0.24	875	EHL2GM121M35OT
	150	16×50	0.24	1000	EHL2GM151L50OT
		18×40	0.24	985	EHL2GM151M40OT
	180	18×45	0.24	1098	EHL2GM181M45OT
		18×50	0.24	1225	EHL2GM221M50OT

WV (V _{dc})	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (mA _{rms} /105°C, 120Hz)	Part Number
450(2W)	10	10×16	0.24	120	EHL2WM100G16OT
	12	10×20	0.24	150	EHL2WM120G20OT
	15	10×25	0.24	186	EHL2WM150G25OT
	18	10×30	0.24	216	EHL2WM180G30OT
		12.5×20	0.24	256	EHL2WM180W20OT
	22	10×35	0.24	252	EHL2WM220G35OT
		10×40	0.24	292	EHL2WM270G40OT
	27	10×45	0.24	306	EHL2WM270G45OT
		12.5×25	0.24	342	EHL2WM270W25OT
	33	12.5×30	0.24	400	EHL2WM330W30OT
		16×20	0.24	386	EHL2WM330L20OT
	39	10×50	0.24	378	EHL2WM390G50OT
		12.5×35	0.24	462	EHL2WM390W35OT
		18×20	0.24	440	EHL2WM390M20OT
	47	12.5×40	0.24	528	EHL2WM470W40OT
		16×25	0.24	500	EHL2WM470L25OT
	56	12.5×45	0.24	592	EHL2WM560W45OT
		16×30	0.24	588	EHL2WM560L30OT
		18×25	0.24	562	EHL2WM560M25OT
	68	12.5×50	0.24	672	EHL2WM680W50OT
		16×35	0.24	664	EHL2WM680L35OT
	82	16×40	0.24	750	EHL2WM820L40OT
		16×45	0.24	762	EHL2WM820L45OT
		18×30	0.24	734	EHL2WM820M30OT
	100	16×50	0.24	858	EHL2WM101L50OT
		18×35	0.24	836	EHL2WM101M35OT
	120	18×40	0.24	935	EHL2WM121M40OT
		18×45	0.24	948	EHL2WM121M45OT
	150	18×50	0.24	1065	EHL2WM151M50OT
500(2H)	6.8	10×20	0.24	90	EHL2HM6R8G20OT
	10	10×30	0.24	130	EHL2HM100G30OT
		12.5×20	0.24	125	EHL2HM100W20OT
	12	12.5×20	0.24	135	EHL2HM120W20OT
		10×35	0.24	170	EHL2HM150G35OT
		12.5×25	0.24	170	EHL2HM150W25OT
	15	16×20	0.24	165	EHL2HM150L20OT
		10×45	0.24	190	EHL2HM180G45OT
		12.5×30	0.24	190	EHL2HM180W30OT
	18	10×50	0.24	230	EHL2HM220G50OT
		12.5×35	0.24	225	EHL2HM220W35OT
		16×20	0.24	220	EHL2HM220L20OT
	22	18×25	0.24	285	EHL2HM330M25OT
		18×30	0.24	400	EHL2HM470M30OT